



SIL-4 to SIL-12 DC/DC Converters



DIL-24 DC/DC Converters



1x1", 2x1", 2x1.6", 2x2" DC/DC Converters



1, 1/2 and 1/4 Brick DC/DC Converters



Vehicle DC/DC Converters



AC/DC Open Frame

# POWER SUPPLIES

## Standard Product

## Selection Guide

## 2007

**FABRIMEX**

[www.fabrimex.com](http://www.fabrimex.com)



## **History**

*Fabrimex AG was founded almost 60 years ago. We have been developing and producing power supplies in-house since 30 years and have earned an excellent reputation in the Swiss and the international markets.*

*Thanks to our vast experience, we are fully aware of your expectations. A power supply that works well and delivers maximum performance. With the longest possible service life, of course.*

## **General**

*The majority of our employees are engineers and technicians who have many years experience in the use and application of our products.*

*Fabrimex fulfils the requirements of industrial manufacturers and users of built-in, laboratory and special power supply equipment for electronics. Typical applications are in:*

- control and monitoring systems*
- portable instruments*
- telecommunications*
- and*
- data processing*

*Fabrimex products correspond with international norms and standards for safety and EMC. On account of our 25-years-plus of expertise in development, production and application areas, our customers profit from the price / performance ratio, conformance to the trend of the market and with quality matching without compromise.*

## **Fabrimex Vision**

*"Together, we seek to inspire our customers by providing them with innovative solutions with lasting benefits, whilst maintaining high quality standards."*

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# DC/DC REGULATORS

## 1-5 Amp

### SRL-Series

**DC/DC modules with wide input voltage range without galvanic separation**

- High efficiency up to 93%
- High reliability
- Fast action feed-back module
- No derating up to 71/75°C ambient temperature
- Very low output ripple and noise
- Burn-in at full load
- Industry standard pinout
- EMC according to EN55022 Class B (except ERL)
- **Dimensions: see data sheet**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                | mA      | %      | mVpp   |         |
| SRL3303-12      | 4.8...40        | 3.3              | 1.0              | 10      | 75     | 60     | A1      |
| SRL5005-12      | 7...40          | 5.1              | 1.0              | 10      | 82     | 60     | A1      |
| SRL1212-12      | 14...40         | 12.0             | 1.0              | 10      | 88     | 60     | A1      |
| SRL1515-12      | 17...40         | 15.0             | 1.0              | 10      | 90     | 60     | A1      |
| ERL1220-10      | 16...32         | 12.0             | 1.6              | 15      | 93     | 40     | A8      |
| ERL1524-10      | 16...32         | 15.0             | 1.6              | 15      | 93     | 40     | A8      |
| SRL0306-12      | 8...40          | 3.3              | 2.0              | 10      | 80     | 40     | A1      |
| SRL0510-12      | 8...40          | 5.1              | 2.0              | 10      | 86     | 40     | A1      |
| SRL0310-S       | 8...40          | 3.3              | 3.0              | 5       | 80     | 60     | B1      |
| SRL0515-S       | 8...40          | 5.1              | 3.0              | 5       | 85     | 60     | B1      |
| SRL1236-S       | 15...40         | 12.0             | 3.0              | 10      | 91     | 60     | B1      |
| SRL1545-S       | 18...40         | 15.0             | 3.0              | 15      | 93     | 60     | B1      |
| SRL0315-S (S2)* | 8...40          | 3.3              | 5.0              | 5       | 80     | 50     | F1/F2   |
| SRL0525-S (S2)* | 8...40          | 5.1              | 5.0              | 5       | 85     | 50     | F1/F2   |
| SRL1260-S (S2)* | 15...40         | 12.0             | 5.0              | 10      | 91     | 50     | F1/F2   |
| SRL1575-S (S2)* | 18...40         | 15.0             | 5.0              | 15      | 93     | 50     | F1/F2   |

\* S2 = with inhibit and adjustment pins

## 10 Amp

### ERS-Series, SIL-11

**Single inline, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 95%
- 5 and 12V input voltage
- No derating up to 50°C ambient temperature
- Very low output ripple and noi.
- Industry standard pinout
- Short circuit protection
- Over temperature protection
- **Dimensions: 50.8x8.3x12.7mm (LxWxH)**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                | mA      | %      | mVpp   |         |
| ERS05-1V010     | 3...5.5         | 1.0              | 10               | 50      | 85     | 50     | S11     |
| ERS05-1V212     | 3...5.5         | 1.2              | 10               | 50      | 86     | 50     | S11     |
| ERS05-1V515     | 3...5.5         | 1.5              | 10               | 50      | 88     | 50     | S11     |
| ERS05-1V818     | 3...5.5         | 1.8              | 10               | 50      | 90     | 50     | S11     |
| ERS05-2V020     | 3...5.5         | 2.0              | 10               | 60      | 91     | 50     | S11     |
| ERS05-2V525     | 3...5.5         | 2.5              | 10               | 60      | 93     | 50     | S11     |
| ERS05-3V333     | 3...5.5         | 3.3              | 10               | 60      | 95     | 50     | S11     |
| ERS12-1V010     | 9...14          | 1.0              | 10               | 50      | 84     | 50     | S11     |
| ERS12-1V212     | 9...14          | 1.2              | 10               | 50      | 86     | 50     | S11     |
| ERS12-1V515     | 9...14          | 1.5              | 10               | 50      | 89     | 50     | S11     |
| ERS12-1V818     | 9...14          | 1.8              | 10               | 60      | 90     | 50     | S11     |
| ERS12-2V020     | 9...14          | 2.0              | 10               | 60      | 91     | 50     | S11     |
| ERS12-2V525     | 9...14          | 2.5              | 10               | 60      | 92     | 50     | S11     |
| ERS12-3V333     | 9...14          | 3.3              | 10               | 70      | 93     | 50     | S11     |
| ERS12-0550      | 9...14          | 5.0              | 10               | 70      | 95     | 50     | S11     |
| ERS12-0550A     | 8.3...14        | 0.8...5          | 10               | 70      | 93     | 50     | S11     |

Alternative: ERS-.....N N= negative remote on/off logic

## 10 Amp

### ERS-Series, SMD

**Surface mounted, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 95%
- 5 and 12V input voltage
- No derating up to 50°C ambient temperature
- Very low output ripple and noise
- Short circuit protection
- Over temperature protection
- **Dimensions: 33x13.5x9.3mm (LxWxH)**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                | mA      | %      | mVpp   |         |
| ERS05-1V010-S   | 3...5.5         | 1.0              | 10               | 50      | 85     | 50     | SMD     |
| ERS05-1V212-S   | 3...5.5         | 1.2              | 10               | 50      | 86     | 50     | SMD     |
| ERS05-1V515-S   | 3...5.5         | 1.5              | 10               | 50      | 88     | 50     | SMD     |
| ERS05-1V818-S   | 3...5.5         | 1.8              | 10               | 50      | 90     | 50     | SMD     |
| ERS05-2V020-S   | 3...5.5         | 2.0              | 10               | 60      | 91     | 50     | SMD     |
| ERS05-2V525-S   | 3...5.5         | 2.5              | 10               | 60      | 93     | 50     | SMD     |
| ERS05-3V333-S   | 3...5.5         | 3.3              | 10               | 60      | 95     | 50     | SMD     |
| ERS12-1V010-S   | 9...14          | 1.0              | 10               | 50      | 84     | 50     | SMD     |
| ERS12-1V212-S   | 9...14          | 1.2              | 10               | 50      | 86     | 50     | SMD     |
| ERS12-1V515-S   | 9...14          | 1.5              | 10               | 50      | 89     | 50     | SMD     |
| ERS12-1V818-S   | 9...14          | 1.8              | 10               | 50      | 90     | 50     | SMD     |
| ERS12-2V020-S   | 9...14          | 2.0              | 10               | 60      | 91     | 50     | SMD     |
| ERS12-2V525-S   | 9...14          | 2.5              | 10               | 60      | 92     | 50     | SMD     |
| ERS12-3V333-S   | 9...14          | 3.3              | 10               | 60      | 93     | 50     | SMD     |
| ERS12-0550-S    | 9...14          | 5.0              | 10               | 70      | 95     | 50     | SMD     |
| ERS12-0550A-S   | 8.3...14        | 0.8...5          | 10               | 60      | 93     | 50     | SMD     |

Alternative: ERS-.....N N= negative remote on/off logic

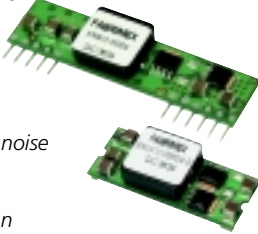
# DC/DC REGULATORS

## 10 Amp

ERW-Series, SIL-12 / SMD

**Surface mounted, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 95%
- Wide output voltage range 0.75 - 5.0 VDC
- No derating up to 60°C ambient temperature
- Very low output ripple and noise
- Remote on/off control
- Short circuit protection
- Over temperature protection
- **Dimensions: see data sheet**



**CU**®  
E195564

| Model           | U <sub>in</sub>            | U <sub>out</sub>                                          | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|----------------------------|-----------------------------------------------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC                        | VDC                                                       | A                | mA      | %      | mVpp   |         |
| ERW12-0550A     | 6...14                     | 0.75...5.0                                                | 10               |         | 95     | 75     | S12     |
| ERW12-0550A-S   | 6...14                     | 0.75...5.0                                                | 10               |         | 95     | 75     | SMD     |
| Alternative:    | ERW.-.....N<br>ERW.-.....P | N= negative remote on/off logic<br>P= power good function |                  |         |        |        |         |

## 15 Amp

ERS-Series, SIL-11 / SMD

**Single inline or SMD, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 94%
- Wide output voltage range 0.75-3.6V
- No derating up to 30°C ambient temperature
- Very low output ripple and noise
- Remote on/off control
- Short circuit protection
- Over temperature protection
- **Dimensions: see data sheet**



**CU**®  
E195564

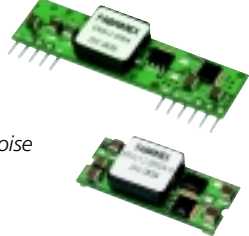
| Model           | U <sub>in</sub> | U <sub>out</sub>                | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|---------------------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC                             | A                | mA      | %      | mVpp   |         |
| ERS05-3V350     | 3...5.5         | 0.75...3.6                      | 15               |         | 94     | 50     | S11     |
| ERS05-3V350-S   | 3...5.5         | 0.75...3.6                      | 15               |         | 94     | 50     | SMD     |
| Alternative:    | ERS.-.....N     | N= negative remote on/off logic |                  |         |        |        |         |

## 16 Amp

ERW-Series, SIL-12 / SMD

**Surface mounted, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 94%
- Wide output voltage range 0.75 - 5.0 VDC
- No derating up to 30°C ambient temperature
- Very low output ripple and noise
- Remote on/off control
- Short circuit protection
- Over temperature protection
- **Dimensions: see data sheet**



**CU**®  
E195564

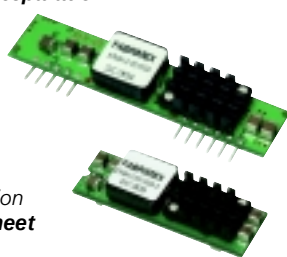
| Model           | U <sub>in</sub>            | U <sub>out</sub>                                          | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|----------------------------|-----------------------------------------------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC                        | VDC                                                       | A                | mA      | %      | mVpp   |         |
| ERW12-0580A     | 6...14                     | 0.75...5.0                                                | 16               |         | 94     | 75     | S12     |
| ERW12-0580A-S   | 6...14                     | 0.75...5.0                                                | 16               |         | 94     | 75     | SMD     |
| Alternative:    | ERW.-.....N<br>ERW.-.....P | N= negative remote on/off logic<br>P= power good function |                  |         |        |        |         |

## 20 Amp

ERW-Series, SIL-12 / SMD

**Surface mounted, power-on-point (POP®) DC/DC modules without galvanic separation**

- High efficiency up to 94%
- Wide output voltage range 0.75 - 5.0 VDC
- Very low output ripple and noise
- Remote on/off control
- Short circuit protection
- Over temperature protection
- **Dimensions: see data sheet**



**CU**®  
E195564

| Model           | U <sub>in</sub>            | U <sub>out</sub>                                          | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|----------------------------|-----------------------------------------------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC                        | VDC                                                       | A                | mA      | %      | mVpp   |         |
| ERW12-05100A    | 6...14                     | 0.75...5.0                                                | 20               |         | 94     | 75     | S12     |
| ERW12-05100A-S  | 6...14                     | 0.75...5.0                                                | 20               |         | 94     | 75     | SMD     |
| Alternative:    | ERW.-.....N<br>ERW.-.....P | N= negative remote on/off logic<br>P= power good function |                  |         |        |        |         |

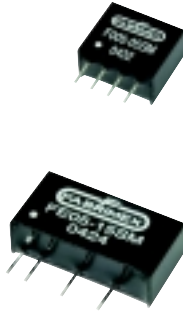
# DC/DC CONVERTERS (UNREGULATED)

## 1 Watt

### FO / FE-Series, SIL-4 / SIL-7

#### Single inline, power-on-point (POP®) unregulated DC/DC modules

- I/O isolation of 1'000Vdc
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Industry standard pinout
- Short circuit protection 1sec.
- **Dimensions**  
FO series: 11,5 x 6 x 10 mm  
FE series: 19,6 x 6 x 10 mm



| Model                  | Uin                                                                       | Uout                                   | Iout | η typ. | ripple | Pinning |
|------------------------|---------------------------------------------------------------------------|----------------------------------------|------|--------|--------|---------|
| Single Versions, SIL-4 | VDC                                                                       | VDC                                    | mA   | %      | mVpp   |         |
| FO(xx)-1V8SM           | 1.8,3,3.5,9,12,15,24 (±10%)                                               | 1.8                                    | 555  | 70     | 100    | S4-1    |
| FO(xx)-3V3SM           |                                                                           | 3.3                                    | 303  | 75     | 100    | S4-1    |
| FO(xx)-05SM            |                                                                           | 5.0                                    | 200  | 70-78  | 100    | S4-1    |
| FO(xx)-09SM            |                                                                           | 9.0                                    | 111  | 70-78  | 100    | S4-1    |
| FO(xx)-12SM            |                                                                           | 12.0                                   | 84   | 78-82  | 100    | S4-1    |
| FO(xx)-15SM            |                                                                           | 15.0                                   | 66   | 80-84  | 100    | S4-1    |
| FO(xx)-24SM            |                                                                           | 24.0                                   | 42   | 74-85  | 100    | S4-1    |
| Single Versions, SIL-7 |                                                                           |                                        |      |        |        |         |
| FE(xx)-1V8SM           | 1.8,3,3.5,9,12,15,24 (±10%)                                               | 1.8                                    | 555  | 70     | 100    | S7-1    |
| FE(xx)-3V3SM           |                                                                           | 3.3                                    | 303  | 75     | 100    | S7-1    |
| FE(xx)-05SM            |                                                                           | 5.0                                    | 200  | 70-78  | 100    | S7-1    |
| FE(xx)-09SM            |                                                                           | 9.0                                    | 111  | 70-78  | 100    | S7-1    |
| FE(xx)-12SM            |                                                                           | 12.0                                   | 84   | 78-82  | 100    | S7-1    |
| FE(xx)-15SM            |                                                                           | 15.0                                   | 66   | 80-84  | 100    | S7-1    |
| FE(xx)-24SM            |                                                                           | 24.0                                   | 42   | 74-85  | 100    | S7-1    |
| Ordering Example:      | Substitute (xx) for 1V8, 3V3, 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                                        |      |        |        |         |
| Standard Versions:     | FE...xM                                                                   | M = 1'000 Vdc input / output isolation |      |        |        |         |
| Option:                | FE...xH                                                                   | H = 2'000 Vdc input / output isolation |      |        |        |         |

## 1 Watt

### FB-Series, SIL-7

#### Single inline, power-on-point (POP®) unregulated DC/DC modules

- I/O isolation of 1'000 or 2'000Vdc
- Efficiency up to 80%
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Industry standard pinout
- Short circuit protection 1sec.
- **Dimensions: 19.6 x 6 x 10.2 mm (LxWxH)**



| Model              | Uin                                                                       | Uout                                   | Iout | η typ. | Ripple | Pinning |
|--------------------|---------------------------------------------------------------------------|----------------------------------------|------|--------|--------|---------|
| Single Versions    | VDC                                                                       | VDC                                    | mA   | %      | mVpp   |         |
| FB(xx)-1V8SM       | 1.8,3,3.5,9,12,15,24 (±10%)                                               | 1.8                                    | 555  | 70     | 100    | S7-2    |
| FB(xx)-3V3SM       |                                                                           | 3.3                                    | 303  | 75     | 100    | S7-2    |
| FB(xx)-05SM        |                                                                           | 5.0                                    | 200  | 70-78  | 100    | S7-2    |
| FB(xx)-09SM        |                                                                           | 9.0                                    | 111  | 70-78  | 100    | S7-2    |
| FB(xx)-12SM        |                                                                           | 12.0                                   | 84   | 78-82  | 100    | S7-2    |
| FB(xx)-15SM        |                                                                           | 15.0                                   | 66   | 80-84  | 100    | S7-2    |
| FB(xx)-24SM        |                                                                           | 24.0                                   | 42   | 74-85  | 100    | S7-2    |
| Dual Versions      |                                                                           |                                        |      |        |        |         |
| FB(xx)-1V8DM       | 1.8,3,3.5,9,12,15,24 (±10%)                                               | ±1.8                                   | ±278 | 70     | ±75    | S7-5    |
| FB(xx)-3V3DM       |                                                                           | ±3.3                                   | ±152 | 70     | ±75    | S7-5    |
| FB(xx)-05DM        |                                                                           | ±5.0                                   | ±100 | 70-78  | ±75    | S7-5    |
| FB(xx)-09DM        |                                                                           | ±9.0                                   | ±56  | 75-80  | ±75    | S7-5    |
| FB(xx)-12DM        |                                                                           | ±12.0                                  | ±42  | 78-84  | ±75    | S7-5    |
| FB(xx)-15DM        |                                                                           | ±15.0                                  | ±33  | 80-84  | ±75    | S7-5    |
| FB(xx)-24DM        |                                                                           | ±24.0                                  | ±21  | 80-84  | ±75    | S7-5    |
| Ordering Example:  | Substitute (xx) for 1V8, 3V3, 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                                        |      |        |        |         |
| Standard Versions: | FB...xM                                                                   | M = 1'000 Vdc input / output isolation |      |        |        |         |
| Option:            | FB...xH                                                                   | H = 2'000 Vdc input / output isolation |      |        |        |         |

## 1 Watt

### FK-Series, SIL-7

#### Single inline, power-on-point (POP®) unregulated DC/DC modules

- I/O isolation of 3'000 or 4'000Vdc
- Industry standard pinout
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 19.6 x 6 x 10.2 mm (3kVdc isolation)**
- **Dimensions: 19.6 x 7.1 x 10.2 mm (4kVdc isolation)**



| Model              | Uin                                                                       | Uout                                   | Iout | η typ. | Ripple | Pinning |
|--------------------|---------------------------------------------------------------------------|----------------------------------------|------|--------|--------|---------|
| Single Versions    | VDC                                                                       | VDC                                    | mA   | %      | mVpp   |         |
| FK(xx)-1V8SV       | 1.8,3,3.5,9,12,15,24 (±10%)                                               | 1.8                                    | 555  | 70     | 100    | S7-3    |
| FK(xx)-3V3SV       |                                                                           | 3.3                                    | 303  | 75     | 100    | S7-3    |
| FK(xx)-05SV        |                                                                           | 5.0                                    | 200  | 70-78  | 100    | S7-3    |
| FK(xx)-09SV        |                                                                           | 9.0                                    | 111  | 70-80  | 100    | S7-3    |
| FK(xx)-12SV        |                                                                           | 12.0                                   | 84   | 78-82  | 100    | S7-3    |
| FK(xx)-15SV        |                                                                           | 15.0                                   | 66   | 78-82  | 100    | S7-3    |
| FK(xx)-24SV        |                                                                           | 24.0                                   | 42   | 74-83  | 100    | S7-3    |
| Dual Versions      |                                                                           |                                        |      |        |        |         |
| FK(xx)-1V8DV       | 1.8,3,3.5,9,12,15,24 (±10%)                                               | ±1.8                                   | ±278 | 70     | ±75    | S7-4    |
| FK(xx)-3V3DV       |                                                                           | ±3.3                                   | ±152 | 70     | ±75    | S7-4    |
| FK(xx)-05DV        |                                                                           | ±5.0                                   | ±100 | 70-78  | ±75    | S7-4    |
| FK(xx)-09DV        |                                                                           | ±9.0                                   | ±56  | 75-80  | ±75    | S7-4    |
| FK(xx)-12DV        |                                                                           | ±12.0                                  | ±42  | 78-84  | ±75    | S7-4    |
| FK(xx)-15DV        |                                                                           | ±15.0                                  | ±33  | 80-84  | ±75    | S7-4    |
| FK(xx)-24DV        |                                                                           | ±24.0                                  | ±21  | 80-84  | ±75    | S7-4    |
| Ordering Example:  | Substitute (xx) for 1V8, 3V3, 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                                        |      |        |        |         |
| Standard Versions: | FK...xV                                                                   | V = 3'000 Vdc input / output isolation |      |        |        |         |
| Option:            | FK...xU                                                                   | U = 4'000 Vdc input / output isolation |      |        |        |         |

# DC/DC CONVERTERS (UNREGULATED)

## 1 Watt

### FSS-Series, SMD

**Surface mounted, power-on-point (POP®) unregulated DC/DC modules**

- I/O isolation of 1'000Vdc
- Efficiency up to 78%
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 12.1 x 11.1 x 7.2 mm (single)**
- **Dimensions: 14.7 x 11.1 x 7.2 mm (dual)**



| Model             | U <sub>in</sub>                                                           | U <sub>out</sub> | I <sub>out</sub> | η typ. | Ripple | Pinning |
|-------------------|---------------------------------------------------------------------------|------------------|------------------|--------|--------|---------|
| Single Versions   | VDC                                                                       | VDC              | mA               | %      | mVpp   |         |
| FSS(xx)-1V8SS     | 1.8,3,3.5,9,12,15,24 (±10%)                                               | 1.8              | 555              | 70     | 100    | SMD     |
| FSS(xx)-3V3SS     |                                                                           | 3.3              | 303              | 75     | 100    | SMD     |
| FSS(xx)-05SS      |                                                                           | 5.0              | 200              | 70-78  | 100    | SMD     |
| FSS(xx)-09SS      |                                                                           | 9.0              | 111              | 70-78  | 100    | SMD     |
| FSS(xx)-12SS      |                                                                           | 12.0             | 84               | 78-82  | 100    | SMD     |
| FSS(xx)-15SS      |                                                                           | 15.0             | 66               | 80-84  | 100    | SMD     |
| FSS(xx)-24SS      |                                                                           | 24.0             | 42               | 74-85  | 100    | SMD     |
| Dual Versions     |                                                                           |                  |                  |        |        |         |
| FSS(xx)-1V8DS     | 1.8,3,3.5,9,12,15,24 (±10%)                                               | ±1.8             | ±278             | 70     | 100    | SMD     |
| FSS(xx)-3V3DS     |                                                                           | ±3.3             | ±152             | 70     | 100    | SMD     |
| FSS(xx)-05DS      |                                                                           | ±5.0             | ±100             | 70-78  | 100    | SMD     |
| FSS(xx)-09DS      |                                                                           | ±9.0             | ±56              | 75-80  | 100    | SMD     |
| FSS(xx)-12DS      |                                                                           | ±12.0            | ±42              | 78-84  | 100    | SMD     |
| FSS(xx)-15DS      |                                                                           | ±15.0            | ±33              | 80-84  | 100    | SMD     |
| FSS(xx)-24DS      |                                                                           | ±24.0            | ±21              | 80-84  | 100    | SMD     |
| Ordering Example: | Substitute (xx) for 1V8, 3V3, 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                  |                  |        |        |         |

## 2 Watt

### FI-Series, SIL-4

**Single inline, power-on-point (POP®) unregulated DC/DC modules**

- I/O isolation of 1'000Vdc
- Efficiency up to 80%
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Industry standard pinout
- Short circuit protection 1sec.
- **Dimensions: 11.5 x 7.6 x 10.2 mm (LxWxH)**



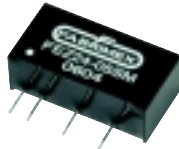
| Model             | U <sub>in</sub>                                                 | U <sub>out</sub> | I <sub>out</sub> | η typ. | Ripple | Pinning |
|-------------------|-----------------------------------------------------------------|------------------|------------------|--------|--------|---------|
| Single Versions   | VDC                                                             | VDC              | mA               | %      | mVpp   |         |
| FI(xx)-3V3S       | 5,9,12,15,24 (±10%)                                             | 3.3              | 606              | 70     | 200    | S4-2    |
| FI(xx)-05S        |                                                                 | 5.0              | 400              | 75     | 200    | S4-2    |
| FI(xx)-07S        |                                                                 | 7.0              | 285              | 72     | 200    | S4-2    |
| FI(xx)-09S        |                                                                 | 9.0              | 222              | 76     | 200    | S4-2    |
| FI(xx)-12S        |                                                                 | 12.0             | 168              | 78     | 200    | S4-2    |
| FI(xx)-15S        |                                                                 | 15.0             | 132              | 80     | 200    | S4-2    |
| FI(xx)-24S        |                                                                 | 24.0             | 83               | 80     | 200    | S4-2    |
| Ordering Example: | Substitute (xx) for 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                  |                  |        |        |         |

## 2 Watt

### FEZ-Series, SIL-7

**Single inline, power-on-point (POP®) unregulated DC/DC modules**

- I/O isolation of 1'000 or 2'000Vdc
- Efficiency up to 80%
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 19.7 x 7.1 x 10.2 mm (LxWxH)**



| Model              | U <sub>in</sub>                                                 | U <sub>out</sub> | I <sub>out</sub> | η typ. | Ripple | Pinning |
|--------------------|-----------------------------------------------------------------|------------------|------------------|--------|--------|---------|
| Single Versions    | VDC                                                             | VDC              | mA               | %      | mVpp   |         |
| FEZ(xx)-3V3SM      | 5,9,12,15,24 (±10%)                                             | 3.3              | 606              | 70     | 150    | S7-1    |
| FEZ(xx)-05SM       |                                                                 | 5.0              | 400              | 75     | 150    | S7-1    |
| FEZ(xx)-09SM       |                                                                 | 9.0              | 222              | 75     | 150    | S7-1    |
| FEZ(xx)-12SM       |                                                                 | 12.0             | 168              | 78     | 150    | S7-1    |
| FEZ(xx)-15SM       |                                                                 | 15.0             | 132              | 80     | 150    | S7-1    |
| FEZ(xx)-24SM       |                                                                 | 24.0             | 83               | 80     | 150    | S7-1    |
| Ordering Example:  | Substitute (xx) for 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                  |                  |        |        |         |
| Standard Versions: | FEZ...-M M = 1'000 Vdc input / output isolation                 |                  |                  |        |        |         |
| Option:            | FEZ...-H H = 2'000 Vdc input / output isolation                 |                  |                  |        |        |         |

## 2 Watt

### FD-Series, SIL-7

**Single inline, power-on-point (POP®) unregulated DC/DC modules**

- I/O isolation of 1'000 or 2'000Vdc
- Efficiency up to 80%
- Multiple input voltages
- No derating up to 85°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 19.7 x 7.1 x 10.2 mm (LxWxH)**



| Model              | U <sub>in</sub>                                                 | U <sub>out</sub> | I <sub>out</sub> | η typ. | Ripple | Pinning |
|--------------------|-----------------------------------------------------------------|------------------|------------------|--------|--------|---------|
| Dual Versions      | VDC                                                             | VDC              | mA               | %      | mVpp   |         |
| FD(xx)-3V3DM       | 5,9,12,15,24 (±10%)                                             | ±3.3             | ±303             | 70     | 150    | S7-5    |
| FD(xx)-05DM        |                                                                 | ±5.0             | ±200             | 70-75  | 150    | S7-5    |
| FD(xx)-09DM        |                                                                 | ±9.0             | ±111             | 75-81  | 150    | S7-5    |
| FD(xx)-12DM        |                                                                 | ±12.0            | ±84              | 78-83  | 150    | S7-5    |
| FD(xx)-15DM        |                                                                 | ±15.0            | ±66              | 80-84  | 150    | S7-5    |
| FD(xx)-24DM        |                                                                 | ±24.0            | ±42              | 80-85  | 150    | S7-5    |
| Ordering Example:  | Substitute (xx) for 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                  |                  |        |        |         |
| Standard Versions: | FD...-M M = 1'000 Vdc input / output isolation                  |                  |                  |        |        |         |
| Option:            | FD...-H H = 2'000 Vdc input / output isolation                  |                  |                  |        |        |         |

## 2 Watt

### FTS-Series, SMD

**Surface mounted, power-on-point (POP®) unregulated DC/DC modules**

- I/O isolation of 1'000Vdc
- Efficiency up to 78%
- Multiple input voltages
- No derating up to 71°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 12.8 x 11.8 x 8.9 mm (single)**
- **Dimensions: 15.2 x 11.8 x 8.9 mm (dual)**



| Model             | U <sub>in</sub>                                                 | U <sub>out</sub> | I <sub>out</sub> | η typ. | Ripple | Pinning |
|-------------------|-----------------------------------------------------------------|------------------|------------------|--------|--------|---------|
| Single Versions   | VDC                                                             | VDC              | mA               | %      | mVpp   |         |
| FTS(xx)-3V3SS     | 5,9,12,15,24 (±10%)                                             | 3.3              | 606              | 70     | 150    | SMD     |
| FTS(xx)-05SS      |                                                                 | 5.0              | 400              | 70     | 150    | SMD     |
| FTS(xx)-09SS      |                                                                 | 9.0              | 222              | 75     | 150    | SMD     |
| FTS(xx)-12SS      |                                                                 | 12.0             | 167              | 75     | 150    | SMD     |
| FTS(xx)-15SS      |                                                                 | 15.0             | 133              | 75     | 150    | SMD     |
| FTS(xx)-24SS      |                                                                 | 24.0             | 83               | 78     | 150    | SMD     |
| Dual Versions     |                                                                 |                  |                  |        |        |         |
| FTS(xx)-3V3DS     | 5,9,12,15,24 (±10%)                                             | ±3.3             | ±303             | 70     | 150    | SMD     |
| FTS(xx)-05DS      |                                                                 | ±5.0             | ±204             | 70     | 150    | SMD     |
| FTS(xx)-09DS      |                                                                 | ±9.0             | ±111             | 75     | 150    | SMD     |
| FTS(xx)-12DS      |                                                                 | ±12.0            | ±83              | 75     | 150    | SMD     |
| FTS(xx)-15DS      |                                                                 | ±15.0            | ±66              | 75     | 150    | SMD     |
| FTS(xx)-24DS      |                                                                 | ±24.0            | ±42              | 78     | 150    | SMD     |
| Ordering Example: | Substitute (xx) for 05, 09, 12, 15 or 24 Vdc ±10% input voltage |                  |                  |        |        |         |

# DC/DC CONVERTERS (REGULATED)

## 1 Watt

### FY-Series, SIL-7

#### Single inline, power-on-point (POP®) regulated DC/DC modules

- I/O isolation of 1'000Vdc
- Efficiency up to 68%
- +5% input voltage range
- No derating up to 71°C ambient temperature
- Short circuit protection 1sec.
- **Dimensions: 19.7 x 7.1 x 10.2 mm (LxWxH)**



| Model                                                                               | Uin                | Uout | Iout | η typ. | Ripple | Pinning |
|-------------------------------------------------------------------------------------|--------------------|------|------|--------|--------|---------|
| Single Versions                                                                     | VDC                | VDC  | mA   | %      | mVpp   |         |
| FY(xx)-05SM                                                                         | 5,9,12,15,24 (±5%) | 5    | 180  | 58-60  | 100    | S7-6    |
| FY(xx)-09SM                                                                         |                    | 9    | 111  | 56-62  | 100    | S7-6    |
| FY(xx)-12SM                                                                         |                    | 12   | 84   | 60-66  | 100    | S7-6    |
| FY(xx)-15SM                                                                         |                    | 15   | 66   | 60-66  | 100    | S7-6    |
| FY(xx)-24SM                                                                         |                    | 24   | 42   | 60-68  | 100    | S7-6    |
| Ordering Example:     Substitut (xx) for 05, 09, 12, 15 or 24 Vdc ±5% input voltage |                    |      |      |        |        |         |

## 1 Watt

### FSZ-Series, SMD

#### Surface mounted, power-on-point (POP®) regulated DC/DC modules

- I/O isolation of 1'000 or 2'000Vdc
- Short circuit protection 1sec.
- ±5% input voltage range
- No derating up to 71°C ambient temperature
- **Dimensions: 15.2 x 11.8 x 8.9 mm (LxWxH)**



| Model                                                                                                                                      | Uin                                                                          | Uout | Iout | η typ. | Ripple | Pinning |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------|------|--------|--------|---------|--|
| Single Versions                                                                                                                            | VDC                                                                          | VDC  | mA   | %      | mVpp   |         |  |
| FSZ(xx)-03SMS                                                                                                                              | 3,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28 (±5%) | 3    | 333  | >50    | 100    | SMD     |  |
| FSZ(xx)-04SMS                                                                                                                              |                                                                              | 4    | 250  | >50    | 100    | SMD     |  |
| FSZ(xx)-05SMS                                                                                                                              |                                                                              | 5    | 200  | >50    | 100    | SMD     |  |
| FSZ(xx)-06SMS                                                                                                                              |                                                                              | 6    | 166  | >50    | 100    | SMD     |  |
| FSZ(xx)-07SMS                                                                                                                              |                                                                              | 7    | 142  | >50    | 100    | SMD     |  |
| FSZ(xx)-08SMS                                                                                                                              |                                                                              | 8    | 125  | >50    | 100    | SMD     |  |
| FSZ(xx)-09SMS                                                                                                                              |                                                                              | 9    | 111  | >50    | 100    | SMD     |  |
| FSZ(xx)-10SMS                                                                                                                              |                                                                              | 10   | 100  | >50    | 100    | SMD     |  |
| FSZ(xx)-11SMS                                                                                                                              |                                                                              | 11   | 90   | >50    | 100    | SMD     |  |
| FSZ(xx)-12SMS                                                                                                                              |                                                                              | 12   | 83   | >50    | 100    | SMD     |  |
| FSZ(xx)-13SMS                                                                                                                              |                                                                              | 13   | 77   | >50    | 100    | SMD     |  |
| FSZ(xx)-14SMS                                                                                                                              |                                                                              | 14   | 71   | >50    | 100    | SMD     |  |
| Ordering Example: Substitute (xx) for 3V3, 05, 06, 07, 08, 09, 10, 11,.....,19, 20, 21, 22, 23, 24, 25, 26, 27 or 28 Vdc ±5% input voltage |                                                                              |      |      |        |        |         |  |
| Standard Versions: FSZ-.-,M M = 1'000 Vdc input / output isolation                                                                         |                                                                              |      |      |        |        |         |  |
| Option: FSZ-.-,H H = 2'000 Vdc input / output isolation                                                                                    |                                                                              |      |      |        |        |         |  |

## 1.5 Watt

### EC-Series, DIL-24

#### DC/DC converter with single or dual output

- I/O isolation of 500 or 3'000 VDC
- Pi-filter at input
- Momentary short circuit proof
- Linear regulation
- No derating up to 71°C
- Low output ripple and noise
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- **Dimensions: 32 x 20 x 10.2 mm**



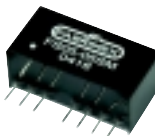
| Model                                                                                       | Uin         | Uout  | Iou | No load | η typ. | Ripple | Pinning |
|---------------------------------------------------------------------------------------------|-------------|-------|-----|---------|--------|--------|---------|
| Single Versions                                                                             | VDC         | VDC   | mA  | mA      | %      | mVpp   |         |
| EC05-0502SM                                                                                 | 4.5...5.5   | 5.0   | 300 | 110     | 50     | 50     | A1      |
| EC05-1202SM                                                                                 | 4.5...5.5   | 12.0  | 125 | 110     | 50     | 50     | A1      |
| EC05-1502SM                                                                                 | 4.5...5.5   | 15.0  | 100 | 110     | 50     | 50     | A1      |
| EC12-0502SM                                                                                 | 10.8...13.2 | 5.0   | 300 | 40      | 50     | 50     | A1      |
| EC12-1202SM                                                                                 | 10.8...13.2 | 12.0  | 125 | 40      | 50     | 50     | A1      |
| EC12-1502SM                                                                                 | 10.8...13.2 | 15.0  | 100 | 40      | 50     | 50     | A1      |
| EC24-0502SM                                                                                 | 21.6...26.4 | 5.0   | 300 | 20      | 50     | 50     | A1      |
| EC24-1202SM                                                                                 | 21.6...26.4 | 12.0  | 125 | 20      | 50     | 50     | A1      |
| EC24-1502SM                                                                                 | 21.6...26.4 | 15.0  | 100 | 20      | 50     | 50     | A1      |
| EC48-0502SM                                                                                 | 43.2...52.8 | 5.0   | 300 | 15      | 50     | 50     | A1      |
| EC48-1202SM                                                                                 | 43.2...52.8 | 12.0  | 125 | 15      | 50     | 50     | A1      |
| EC48-1502SM                                                                                 | 43.2...52.8 | 15.0  | 100 | 15      | 50     | 50     | A1      |
| Dual Versions                                                                               |             |       |     |         |        |        |         |
| EC05-1202DM                                                                                 | 4.5...5.5   | ±12.0 | ±60 | 110     | 50     | 50     | A2      |
| EC05-1502DM                                                                                 | 4.5...5.5   | ±15.0 | ±50 | 110     | 50     | 50     | A2      |
| EC12-1202DM                                                                                 | 10.8...13.2 | ±12.0 | ±60 | 40      | 50     | 50     | A2      |
| EC12-1502DM                                                                                 | 10.8...13.2 | ±15.0 | ±50 | 40      | 50     | 50     | A2      |
| EC24-1202DM                                                                                 | 21.6...26.4 | ±12.0 | ±60 | 20      | 50     | 50     | A2      |
| EC24-1502DM                                                                                 | 21.6...26.4 | ±15.0 | ±50 | 20      | 50     | 50     | A2      |
| EC48-1202DM                                                                                 | 43.2...52.8 | ±12.0 | ±60 | 15      | 50     | 50     | A2      |
| EC48-1502DM                                                                                 | 43.2...52.8 | ±15.0 | ±50 | 15      | 50     | 50     | A2      |
| Standard Version: EC...-02xM M= 500 Vdc I/O Isolation and metal case Pinning A1(s) / A2 (d) |             |       |     |         |        |        |         |
| Option: EC...-02xV V= 3'000 I/O Isolation and plastic case; Pinning A6(s) / A7 (d)          |             |       |     |         |        |        |         |
| EC...-02xM-S -S= SMD pinning (for 500 Vdc isolation only) Pinning AS1 (s) / AS2 (d)         |             |       |     |         |        |        |         |

## 2 Watt

### FS-Series, SIL-8

#### Single inline, power-on-point (POP®) regulated DC/DC modules

- I/O isolation of 1'000Vdc
- 2:1 wide input voltage range
- Efficiency up to 83%
- Remote on/off control
- No derating up to 80°C ambient temperature
- Low output ripple and noise
- Continuous short circuit protection
- **Dimensions: 21.8 x 9.2 x 11.1 mm (LxWxH)**



| Model                                                      | Uin      | Uout  | Iou  | No load | η typ. | Ripple | Pinning |
|------------------------------------------------------------|----------|-------|------|---------|--------|--------|---------|
| Single Versions                                            | VDC      | VDC   | mA   | mA      | %      | mVpp   |         |
| FS(xx)-3V3SM                                               | 4.5...72 | 3.3   | 500  |         | 68-73  | 50     | S8      |
| FS(xx)-05SM                                                | 4.5...72 | 5.0   | 400  |         | 73-78  | 50     | S8      |
| FS(xx)-09SM                                                | 4.5...72 | 9.0   | 222  |         | 74-78  | 50     | S8      |
| FS(xx)-12SM                                                | 4.5...72 | 12.0  | 166  |         | 75-78  | 50     | S8      |
| FS(xx)-15SM                                                | 4.5...72 | 15.0  | 134  |         | 75-83  | 50     | S8      |
| Dual Versions                                              |          |       |      |         |        |        |         |
| FS(xx)-3V3DM                                               | 4.5...72 | ±3.3  | ±250 |         | 68-73  | 50     | S9      |
| FS(xx)-05DM                                                | 4.5...72 | ±5.0  | ±200 |         | 73-78  | 50     | S9      |
| FS(xx)-09DM                                                | 4.5...72 | ±9.0  | ±111 |         | 74-81  | 50     | S9      |
| FS(xx)-12DM                                                | 4.5...72 | ±12.0 | ±83  |         | 75-83  | 50     | S9      |
| FS(xx)-15DM                                                | 4.5...72 | ±15.0 | ±67  |         | 75-83  | 50     | S9      |
| Ordering Example: Substitute (xx) for 05, 12, 24 or 48 Vdc |          |       |      |         |        |        |         |

# DC/DC CONVERTERS (REGULATED)

## 3 Watt

### ECU-Series, DIL-24

#### 4:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500, 1'500 or 3'000 VDC
- Continuous short circuit proof
- SMD pinning optional
- High efficiency
- No derating up to 71°C
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- **Dimensions: 32 x 20 x 10.2 mm**



| Model             | U <sub>in</sub> | U <sub>out</sub>                             | I <sub>out</sub> | No load | η typ. | Ripple                   | Pinning |
|-------------------|-----------------|----------------------------------------------|------------------|---------|--------|--------------------------|---------|
| Single Versions   | VDC             | VDC                                          | mA               | mA      | %      | mVpp                     |         |
| ECU24-0303SM      | 9...36          | 3.3                                          | 600              | 15      | 70     | 100                      | A1      |
| ECU24-0503SM      | 9...36          | 5.0                                          | 600              | 15      | 72     | 100                      | A1      |
| ECU24-1203SM      | 9...36          | 12.0                                         | 250              | 15      | 76     | 100                      | A1      |
| ECU24-1503SM      | 9...36          | 15.0                                         | 200              | 15      | 76     | 100                      | A1      |
| ECU48-0303SM      | 18...72         | 3.3                                          | 600              | 7.5     | 70     | 100                      | A1      |
| ECU48-0503SM      | 18...72         | 5.0                                          | 600              | 7.5     | 72     | 100                      | A1      |
| ECU48-1203SM      | 18...72         | 12.0                                         | 250              | 7.5     | 80     | 100                      | A1      |
| ECU48-1503SM      | 18...72         | 15.0                                         | 200              | 7.5     | 80     | 100                      | A1      |
| Dual Versions     |                 |                                              |                  |         |        |                          |         |
| ECU24-0503DM      | 9...36          | ±5.0                                         | ±300             | 25      | 70     | 100                      | A2      |
| ECU24-1203DM      | 9...36          | ±12.0                                        | ±125             | 25      | 72     | 120                      | A2      |
| ECU24-1503DM      | 9...36          | ±15.0                                        | ±100             | 25      | 72     | 150                      | A2      |
| ECU48-0503DM      | 18...72         | ±5.0                                         | ±300             | 12      | 71     | 100                      | A2      |
| ECU48-1203DM      | 18...72         | ±12.0                                        | ±125             | 12      | 72     | 120                      | A2      |
| ECU48-1503DM      | 18...72         | ±15.0                                        | ±100             | 12      | 72     | 150                      | A2      |
| Standard Version: | ECU...03xM      | M = 500 Vdc I/O isolation and metal case     |                  |         |        | Pinning A1(s) / A2 (d)   |         |
| Option:           | ECU...03xH      | H = 1'500 Vdc I/O isolation and metal case   |                  |         |        | Pinning A4 (s) / A5 (d)  |         |
|                   | ECU...03xV      | H = 3'000 Vdc I/O isolation and plastic case |                  |         |        | Pinning A4 (s) / A5 (d)  |         |
|                   | ECU...03xM-S    | -S = SMD pinning for 500 Vdc                 |                  |         |        | Pinning AS1(s) / AS2 (d) |         |
|                   | ECU...03xH-S    | -S = SMD pinning for 1'500 Vdc               |                  |         |        | Pinning AS4(s) / AS5 (d) |         |

## 3 Watt

### ECW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500, 1'500 or 3'000 VDC
- Continuous short circuit proof
- SMD pinning optional
- Remote ON/OFF control optional
- No derating up to 71°C
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- EN55022 Class B optional
- **Dimensions: 32 x 20 x 10.2 mm (Class A)**
- **Dimensions: 32 x 20 x 12.7 mm (Class B)**



| Model             | U <sub>in</sub> | U <sub>out</sub>                                                       | I <sub>out</sub> | No load | η typ. | Ripple                   | Pinning |
|-------------------|-----------------|------------------------------------------------------------------------|------------------|---------|--------|--------------------------|---------|
| Single Versions   | VDC             | VDC                                                                    | mA               | mA      | %      | mVpp                     |         |
| ECW05-0303SM      | 4.5...6.0       | 3.3                                                                    | 600              | 15      | 61     | 100                      | A1      |
| ECW05-0503SM      | 4.5...6.0       | 5.0                                                                    | 600              | 15      | 70     | 100                      | A1      |
| ECW05-1203SM      | 4.5...6.0       | 12.0                                                                   | 250              | 15      | 75     | 120                      | A1      |
| ECW05-1503SM      | 4.5...6.0       | 15.0                                                                   | 200              | 15      | 75     | 150                      | A1      |
| ECW12-0303SM      | 9...18          | 3.3                                                                    | 600              | 7.5     | 65     | 100                      | A1      |
| ECW12-0503SM      | 9...18          | 5.0                                                                    | 600              | 7.5     | 73     | 100                      | A1      |
| ECW12-1203SM      | 9...18          | 12.0                                                                   | 250              | 7.5     | 78     | 120                      | A1      |
| ECW12-1503SM      | 9...18          | 15.0                                                                   | 200              | 7.5     | 78     | 150                      | A1      |
| ECW24-0303SM      | 18...36         | 3.3                                                                    | 600              | 5       | 66     | 100                      | A1      |
| ECW24-0503SM      | 18...36         | 5.0                                                                    | 600              | 5       | 74     | 100                      | A1      |
| ECW24-1203SM      | 18...36         | 12.0                                                                   | 250              | 5       | 80     | 120                      | A1      |
| ECW24-1503SM      | 18...36         | 15.0                                                                   | 200              | 5       | 80     | 150                      | A1      |
| ECW48-0303SM      | 36...72         | 3.3                                                                    | 600              | 2       | 68     | 100                      | A1      |
| ECW48-0503SM      | 36...72         | 5.0                                                                    | 600              | 2       | 76     | 100                      | A1      |
| ECW48-1203SM      | 36...72         | 12.0                                                                   | 250              | 2       | 80     | 120                      | A1      |
| ECW48-1503SM      | 36...72         | 15.0                                                                   | 200              | 2       | 80     | 150                      | A1      |
| Dual Versions     |                 |                                                                        |                  |         |        |                          |         |
| ECW05-0503DM      | 4.5...6.0       | ±5.0                                                                   | ±300             | 25      | 70     | 100                      | A2      |
| ECW05-1203DM      | 4.5...6.0       | ±12.0                                                                  | ±125             | 25      | 75     | 120                      | A2      |
| ECW05-1503DM      | 4.5...6.0       | ±15.0                                                                  | ±100             | 25      | 75     | 150                      | A2      |
| ECW12-0503DM      | 9...18          | ±5.0                                                                   | ±300             | 12      | 73     | 100                      | A2      |
| ECW12-1203DM      | 9...18          | ±12.0                                                                  | ±125             | 12      | 78     | 120                      | A2      |
| ECW12-1503DM      | 9...18          | ±15.0                                                                  | ±100             | 12      | 78     | 150                      | A2      |
| ECW24-0503DM      | 18...36         | ±5.0                                                                   | ±300             | 7.5     | 74     | 100                      | A2      |
| ECW24-1203DM      | 18...36         | ±12.0                                                                  | ±125             | 7.5     | 80     | 120                      | A2      |
| ECW24-1503DM      | 18...36         | ±15.0                                                                  | ±100             | 7.5     | 80     | 150                      | A2      |
| ECW48-0503DM      | 36...72         | ±5.0                                                                   | ±300             | 3       | 76     | 100                      | A2      |
| ECW48-1203DM      | 36...72         | ±12.0                                                                  | ±125             | 3       | 78     | 120                      | A2      |
| ECW48-1503DM      | 36...72         | ±15.0                                                                  | ±100             | 3       | 78     | 150                      | A2      |
| Standard Version: | ECW...03xM      | M = 500 Vdc I/O isolation and metal case                               |                  |         |        | Pinning A1(s) / A2 (d)   |         |
| Option:           | ECW...03xH      | H = 1'500 Vdc I/O isolation and metal case                             |                  |         |        | Pinning A4 (s) / A5 (d)  |         |
|                   | ECW...03xV      | H = 3'000 Vdc I/O isolation and plastic case                           |                  |         |        | Pinning A4 (s) / A5 (d)  |         |
|                   | ECW...03xM-S    | -S = SMD pinning for 500 Vdc                                           |                  |         |        | Pinning AS1(s) / AS2 (d) |         |
|                   | ECW...03xH-S    | -S = SMD pinning for 1'500 Vdc                                         |                  |         |        | Pinning AS4(s) / AS5 (d) |         |
|                   | ECW...03xB      | B = EN55022 Class B                                                    |                  |         |        |                          |         |
|                   | ECW...03xBT     | BT = EN55022 Class B & remote on/off ctrl for 1'500 and 3'000 Vdc only |                  |         |        | see data sheet           |         |

# DC/DC CONVERTERS (REGULATED)

## 3 Watt

### UCW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- All models certified to UL and cUL 60950
- I/O isolation of 1500 or 3000 VDC
- SMD pinning optional
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- EN55022B optional
- **Dimensions: 32 x 20 x 10.2 mm (Class A)**
- **Dimensions: 32 x 20 x 12.7 mm (Class B)**



| Model             | U <sub>in</sub> | U <sub>out</sub>                             | I <sub>out</sub> | No load | η typ. | Ripple                  | Pinning |
|-------------------|-----------------|----------------------------------------------|------------------|---------|--------|-------------------------|---------|
| Single Versions   | VDC             | VDC                                          | mA               | mA      | %      | mVpp                    |         |
| UCW05-0303SH      | 4.5...6.0       | 3.3                                          | 600              | 15      | 61     | 100                     | A4      |
| UCW05-0503SH      | 4.5...6.0       | 5.0                                          | 600              | 15      | 70     | 100                     | A4      |
| UCW05-1203SH      | 4.5...6.0       | 12.0                                         | 250              | 15      | 75     | 120                     | A4      |
| UCW05-1503SH      | 4.5...6.0       | 15.0                                         | 200              | 15      | 75     | 150                     | A4      |
| UCW12-0303SH      | 9...18          | 3.3                                          | 600              | 7.5     | 65     | 100                     | A4      |
| UCW12-0503SH      | 9...18          | 5.0                                          | 600              | 7.5     | 73     | 100                     | A4      |
| UCW12-1203SH      | 9...18          | 12.0                                         | 250              | 7.5     | 78     | 120                     | A4      |
| UCW12-1503SH      | 9...18          | 15.0                                         | 200              | 7.5     | 78     | 150                     | A4      |
| UCW24-0303SH      | 18...36         | 3.3                                          | 600              | 5       | 66     | 100                     | A4      |
| UCW24-0503SH      | 18...36         | 5.0                                          | 600              | 5       | 74     | 100                     | A4      |
| UCW24-1203SH      | 18...36         | 12.0                                         | 250              | 5       | 80     | 120                     | A4      |
| UCW24-1503SH      | 18...36         | 15.0                                         | 200              | 5       | 80     | 150                     | A4      |
| UCW48-0303SH      | 36...72         | 3.3                                          | 600              | 2       | 68     | 100                     | A4      |
| UCW48-0503SH      | 36...72         | 5.0                                          | 600              | 2       | 76     | 100                     | A4      |
| UCW48-1203SH      | 36...72         | 12.0                                         | 250              | 2       | 80     | 120                     | A4      |
| UCW48-1503SH      | 36...72         | 15.0                                         | 200              | 2       | 80     | 150                     | A4      |
| Dual Versions     |                 |                                              |                  |         |        |                         |         |
| UCW05-0503DH      | 4.5...6.0       | ±5.0                                         | ±300             | 25      | 70     | 100                     | A5      |
| UCW05-1203DH      | 4.5...6.0       | ±12.0                                        | ±125             | 25      | 75     | 120                     | A5      |
| UCW05-1503DH      | 4.5...6.0       | ±15.0                                        | ±100             | 25      | 75     | 150                     | A5      |
| UCW12-0503DH      | 9...18          | ±5.0                                         | ±300             | 12      | 73     | 100                     | A5      |
| UCW12-1203DH      | 9...18          | ±12.0                                        | ±125             | 12      | 78     | 120                     | A5      |
| UCW12-1503DH      | 9...18          | ±15.0                                        | ±100             | 12      | 78     | 150                     | A5      |
| UCW24-0503DH      | 18...36         | ±5.0                                         | ±300             | 7.5     | 74     | 100                     | A5      |
| UCW24-1203DH      | 18...36         | ±12.0                                        | ±125             | 7.5     | 80     | 120                     | A5      |
| UCW24-1503DH      | 18...36         | ±15.0                                        | ±100             | 7.5     | 80     | 150                     | A5      |
| UCW48-0503DH      | 36...72         | ±5.0                                         | ±300             | 3       | 76     | 100                     | A5      |
| UCW48-1203DH      | 36...72         | ±12.0                                        | ±125             | 3       | 78     | 120                     | A5      |
| UCW48-1503DH      | 36...72         | ±15.0                                        | ±100             | 3       | 78     | 150                     | A5      |
| Standard Version: | UCW...03xH      | H = 1'500 Vdc I/O isolation and metal case   |                  |         |        | Pinning A4 (s) / A5 (d) |         |
| Option:           | UCW...03xV      | V = 3'000 Vdc I/O isolation and plastic case |                  |         |        | Pinning A4 (s) / A5 (d) |         |
|                   | UCW...03xB      | B = EMC EN55022 Class B                      |                  |         |        |                         |         |

## 5-6 Watt

### ECU-Series, DIL-24

#### 4:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 1'500 or 3'000 VDC
- SMD pinning optional
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- **Dimensions: 32 x 20 x 10.2 mm**



| Model             | U <sub>in</sub> | U <sub>out</sub>                             | I <sub>out</sub> | No load | η typ. | Ripple                    | Pinning |
|-------------------|-----------------|----------------------------------------------|------------------|---------|--------|---------------------------|---------|
| Single Versions   | VDC             | VDC                                          | mA               | mA      | %      | mVpp                      |         |
| ECU24-0305SH      | 9...36          | 3.3                                          | 1000             | 15      | 72     | 100                       | A4      |
| ECU24-0505SH      | 9...36          | 5.0                                          | 1000             | 15      | 78     | 100                       | A4      |
| ECU24-1206SH      | 9...36          | 12.0                                         | 470              | 15      | 80     | 120                       | A4      |
| ECU24-1506SH      | 9...36          | 15.0                                         | 400              | 15      | 80     | 150                       | A4      |
| ECU48-0305SH      | 18...72         | 3.3                                          | 1000             | 7.5     | 70     | 100                       | A4      |
| ECU48-0505SH      | 18...72         | 5.0                                          | 1000             | 7.5     | 78     | 100                       | A4      |
| ECU48-1206SH      | 18...72         | 12.0                                         | 470              | 7.5     | 79     | 120                       | A4      |
| ECU48-1506SH      | 18...72         | 15.0                                         | 400              | 7.5     | 80     | 150                       | A4      |
| Dual Versions     |                 |                                              |                  |         |        |                           |         |
| ECU24-0505DH      | 9...36          | ±5.0                                         | ±500             | 25      | 78     | 75                        | A5      |
| ECU24-1206DH      | 9...36          | ±12.0                                        | ±230             | 25      | 80     | 120                       | A5      |
| ECU24-1506DH      | 9...36          | ±15.0                                        | ±190             | 25      | 80     | 150                       | A5      |
| ECU48-0505DH      | 18...72         | ±5.0                                         | ±500             | 12      | 77     | 75                        | A5      |
| ECU48-1206DH      | 18...72         | ±12.0                                        | ±230             | 12      | 79     | 120                       | A5      |
| ECU48-1506DH      | 18...72         | ±15.0                                        | ±190             | 12      | 80     | 150                       | A5      |
| Standard Version: | ECU...06xH      | H = 1'500 Vdc I/O isolation and metal case   |                  |         |        | Pinning A4 (s) / A5 (d)   |         |
| Option:           | ECU...06xV      | V = 3'000 Vdc I/O isolation and plastic case |                  |         |        | Pinning A4 (s) / A5 (d)   |         |
|                   | ECU...06xH-S    | -S = SMD pinning for 1'500 Vdc only          |                  |         |        | Pinning AS4 (s) / AS5 (d) |         |

# DC/DC CONVERTERS (REGULATED)

## 5-6 Watt

### ECW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500, 1'500 or 3'000 VDC
- SMD pinning optional
- Continuous short circuit proof
- Remote ON/OFF control optional
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- EN55022 Class B optional
- **Dimensions: 32 x 20 x 10.2 mm (Class A)**
- **Dimensions: 32 x 20 x 12.7 mm (Class B)**



| Model             | Uin          | Uout                                                                       | Iout | No load | η typ. | Ripple                    | Pinning |
|-------------------|--------------|----------------------------------------------------------------------------|------|---------|--------|---------------------------|---------|
| Single Versions   | VDC          | VDC                                                                        | mA   | mA      | %      | mVpp                      |         |
| ECW12-0305SM      | 9...18       | 3.3                                                                        | 1000 | 7.5     | 70     | 100                       | A1      |
| ECW12-0505SM      | 9...18       | 5.0                                                                        | 1000 | 7.5     | 76     | 100                       | A1      |
| ECW12-1206SM      | 9...18       | 12.0                                                                       | 470  | 7.5     | 80     | 120                       | A1      |
| ECW12-1506SM      | 9...18       | 15.0                                                                       | 400  | 7.5     | 80     | 150                       | A1      |
| ECW24-0305SM      | 18...36      | 3.3                                                                        | 1000 | 5       | 70     | 100                       | A1      |
| ECW24-0505SM      | 18...36      | 5.0                                                                        | 1000 | 5       | 78     | 100                       | A1      |
| ECW24-1206SM      | 18...36      | 12.0                                                                       | 470  | 5       | 82     | 120                       | A1      |
| ECW24-1506SM      | 18...36      | 15.0                                                                       | 400  | 5       | 82     | 150                       | A1      |
| ECW48-0305SM      | 36...72      | 3.3                                                                        | 1000 | 2       | 70     | 100                       | A1      |
| ECW48-0505SM      | 36...72      | 5.0                                                                        | 1000 | 2       | 78     | 100                       | A1      |
| ECW48-1206SM      | 36...72      | 12.0                                                                       | 470  | 2       | 81     | 120                       | A1      |
| ECW48-1506SM      | 36...72      | 15.0                                                                       | 400  | 2       | 81     | 150                       | A1      |
| Dual Versions     |              |                                                                            |      |         |        |                           |         |
| ECW12-0505DM      | 9...18       | ±5.0                                                                       | ±500 | 12      | 76     | 100                       | A2      |
| ECW12-1206DM      | 9...18       | ±12.0                                                                      | ±230 | 12      | 80     | 120                       | A2      |
| ECW12-1506DM      | 9...18       | ±15.0                                                                      | ±190 | 12      | 80     | 150                       | A2      |
| ECW24-0505DM      | 18...36      | ±5.0                                                                       | ±500 | 7.5     | 78     | 100                       | A2      |
| ECW24-1206DM      | 18...36      | ±12.0                                                                      | ±230 | 7.5     | 81     | 120                       | A2      |
| ECW24-1506DM      | 18...36      | ±15.0                                                                      | ±190 | 7.5     | 81     | 150                       | A2      |
| ECW48-0505DM      | 36...72      | ±5.0                                                                       | ±500 | 3       | 78     | 100                       | A2      |
| ECW48-1206DM      | 36...72      | ±12.0                                                                      | ±230 | 3       | 81     | 120                       | A2      |
| ECW48-1506DM      | 36...72      | ±15.0                                                                      | ±190 | 3       | 81     | 150                       | A2      |
| Standard Version: | ECW...06xM   | M = 500 Vdc I/O isolation and metal case                                   |      |         |        | Pinning A1 (s) / A2 (d)   |         |
| Option:           | ECW...06xH   | H = 1'500 Vdc I/O isolation and metal case                                 |      |         |        | Pinning A4 (s) / A5 (d)   |         |
|                   | ECW...06xV   | H = 3'000 Vdc I/O isolation and plastic case                               |      |         |        | Pinning A4 (s) / A5 (d)   |         |
|                   | ECW...06xM-S | -S = SMD pinning for 500 Vdc                                               |      |         |        | Pinning AS1 (s) / AS2 (d) |         |
|                   | ECW...06xH-S | -S = SMD pinning for 1'500 Vdc                                             |      |         |        | Pinning AS4 (s) / AS5 (d) |         |
|                   | ECW...06xxB  | B = EMC EN55022 Class B                                                    |      |         |        |                           |         |
|                   | ECW...06xxBT | B = EMC EN55022 Class B & remote on/off ctrl, for 1'500 and 3'000 Vdc only |      |         |        | Pinning see data sheet    |         |

## 5-6 Watt

### UCW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- All models certified to UL and cUL 60950
- I/O isolation of 1500 or 3000 VDC
- SMD pinning optional
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded or non conductive plastic case
- EN55022B optional
- **Dimensions: 32 x 20 x 10.2 mm (Class A)**
- **Dimensions: 32 x 20 x 12.7 mm (Class B)**



| Model             | Uin         | Uout                                         | Iout | No load | η typ. | Ripple                  | Pinning |
|-------------------|-------------|----------------------------------------------|------|---------|--------|-------------------------|---------|
| Single Versions   | VDC         | VDC                                          | mA   | mA      | %      | mVpp                    |         |
| UCW12-0305SH      | 9...18      | 3.3                                          | 1000 | 7.5     | 68     | 100                     | A4      |
| UCW12-0505SH      | 9...18      | 5.0                                          | 1000 | 7.5     | 76     | 100                     | A4      |
| UCW12-1206SH      | 9...18      | 12.0                                         | 470  | 7.5     | 80     | 120                     | A4      |
| UCW12-1506SH      | 9...18      | 15.0                                         | 400  | 7.5     | 80     | 150                     | A4      |
| UCW24-0305SH      | 18...36     | 3.3                                          | 1000 | 5       | 70     | 100                     | A4      |
| UCW24-0505SH      | 18...36     | 5.0                                          | 1000 | 5       | 78     | 100                     | A4      |
| UCW24-1206SH      | 18...36     | 12.0                                         | 470  | 5       | 82     | 120                     | A4      |
| UCW24-1506SH      | 18...36     | 15.0                                         | 400  | 5       | 82     | 150                     | A4      |
| UCW48-0305SH      | 36...72     | 3.3                                          | 1000 | 2       | 70     | 100                     | A4      |
| UCW48-0505SH      | 36...72     | 5.0                                          | 1000 | 2       | 78     | 100                     | A4      |
| UCW48-1206SH      | 36...72     | 12.0                                         | 470  | 2       | 81     | 120                     | A4      |
| UCW48-1506SH      | 36...72     | 15.0                                         | 400  | 2       | 81     | 150                     | A4      |
| Dual Versions     |             |                                              |      |         |        |                         |         |
| UCW12-0505DH      | 9...18      | ±5.0                                         | ±500 | 12      | 76     | 100                     | A5      |
| UCW12-1206DH      | 9...18      | ±12.0                                        | ±230 | 12      | 80     | 120                     | A5      |
| UCW12-1506DH      | 9...18      | ±15.0                                        | ±190 | 12      | 80     | 150                     | A5      |
| UCW24-0505DH      | 18...36     | ±5.0                                         | ±500 | 7.5     | 78     | 100                     | A5      |
| UCW24-1206DH      | 18...36     | ±12.0                                        | ±230 | 7.5     | 81     | 120                     | A5      |
| UCW24-1506DH      | 18...36     | ±15.0                                        | ±190 | 7.5     | 81     | 150                     | A5      |
| UCW48-0505DH      | 36...72     | ±5.0                                         | ±500 | 3       | 78     | 100                     | A5      |
| UCW48-1206DH      | 36...72     | ±12.0                                        | ±230 | 3       | 81     | 120                     | A5      |
| UCW48-1506DH      | 36...72     | ±15.0                                        | ±190 | 3       | 81     | 150                     | A5      |
| Standard Version: | UCW...06xH  | H = 1'500 Vdc I/O isolation and metal case   |      |         |        | Pinning A4 (s) / A5 (d) |         |
| Option:           | UCW...06xV  | V = 3'000 Vdc I/O isolation and plastic case |      |         |        | Pinning A4 (s) / A5 (d) |         |
|                   | UCW...06xxB | B = EMC EN55022 Class B                      |      |         |        |                         |         |



# DC/DC CONVERTERS (REGULATED)

## 7.5 Watt

### ECW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 1'500 VDC
- High power density
- SMD pinning optional
- Continuous short circuit proof
- UL and cUL 60950 certified
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 32 x 20 x 10.2 mm**



| Model           | Uin          | Uout             | Iout | No load | η typ.                    | Ripple | Pinning |
|-----------------|--------------|------------------|------|---------|---------------------------|--------|---------|
| Single Versions | VDC          | VDC              | mA   | mA      | %                         | mVpp   |         |
| ECW12-0308SH    | 9...18       | 3.3              | 1500 | 25      | 74                        | 75     | A4      |
| ECW12-0508SH    | 9...18       | 5.0              | 1500 | 25      | 78                        | 75     | A4      |
| ECW12-1208SH    | 9...18       | 12.0             | 625  | 25      | 82                        | 100    | A4      |
| ECW12-1508SH    | 9...18       | 15.0             | 500  | 25      | 82                        | 100    | A4      |
| ECW24-0308SH    | 18...36      | 3.3              | 1500 | 20      | 76                        | 75     | A4      |
| ECW24-0508SH    | 18...36      | 5.0              | 1500 | 20      | 79                        | 75     | A4      |
| ECW24-1208SH    | 18...36      | 12.0             | 625  | 20      | 82                        | 100    | A4      |
| ECW24-1508SH    | 18...36      | 15.0             | 500  | 20      | 82                        | 100    | A4      |
| ECW48-0308SH    | 36...72      | 3.3              | 1500 | 10      | 76                        | 75     | A4      |
| ECW48-0508SH    | 36...72      | 5.0              | 1500 | 10      | 80                        | 75     | A4      |
| ECW48-1208SH    | 36...72      | 12.0             | 625  | 10      | 82                        | 100    | A4      |
| ECW48-1508SH    | 36...72      | 15.0             | 500  | 10      | 82                        | 100    | A4      |
| Dual Versions   |              |                  |      |         |                           |        |         |
| ECW12-0508DH    | 9...18       | ±5.0             | ±750 | 30      | 79                        | 75     | A5      |
| ECW12-1208DH    | 9...18       | ±12.0            | ±310 | 30      | 83                        | 100    | A5      |
| ECW12-1508DH    | 9...18       | ±15.0            | ±250 | 30      | 83                        | 100    | A5      |
| ECW24-0508DH    | 18...36      | ±5.0             | ±750 | 25      | 81                        | 75     | A5      |
| ECW24-1208DH    | 18...36      | ±12.0            | ±310 | 25      | 83                        | 100    | A5      |
| ECW24-1508DH    | 18...36      | ±15.0            | ±250 | 25      | 83                        | 100    | A5      |
| ECW48-0508DH    | 36...72      | ±5.0             | ±750 | 15      | 81                        | 75     | A5      |
| ECW48-1208DH    | 36...72      | ±12.0            | ±310 | 15      | 83                        | 100    | A5      |
| ECW48-1508DH    | 36...72      | ±15.0            | ±250 | 15      | 83                        | 100    | A5      |
| Option:         | ECW...08XH-S | -S = SMD pinning |      |         | Pinning AS4 (s) / AS5 (d) |        |         |

## 7.5 Watt

### ECW-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class B
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | Uin       | Uout              | Iout | No load | η typ.                 | Ripple | Pinning |
|-----------------|-----------|-------------------|------|---------|------------------------|--------|---------|
| Single Versions | VDC       | VDC               | mA   | mA      | %                      | mVpp   |         |
| ECW12-0307      | 9...18    | 3.3               | 1500 | 7.5     | 74                     | 100    | B1      |
| ECW12-0507      | 9...18    | 5.1               | 1500 | 7.5     | 77                     | 100    | B1      |
| ECW12-1207      | 9...18    | 12.0              | 625  | 7.5     | 80                     | 120    | B1      |
| ECW12-1507      | 9...18    | 15.0              | 500  | 7.5     | 80                     | 150    | B1      |
| ECW24-0307      | 18...36   | 3.3               | 1500 | 5       | 76                     | 100    | B1      |
| ECW24-0507      | 18...36   | 5.1               | 1500 | 5       | 78                     | 100    | B1      |
| ECW24-1207      | 18...36   | 12.0              | 625  | 5       | 82                     | 120    | B1      |
| ECW24-1507      | 18...36   | 15.0              | 500  | 5       | 82                     | 150    | B1      |
| ECW48-0307      | 36...72   | 3.3               | 1500 | 3       | 76                     | 100    | B1      |
| ECW48-0507      | 36...72   | 5.1               | 1500 | 2       | 78                     | 100    | B1      |
| ECW48-1207      | 36...72   | 12.0              | 625  | 2       | 81                     | 120    | B1      |
| ECW48-1507      | 36...72   | 15.0              | 500  | 2       | 81                     | 150    | B1      |
| Dual Versions   |           |                   |      |         |                        |        |         |
| ECW12-050507    | 9...18    | ±5.1              | ±750 | 7.5     | 76                     | 100    | B2      |
| ECW12-121207    | 9...18    | ±12.0             | ±310 | 12      | 80                     | 120    | B2      |
| ECW12-151507    | 9...18    | ±15.0             | ±250 | 12      | 80                     | 150    | B2      |
| ECW24-050507    | 18...36   | ±5.1              | ±750 | 7.5     | 78                     | 100    | B2      |
| ECW24-121207    | 18...36   | ±12.0             | ±310 | 7.5     | 81                     | 120    | B2      |
| ECW24-151507    | 18...36   | ±15.0             | ±250 | 7.5     | 81                     | 150    | B2      |
| ECW48-050507    | 36...72   | ±5.1              | ±750 | 3       | 78                     | 100    | B2      |
| ECW48-121207    | 36...72   | ±12.0             | ±310 | 3       | 81                     | 120    | B2      |
| ECW48-151507    | 36...72   | ±15.0             | ±250 | 3       | 81                     | 150    | B2      |
| Option:         | ECW...07T | T = remote on/off |      |         | Pinning see data sheet |        |         |

## 10 Watt

### ECU-Series, 2x1"

#### 4:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class A
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | Uin     | Uout  | Iout  | No load | η typ. | Ripple | Pinning |
|-----------------|---------|-------|-------|---------|--------|--------|---------|
| Single Versions | VDC     | VDC   | mA    | mA      | %      | mVpp   |         |
| ECU24-0310      | 9...36  | 3.3   | 2000  | 15      | 76     | 75     | B1      |
| ECU24-0510      | 9...36  | 5.1   | 2000  | 15      | 77     | 75     | B1      |
| ECU24-1210      | 9...36  | 12.0  | 830   | 15      | 80     | 75     | B1      |
| ECU24-1510      | 9...36  | 15.0  | 666   | 15      | 80     | 75     | B1      |
| ECU48-0310      | 18...72 | 3.3   | 2000  | 15      | 76     | 75     | B1      |
| ECU48-0510      | 18...72 | 5.1   | 2000  | 10      | 78     | 75     | B1      |
| ECU48-1210      | 18...72 | 12.0  | 830   | 10      | 80     | 75     | B1      |
| ECU48-1510      | 18...72 | 15.0  | 666   | 10      | 80     | 75     | B1      |
| Dual Versions   |         |       |       |         |        |        |         |
| ECU24-050510    | 9...36  | ±5.1  | ±1000 | 20      | 80     | 75     | B2      |
| ECU24-121210    | 9...36  | ±12.0 | ±415  | 20      | 80     | 75     | B2      |
| ECU24-151510    | 9...36  | ±15.0 | ±333  | 20      | 80     | 75     | B2      |
| ECU48-050510    | 18...72 | ±5.1  | ±1000 | 15      | 82     | 75     | B2      |
| ECU48-121210    | 18...72 | ±12.0 | ±415  | 15      | 82     | 75     | B2      |
| ECU48-151510    | 18...72 | ±15.0 | ±333  | 15      | 82     | 75     | B2      |

Upon request a version with 1'500 Vdc isolation voltage is available

# DC/DC CONVERTERS (REGULATED)

## 10 Watt

### ECW-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class A
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | Uin       | Uout  | Iout  | No load | η typ. | Ripple | Pinning |
|-----------------|-----------|-------|-------|---------|--------|--------|---------|
| Single Versions | VDC       | VDC   | mA    | mA      | %      | mVpp   |         |
| ECW05-0510      | 4.7...9   | 5.1   | 1600  | 15      | 75     | 100    | B1      |
| ECW05-1210      | 4.7...9   | 12.0  | 666   | 15      | 76     | 100    | B1      |
| ECW05-1510      | 4.7...9   | 15.0  | 533   | 15      | 76     | 100    | B1      |
| ECW12-0510      | 9...18    | 5.1   | 2000  | 30      | 76     | 100    | B1      |
| ECW12-1210      | 9...18    | 12.0  | 830   | 30      | 78     | 100    | B1      |
| ECW12-1510      | 9...18    | 15.0  | 666   | 30      | 78     | 100    | B1      |
| ECW24-0510      | 18...36   | 5.1   | 2000  | 20      | 78     | 100    | B1      |
| ECW24-1210      | 18...36   | 12.0  | 830   | 20      | 80     | 100    | B1      |
| ECW24-1510      | 18...36   | 15.0  | 666   | 20      | 80     | 100    | B1      |
| ECW48-0510      | 36...72   | 5.1   | 2000  | 10      | 80     | 100    | B1      |
| ECW48-1210      | 36...72   | 12.0  | 830   | 10      | 82     | 100    | B1      |
| ECW48-1510      | 36...72   | 15.0  | 666   | 10      | 82     | 100    | B1      |
| Dual Versions   |           |       |       |         |        |        |         |
| ECW05-050510    | 4.7...9.0 | ±5.1  | ±800  | 15      | 76     | 100    | B2      |
| ECW05-121210    | 4.7...9.0 | ±12.0 | ±333  | 15      | 76     | 100    | B2      |
| ECW05-151510    | 4.7...9.0 | ±15.0 | ±266  | 15      | 76     | 100    | B2      |
| ECW12-050510    | 9...18    | ±5.1  | ±1000 | 40      | 78     | 100    | B2      |
| ECW12-121210    | 9...18    | ±12.0 | ±415  | 40      | 78     | 100    | B2      |
| ECW12-151510    | 9...18    | ±15.0 | ±333  | 40      | 78     | 100    | B2      |
| ECW24-050510    | 18...36   | ±5.1  | ±1000 | 20      | 80     | 100    | B2      |
| ECW24-121210    | 18...36   | ±12.0 | ±415  | 20      | 80     | 100    | B2      |
| ECW24-151510    | 18...36   | ±15.0 | ±333  | 20      | 80     | 100    | B2      |
| ECW48-050510    | 36...72   | ±5.1  | ±1000 | 10      | 82     | 100    | B2      |
| ECW48-121210    | 36...72   | ±12.0 | ±415  | 10      | 82     | 100    | B2      |
| ECW48-151510    | 36...72   | ±15.0 | ±333  | 10      | 82     | 100    | B2      |

On request a version with 1'500 Vdc isolation voltage is available

## 10 Watt

### ECW-Series, DIL-24

#### 2:1 input voltage range DC/DC converter line with single or dual output

- Very high efficiency p to 89%
- I/O isolation of 1'500 VDC
- High power density
- No tantalum capacitors
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 32 x 20 x 10.2 mm**



| Model           | Uin           | Uout            | Iout | No load | η typ. | Ripple                    | Pinning |
|-----------------|---------------|-----------------|------|---------|--------|---------------------------|---------|
| Single Versions | VDC           | VDC             | mA   | mA      | %      | mVpp                      |         |
| ECW12-2V510ASH  | 9...18        | 2.5             | 3000 | 40      | 83     | 75                        | A9      |
| ECW12-3V310ASH  | 9...18        | 3.3             | 3000 | 40      | 85     | 75                        | A9      |
| ECW12-0510ASH   | 9...18        | 5.0             | 2000 | 40      | 87     | 75                        | A9      |
| ECW12-1210ASH   | 9...18        | 12.0            | 835  | 40      | 88     | 75                        | A9      |
| ECW12-1510ASH   | 9...18        | 15.0            | 666  | 40      | 88     | 75                        | A9      |
| ECW24-2V510ASH  | 18...36       | 2.5             | 3000 | 30      | 85     | 75                        | A9      |
| ECW24-3V310ASH  | 18...36       | 3.3             | 3000 | 30      | 86     | 75                        | A9      |
| ECW24-0510ASH   | 18...36       | 5.0             | 2000 | 30      | 88     | 75                        | A9      |
| ECW24-1210ASH   | 18...36       | 12.0            | 835  | 30      | 89     | 75                        | A9      |
| ECW24-1510ASH   | 18...36       | 15.0            | 666  | 30      | 89     | 75                        | A9      |
| ECW48-2V510ASH  | 36...72       | 2.5             | 3000 | 15      | 85     | 75                        | A9      |
| ECW48-3V310ASH  | 36...72       | 3.3             | 3000 | 15      | 86     | 75                        | A9      |
| ECW48-0510ASH   | 36...72       | 5.0             | 2000 | 15      | 87     | 75                        | A9      |
| ECW48-1210ASH   | 36...72       | 12.0            | 835  | 15      | 89     | 75                        | A9      |
| ECW48-1510ASH   | 36...72       | 15.0            | 666  | 15      | 88     | 75                        | A9      |
| Dual Versions   |               |                 |      |         |        |                           |         |
| ECW12-1210ADH   | 9...18        | ±12.0           | ±416 | 20      | 87     | 75                        | A10     |
| ECW12-1510ADH   | 9...18        | ±15.0           | ±333 | 20      | 86     | 75                        | A10     |
| ECW24-1210ADH   | 18...36       | ±12.0           | ±416 | 20      | 88     | 75                        | A10     |
| ECW24-1510ADH   | 18...36       | ±15.0           | ±333 | 20      | 87     | 75                        | A10     |
| ECW48-1210ADH   | 36...72       | ±12.0           | ±416 | 10      | 88     | 75                        | A10     |
| ECW48-1510ADH   | 36...72       | ±15.0           | ±333 | 10      | 87     | 75                        | A10     |
| Option:         | ECW.-.....H-S | -S= SMD Pinning |      |         |        | Pinning AS6 (s) / AS7 (d) |         |

# DC/DC CONVERTERS (REGULATED)

## 10 Watt

### UCW-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- All models certified to UL and cUL 60950
- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class A
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



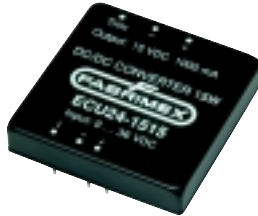
| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %      | mVpp   |         |
| UCW12-0510      | 9...18          | 5.1              | 2000             | 30      | 76     | 100    | B1      |
| UCW12-1210      | 9...18          | 12.0             | 830              | 30      | 78     | 100    | B1      |
| UCW12-1510      | 9...18          | 15.0             | 666              | 30      | 78     | 100    | B1      |
| UCW24-0510      | 18...36         | 5.1              | 2000             | 20      | 78     | 100    | B1      |
| UCW24-1210      | 18...36         | 12.0             | 830              | 20      | 80     | 100    | B1      |
| UCW24-1510      | 18...36         | 15.0             | 666              | 20      | 80     | 100    | B1      |
| UCW48-0510      | 36...72         | 5.1              | 2000             | 10      | 80     | 100    | B1      |
| UCW48-1210      | 36...72         | 12.0             | 830              | 10      | 82     | 100    | B1      |
| UCW48-1510      | 36...72         | 15.0             | 666              | 10      | 82     | 100    | B1      |
| Dual Versions   |                 |                  |                  |         |        |        |         |
| UCW12-050510    | 9...18          | ±5.1             | ±1000            | 40      | 78     | 100    | B2      |
| UCW12-121210    | 9...18          | ±12.0            | ±415             | 40      | 78     | 100    | B2      |
| UCW12-151510    | 9...18          | ±15.0            | ±333             | 40      | 78     | 100    | B2      |
| UCW24-050510    | 18...36         | ±5.1             | ±1000            | 20      | 80     | 100    | B2      |
| UCW24-121210    | 18...36         | ±12.0            | ±415             | 20      | 80     | 100    | B2      |
| UCW24-151510    | 18...36         | ±15.0            | ±333             | 20      | 80     | 100    | B2      |
| UCW48-050510    | 36...72         | ±5.1             | ±1000            | 10      | 82     | 100    | B2      |
| UCW48-121210    | 36...72         | ±12.0            | ±415             | 10      | 82     | 100    | B2      |
| UCW48-151510    | 36...72         | ±15.0            | ±333             | 10      | 82     | 100    | B2      |

## 15 Watt

### ECU-Series, 2x2"

#### 4:1 input voltage range DC/DC converter line with up to 3 output voltages

- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- Remote On/Off control
- Ext. output voltage adjustment ±10%
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %      | mVpp   |         |
| ECU24-0315      | 9...36          | 3.3              | 3000             | 15      | 76     | 75     | C5      |
| ECU24-0515      | 9...36          | 5.1              | 3000             | 15      | 77     | 75     | C5      |
| ECU24-1215      | 9...36          | 12.0             | 1250             | 15      | 80     | 75     | C5      |
| ECU24-1515      | 9...36          | 15.0             | 1000             | 15      | 80     | 75     | C5      |
| ECU48-0315      | 18...72         | 3.3              | 3000             | 10      | 76     | 75     | C5      |
| ECU48-0515      | 18...72         | 5.1              | 3000             | 10      | 77     | 75     | C5      |
| ECU48-1215      | 18...72         | 12.0             | 1250             | 10      | 80     | 75     | C5      |
| ECU48-1515      | 18...72         | 15.0             | 1000             | 10      | 80     | 75     | C5      |
| Dual Versions   |                 |                  |                  |         |        |        |         |
| ECU24-050515    | 9...36          | ±5.1             | ±1500            | 20      | 77     | 75     | C6      |
| ECU24-121215    | 9...36          | ±12.0            | ±625             | 20      | 80     | 75     | C6      |
| ECU24-151515    | 9...36          | ±15.0            | ±500             | 20      | 80     | 75     | C6      |
| ECU48-050515    | 18...72         | ±5.1             | ±1500            | 15      | 79     | 75     | C6      |
| ECU48-121215    | 18...72         | ±12.0            | ±625             | 15      | 82     | 75     | C6      |
| ECU48-151515    | 18...72         | ±15.0            | ±500             | 15      | 82     | 75     | C6      |
| Triple Versions |                 |                  |                  |         |        |        |         |
| ECU24-512T15    | 9...36          | 5.1/±12.0        | 1500/±310        | 20      | 80     | 75     | C7      |
| ECU24-515T15    | 9...36          | 5.1/±15.0        | 1500/±250        | 20      | 80     | 75     | C7      |
| ECU48-512T15    | 18...72         | 5.1/±12.0        | 1500/±310        | 15      | 82     | 75     | C7      |
| ECU48-515T15    | 18...72         | 5.1/±15.0        | 1500/±250        | 15      | 82     | 75     | C7      |

## 15 Watt

### ECW 'B'-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- Option: remote ON/OFF control
- Option: ext. output voltage adjustment
- No derating up to 71°C
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- EMC according to EN55022 Class A
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | U <sub>in</sub>            | U <sub>out</sub>                                                                        | I <sub>out</sub> | No load | η typ. | Ripple                                           | Pinning |
|-----------------|----------------------------|-----------------------------------------------------------------------------------------|------------------|---------|--------|--------------------------------------------------|---------|
| Single Versions | VDC                        | VDC                                                                                     | mA               | mA      | %      | mVpp                                             |         |
| ECW12-0315B     | 9...18                     | 3.3                                                                                     | 3000             | 20      | 76     | 100                                              | B1      |
| ECW12-0515B     | 9...18                     | 5.1                                                                                     | 3000             | 20      | 77     | 100                                              | B1      |
| ECW12-1215B     | 9...18                     | 12.0                                                                                    | 1250             | 20      | 80     | 100                                              | B1      |
| ECW12-1515B     | 9...18                     | 15.0                                                                                    | 1000             | 20      | 80     | 100                                              | B1      |
| ECW24-0315B     | 18...36                    | 3.3                                                                                     | 3000             | 20      | 76     | 100                                              | B1      |
| ECW24-0515B     | 18...36                    | 5.1                                                                                     | 3000             | 20      | 78     | 100                                              | B1      |
| ECW24-1215B     | 18...36                    | 12.0                                                                                    | 1250             | 20      | 80     | 100                                              | B1      |
| ECW24-1515B     | 18...36                    | 15.0                                                                                    | 1000             | 20      | 80     | 100                                              | B1      |
| ECW48-0315B     | 36...72                    | 3.3                                                                                     | 3000             | 10      | 76     | 100                                              | B1      |
| ECW48-0515B     | 36...72                    | 5.1                                                                                     | 3000             | 10      | 80     | 100                                              | B1      |
| ECW48-1215B     | 36...72                    | 12.0                                                                                    | 1250             | 10      | 82     | 100                                              | B1      |
| ECW48-1515B     | 36...72                    | 15.0                                                                                    | 1000             | 10      | 82     | 100                                              | B1      |
| Dual Versions   |                            |                                                                                         |                  |         |        |                                                  |         |
| ECW12-050515B   | 9...18                     | ±5.1                                                                                    | ±1500            | 30      | 80     | 100                                              | B2      |
| ECW12-121215B   | 9...18                     | ±12.0                                                                                   | ±625             | 30      | 80     | 100                                              | B2      |
| ECW12-151515B   | 9...18                     | ±15.0                                                                                   | ±500             | 30      | 80     | 100                                              | B2      |
| ECW24-050515B   | 18...36                    | ±5.1                                                                                    | ±1500            | 30      | 80     | 100                                              | B2      |
| ECW24-121215B   | 18...36                    | ±12.0                                                                                   | ±625             | 30      | 80     | 100                                              | B2      |
| ECW24-151515B   | 18...36                    | ±15.0                                                                                   | ±500             | 30      | 80     | 100                                              | B2      |
| ECW48-050515B   | 36...72                    | ±5.1                                                                                    | ±1500            | 15      | 82     | 100                                              | B2      |
| ECW48-121215B   | 36...72                    | ±12.0                                                                                   | ±625             | 15      | 82     | 100                                              | B2      |
| ECW48-151515B   | 36...72                    | ±15.0                                                                                   | ±500             | 15      | 82     | 100                                              | B2      |
| Option:         | ECW...-15BT<br>ECW...-15BA | T = remote on/off<br>A = ext. output voltage adjustment ±10%,<br>only for single output |                  |         |        | Pinning see data sheet<br>Pinning see data sheet |         |

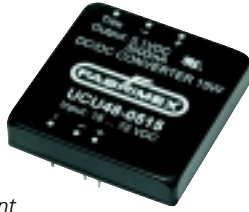
# DC/DC CONVERTERS (REGULATED)

## 15 Watt

### UCU-Series, 2x2"

#### 4:1 input voltage range DC/DC converter line with up to 3 output voltages

- All models certified to UL and cUL 60950
- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- Remote On/Off control
- Ext. output voltage adjustment  $\pm 10\%$
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



## 15 Watt

### UCW 'B'-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- All models certified to UL and cUL 60950
- I/O isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- Option: remote ON/OFF control
- Option: ext. output voltage adjustment
- No derating up to 71°C
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- EMC according to EN55022 Class A
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



## 15 Watt

### ECW-Series, 2x2"

#### 2:1 input voltage range DC/DC converter line with single or dual output

- Input to output isolation of 500 VDC
- Continuous short circuit proof
- High efficiency
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class B
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %      | mVpp   |         |
| UCU24-0315      | 9...36          | 3.3              | 3000             | 15      | 76     | 75     | C5      |
| UCU24-0515      | 9...36          | 5.1              | 3000             | 15      | 77     | 75     | C5      |
| UCU24-1215      | 9...36          | 12.0             | 1250             | 15      | 80     | 75     | C5      |
| UCU24-1515      | 9...36          | 15.0             | 1000             | 15      | 80     | 75     | C5      |
| UCU48-0315      | 18...72         | 3.3              | 3000             | 10      | 76     | 75     | C5      |
| UCU48-0515      | 18...72         | 5.1              | 3000             | 10      | 77     | 75     | C5      |
| UCU48-1215      | 18...72         | 12.0             | 1250             | 10      | 80     | 75     | C5      |
| UCU48-1515      | 18...72         | 15.0             | 1000             | 10      | 80     | 75     | C5      |
| Dual Versions   |                 |                  |                  |         |        |        |         |
| UCU24-050515    | 9...36          | ±5.1             | ±1500            | 20      | 77     | 75     | C6      |
| UCU24-121215    | 9...36          | ±12.0            | ±625             | 20      | 80     | 75     | C6      |
| UCU24-151515    | 9...36          | ±15.0            | ±500             | 20      | 80     | 75     | C6      |
| UCU48-050515    | 18...72         | ±5.1             | ±1500            | 15      | 79     | 75     | C6      |
| UCU48-121215    | 18...72         | ±12.0            | ±625             | 15      | 82     | 75     | C6      |
| UCU48-151515    | 18...72         | ±15.0            | ±500             | 15      | 82     | 75     | C6      |
| Triple Versions |                 |                  |                  |         |        |        |         |
| UCU24-512T15    | 9...36          | 5.1/±12.0        | 1500/±310        | 20      | 80     | 75     | C7      |
| UCU24-515T15    | 9...36          | 5.1/±15.0        | 1500/±250        | 20      | 80     | 75     | C7      |
| UCU48-512T15    | 18...72         | 5.1/±12.0        | 1500/±310        | 15      | 82     | 75     | C7      |
| UCU48-515T15    | 18...72         | 5.1/±15.0        | 1500/±250        | 15      | 82     | 75     | C7      |

| Model             | U <sub>in</sub> | U <sub>out</sub>                                                       | I <sub>out</sub> | No load | η typ. | Ripple                 | Pinning |
|-------------------|-----------------|------------------------------------------------------------------------|------------------|---------|--------|------------------------|---------|
| Single Versions   | VDC             | VDC                                                                    | mA               | mA      | %      | mVpp                   |         |
| UCW12-0315B(1)(2) | 9...18          | 3.3                                                                    | 3000             | 20      | 76     | 100                    | B1      |
| UCW12-0515B(1)(2) | 9...18          | 5.1                                                                    | 3000             | 20      | 77     | 100                    | B1      |
| UCW12-1215B(1)(2) | 9...18          | 12.0                                                                   | 1250             | 20      | 80     | 100                    | B1      |
| UCW12-1515B(1)(2) | 9...18          | 15.0                                                                   | 1000             | 20      | 80     | 100                    | B1      |
| UCW24-0315B(1)(2) | 18...36         | 3.3                                                                    | 3000             | 20      | 76     | 100                    | B1      |
| UCW24-0515B(1)(2) | 18...36         | 5.1                                                                    | 3000             | 20      | 78     | 100                    | B1      |
| UCW24-1215B(1)(2) | 18...36         | 12.0                                                                   | 1250             | 20      | 80     | 100                    | B1      |
| UCW24-1515B(1)(2) | 18...36         | 15.0                                                                   | 1000             | 20      | 80     | 100                    | B1      |
| UCW48-0315B(1)(2) | 36...72         | 3.3                                                                    | 3000             | 10      | 76     | 100                    | B1      |
| UCW48-0515B(1)(2) | 36...72         | 5.1                                                                    | 3000             | 10      | 80     | 100                    | B1      |
| UCW48-1215B(1)(2) | 36...72         | 12.0                                                                   | 1250             | 10      | 82     | 100                    | B1      |
| UCW48-1515B(1)(2) | 36...72         | 15.0                                                                   | 1000             | 10      | 82     | 100                    | B1      |
| Dual Versions     |                 |                                                                        |                  |         |        |                        |         |
| UCW12-050515B(1)  | 9...18          | ±5.1                                                                   | ±1500            | 30      | 80     | 100                    | B2      |
| UCW12-121215B(1)  | 9...18          | ±12.0                                                                  | ±625             | 30      | 80     | 100                    | B2      |
| UCW12-151515B(1)  | 9...18          | ±15.0                                                                  | ±500             | 30      | 80     | 100                    | B2      |
| UCW24-050515B(1)  | 18...36         | ±5.1                                                                   | ±1500            | 30      | 80     | 100                    | B2      |
| UCW24-121215B(1)  | 18...36         | ±12.0                                                                  | ±625             | 30      | 80     | 100                    | B2      |
| UCW24-151515B(1)  | 18...36         | ±15.0                                                                  | ±500             | 30      | 80     | 100                    | B2      |
| UCW48-050515B(1)  | 36...72         | ±5.1                                                                   | ±1500            | 15      | 82     | 100                    | B2      |
| UCW48-121215B(1)  | 36...72         | ±12.0                                                                  | ±625             | 15      | 82     | 100                    | B2      |
| UCW48-151515B(1)  | 36...72         | ±15.0                                                                  | ±500             | 15      | 82     | 100                    | B2      |
| Option:           | UCW...15BT      | T = remote on/off                                                      |                  |         |        | Pinning see data sheet |         |
|                   | UCW...15BA      | A = ext. output voltage adjustment $\pm 10\%$ , only for single output |                  |         |        | Pinning see data sheet |         |

| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %      | mVpp   |         |
| ECW12-0315      | 9...18          | 3.3              | 3000             | 30      | 70     | 75     | C1      |
| ECW12-0515      | 9...18          | 5.1              | 3000             | 30      | 75     | 75     | C1      |
| ECW12-1215      | 9...18          | 12.0             | 1250             | 30      | 78     | 75     | C1      |
| ECW12-1515      | 9...18          | 15.0             | 1000             | 30      | 78     | 75     | C1      |
| ECW24-0315      | 18...36         | 3.3              | 3000             | 15      | 74     | 75     | C1      |
| ECW24-0515      | 18...36         | 5.1              | 3000             | 15      | 78     | 75     | C1      |
| ECW24-1215      | 18...36         | 12.0             | 1250             | 20      | 81     | 75     | C1      |
| ECW24-1515      | 18...36         | 15.0             | 1000             | 20      | 81     | 75     | C1      |
| ECW48-0315      | 36...72         | 3.3              | 3000             | 20      | 76     | 75     | C1      |
| ECW48-0515      | 36...72         | 5.1              | 3000             | 10      | 80     | 75     | C1      |
| ECW48-1215      | 36...72         | 12.0             | 1250             | 15      | 82     | 75     | C1      |
| ECW48-1515      | 36...72         | 15.0             | 1000             | 15      | 82     | 75     | C1      |
| Dual Versions   |                 |                  |                  |         |        |        |         |
| ECW12-050515    | 9...18          | ±5.1             | ±1500            | 35      | 77     | 75     | C2      |
| ECW12-121215    | 9...18          | ±12.0            | ±625             | 35      | 77     | 75     | C2      |
| ECW12-151515    | 9...18          | ±15.0            | ±500             | 35      | 77     | 75     | C2      |
| ECW24-050515    | 18...36         | ±5.1             | ±1500            | 25      | 80     | 75     | C2      |
| ECW24-121215    | 18...36         | ±12.0            | ±625             | 25      | 80     | 75     | C2      |
| ECW24-151515    | 18...36         | ±15.0            | ±500             | 25      | 80     | 75     | C2      |
| ECW48-050515    | 36...72         | ±5.1             | ±1500            | 20      | 81     | 75     | C2      |
| ECW48-121215    | 36...72         | ±12.0            | ±625             | 20      | 81     | 75     | C2      |
| ECW48-151515    | 36...72         | ±15.0            | ±500             | 20      | 81     | 75     | C2      |

# DC/DC CONVERTERS (REGULATED)

## 15 Watt

### OCW-Series, 1x1" Open Frame

#### 2:1 input voltage range open frame DC/DC converter line

- I/O isolation of 2'250 VDC
- Continuous short circuit proof
- High efficiency up to 89%
- Over temperature protection
- Remote on/off control
- Ext. output voltage adjustment  $\pm 10\%$
- Through hole or SMD pinning
- Low output ripple and noise
- Pi-filter at input
- **Dimensions: 27.9 x 24.4 x 9.1 mm**



| Model             | U <sub>in</sub> | U <sub>out</sub>                 | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-------------------|-----------------|----------------------------------|------------------|---------|-------------|--------|---------|
| Single Versions   | VDC             | VDC                              | mA               | mA      | %           | mVpp   |         |
| OCW24-0315SB      | 18...36         | 3.3                              | 4000             | 30      | 84          | 75     | SB1     |
| OCW24-0515SB      | 18...36         | 5.0                              | 3000             | 30      | 85          | 75     | SB1     |
| OCW24-1215SB      | 18...36         | 12.0                             | 1250             | 40      | 87          | 75     | SB1     |
| OCW24-1515SB      | 18...36         | 15.0                             | 1000             | 40      | 87          | 75     | SB1     |
| OCW48-0315SB      | 36...72         | 3.3                              | 4000             | 30      | 86          | 75     | SB1     |
| OCW48-0515SB      | 36...72         | 5.0                              | 3000             | 30      | 87          | 75     | SB1     |
| OCW48-1215SB      | 36...72         | 12.0                             | 1250             | 40      | 89          | 75     | SB1     |
| OCW48-1515SB      | 36...72         | 15.0                             | 1000             | 40      | 89          | 75     | SB1     |
| Standard Version: | OCW-.....SB     | Through hole pinning             |                  |         | Pinning SB1 |        |         |
| Optional:         | OCW-.....SBN    | N = negative remote on/off logic |                  |         | Pinning SB1 |        |         |
|                   | OCW-.....SB-S   | -S = SMD pinning                 |                  |         | Pinning SBS |        |         |

## 11-15 Watt

### OCW-Series, 2x1" Open Frame

#### 2:1 input voltage range open frame DC/DC converter line

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency up to 87%
- Over temperature protection
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- Low output ripple and noise
- Pi-filter at input
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %           | mVpp   |         |
| OCW24-1V815     | 18...36         | 1.8              | 6000             | 30      | 83          | 75     | B4      |
| OCW24-2V515     | 18...36         | 2.5              | 6000             | 30      | 85          | 75     | B4      |
| OCW24-3V315     | 18...36         | 3.3              | 4500             | 30      | 86          | 75     | B4      |
| OCW24-0515      | 18...36         | 5.0              | 3000             | 40      | 87          | 75     | B4      |
| OCW48-1V815     | 36...72         | 1.8              | 6000             | 30      | 83          | 75     | B4      |
| OCW48-2V515     | 36...72         | 2.5              | 6000             | 30      | 86          | 75     | B4      |
| OCW48-3V315     | 36...72         | 3.3              | 4500             | 30      | 87          | 75     | B4      |
| OCW48-0515      | 36...72         | 5.0              | 3000             | 40      | 87          | 75     | B4      |

## 20 Watt

### ECU-Series, 2x1.6"

#### 4:1 input voltage range DC/DC converter line

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- Industry standard 2x2" pinning (size 2x1.6")
- No derating up to 71°C
- Low output ripple and noise
- EMC according to EN55022 Class A
- All models certified to UL and cUL 60950
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 40.6 x 11.4 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %           | mVpp   |         |
| ECU24-3V320     | 9...36          | 3.3              | 4000             | 15      | 78          | 75     | BC1     |
| ECU24-0520      | 9...36          | 5.1              | 4000             | 15      | 81          | 75     | BC1     |
| ECU24-1220      | 9...36          | 12.0             | 1670             | 15      | 83          | 75     | BC1     |
| ECU24-1520      | 9...36          | 15.0             | 1330             | 15      | 83          | 75     | BC1     |
| ECU48-3V320     | 18...72         | 3.3              | 4000             | 10      | 78          | 75     | BC1     |
| ECU48-0520      | 18...72         | 5.1              | 4000             | 10      | 82          | 75     | BC1     |
| ECU48-1220      | 18...72         | 12.0             | 1670             | 10      | 84          | 75     | BC1     |
| ECU48-1520      | 18...72         | 15.0             | 1330             | 10      | 84          | 75     | BC1     |
| Dual Versions   |                 |                  |                  |         |             |        |         |
| ECU24-050520    | 9...36          | $\pm 5.1$        | $\pm 2000$       | 20      | 83          | 75     | BC2     |
| ECU24-121220    | 9...36          | $\pm 12.0$       | $\pm 833$        | 20      | 83          | 75     | BC2     |
| ECU24-151520    | 9...36          | $\pm 15.0$       | $\pm 666$        | 20      | 83          | 75     | BC2     |
| ECU48-050520    | 18...72         | $\pm 5.1$        | $\pm 2000$       | 15      | 84          | 75     | BC2     |
| ECU48-121220    | 18...72         | $\pm 12.0$       | $\pm 833$        | 15      | 84          | 75     | BC2     |
| ECU48-151520    | 18...72         | $\pm 15.0$       | $\pm 666$        | 15      | 84          | 75     | BC2     |

## 20 Watt

### ECW-Series, 2x1"

#### 2:1 input voltage range DC/DC converter line with single output

- I/O isolation of 500 VDC
- Continuous short circuit proof
- Efficiency up to 86%
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- Low output ripple and noise
- Metal case with non conductive base plate, six sides shielded
- Operating ambient temperature -25 to +71°C
- **Dimensions: 50.8 x 25.4 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %           | mVpp   |         |
| ECW24-2V520     | 18...36         | 2.5              | 5000             | 35      | 81          | 75     | B3      |
| ECW24-3V320     | 18...36         | 3.3              | 5000             | 45      | 83          | 75     | B3      |
| ECW24-5V120     | 18...36         | 5.1              | 4000             | 45      | 85          | 75     | B3      |
| ECW48-2V520     | 36...72         | 2.5              | 5000             | 35      | 82          | 75     | B3      |
| ECW48-3V320     | 36...72         | 3.3              | 5000             | 35      | 84          | 75     | B3      |
| ECW48-5V120     | 36...72         | 5.1              | 4000             | 25      | 86          | 75     | B3      |

# DC/DC CONVERTERS (REGULATED)

## 25 Watt

### ECW-Series, 2x1.6"

#### 2:1 input voltage range DC/DC converter line with single output

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency up to 91%
- Remote on/off control
- External output adjustment
- No derating up to 71°C
- Low output ripple and noise
- Pi-filter at input
- Low silhouette
- Metal case with non conductive base plate
- **Dimensions: 50.8 x 40.6 x 11.4 mm**



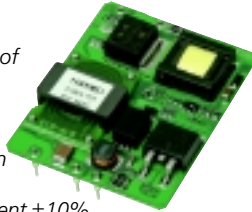
| Model                     | Uin     | Uout                             | Iout | No load | η typ. | Ripple | Pinning |
|---------------------------|---------|----------------------------------|------|---------|--------|--------|---------|
| Single Versions           | VDC     | VDC                              | A    | mA      | %      | mVpp   |         |
| ECW24-1V825SC             | 18...36 | 1.8                              | 8.0  | 70      | 83     | 75     | BC1     |
| ECW24-2V525SC             | 18...36 | 2.5                              | 8.0  | 70      | 86     | 75     | BC1     |
| ECW24-3V325SC             | 18...36 | 3.3                              | 6.0  | 70      | 88     | 75     | BC1     |
| ECW24-0525SC              | 18...36 | 5.0                              | 5.0  | 70      | 89     | 75     | BC1     |
| ECW24-1225SC              | 18...36 | 12.0                             | 2.0  | 50      | 88     | 100    | BC1     |
| ECW24-1525SC              | 18...36 | 15.0                             | 1.6  | 50      | 88     | 100    | BC1     |
| ECW48-1V825SC             | 36...72 | 1.8                              | 8.0  | 50      | 85     | 75     | BC1     |
| ECW48-2V525SC             | 36...72 | 2.5                              | 8.0  | 50      | 87     | 75     | BC1     |
| ECW48-3V325SC             | 36...72 | 3.3                              | 6.0  | 50      | 89     | 75     | BC1     |
| ECW48-0525SC              | 36...72 | 5.0                              | 5.0  | 50      | 91     | 75     | BC1     |
| ECW48-1215SC              | 36...72 | 12.0                             | 2.0  | 30      | 89     | 100    | BC1     |
| ECW48-1525SC              | 36...72 | 15.0                             | 1.6  | 30      | 89     | 100    | BC1     |
| Alternative: ECW-.....SCN |         | N = negative remote on/off logic |      |         |        |        |         |

## 25 Watt

### OCW-Series, 2x1.6" Open Frame

#### 2:1 input voltage range open frame DC/DC converter line

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency up to 91%
- Industry standard 2x2" pinning
- Over temperature protection
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- No derating up to 60°C
- Low output ripple and noise
- Low silhouette
- **Dimensions: 49.5 x 39.4 x 10.2 mm**



| Model                   | Uin     | Uout                             | Iout | No load | η typ. | Ripple | Pinning |
|-------------------------|---------|----------------------------------|------|---------|--------|--------|---------|
| Single Versions         | VDC     | VDC                              | A    | mA      | %      | mVpp   |         |
| OCW24-1V825             | 18...36 | 1.8                              | 8.0  | 50      | 83     | 75     | BC1     |
| OCW24-2V525             | 18...36 | 2.5                              | 8.0  | 50      | 86     | 75     | BC1     |
| OCW24-3V325             | 18...36 | 3.3                              | 6.0  | 50      | 88     | 75     | BC1     |
| OCW24-0525              | 18...36 | 5.0                              | 5.0  | 50      | 89     | 75     | BC1     |
| OCW24-1225              | 18...36 | 12.0                             | 2.0  | 50      | 88     | 100    | BC1     |
| OCW24-1525              | 18...36 | 15.0                             | 1.6  | 50      | 88     | 100    | BC1     |
| OCW48-1V825             | 36...72 | 1.8                              | 8.0  | 30      | 85     | 75     | BC1     |
| OCW48-2V525             | 36...72 | 2.5                              | 8.0  | 30      | 87     | 75     | BC1     |
| OCW48-3V325             | 36...72 | 3.3                              | 6.0  | 30      | 89     | 75     | BC1     |
| OCW48-0525              | 36...72 | 5.0                              | 5.0  | 30      | 91     | 75     | BC1     |
| OCW48-1225              | 36...72 | 12.0                             | 2.0  | 30      | 89     | 100    | BC1     |
| OCW48-1525              | 36...72 | 15.0                             | 1.6  | 30      | 89     | 100    | BC1     |
| Alternative: OCW-.....N |         | N = negative remote on/off logic |      |         |        |        |         |

## 25-30 Watt

### ECW 'C'-Series, 2x2"

#### 2:1 input voltage range DC/DC converter line with up to 3 output voltages

- Input to output isolation of 500 VDC
- Continuous short circuit proof
- Efficiency up to 85%
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- Low output ripple and noise
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- Operating ambient temperature  $-25$  to  $+71^\circ\text{C}$
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



| Model           | Uin     | Uout            | Iout            | No load | η typ. | Ripple | Pinning |
|-----------------|---------|-----------------|-----------------|---------|--------|--------|---------|
| Single Versions | VDC     | VDC             | mA              | mA      | %      | mVpp   |         |
| ECW12-0325C     | 9...18  | 3.3             | 5000            | 30      | 74     | 75     | C5      |
| ECW12-0525C     | 9...18  | 5.1             | 5000            | 30      | 78     | 75     | C5      |
| ECW12-1230C     | 9...18  | 12.0            | 2500            | 30      | 82     | 75     | C5      |
| ECW12-1530C     | 9...18  | 15.0            | 2000            | 30      | 82     | 75     | C5      |
| ECW24-0325C     | 18...36 | 3.3             | 5000            | 30      | 75     | 75     | C5      |
| ECW24-0525C     | 18...36 | 5.1             | 5000            | 30      | 79     | 75     | C5      |
| ECW24-1230C     | 18...36 | 12.0            | 2500            | 30      | 82     | 75     | C5      |
| ECW24-1530C     | 18...36 | 15.0            | 2000            | 30      | 82     | 75     | C5      |
| ECW48-0325C     | 36...72 | 3.3             | 5000            | 20      | 75     | 75     | C5      |
| ECW48-0525C     | 36...72 | 5.1             | 5000            | 20      | 79     | 75     | C5      |
| ECW48-1230C     | 36...72 | 12.0            | 2500            | 20      | 82     | 75     | C5      |
| ECW48-1530C     | 36...72 | 15.0            | 2000            | 20      | 82     | 75     | C5      |
| Dual Versions   |         |                 |                 |         |        |        |         |
| ECW12-050525C   | 9...18  | $\pm 5.1$       | $\pm 2500$      | 35      | 78     | 75     | C6      |
| ECW12-121230C   | 9...18  | $\pm 12.0$      | $\pm 1250$      | 35      | 82     | 75     | C6      |
| ECW12-151530C   | 9...18  | $\pm 15.0$      | $\pm 1000$      | 35      | 82     | 75     | C6      |
| ECW24-050525C   | 18...36 | $\pm 5.1$       | $\pm 2500$      | 30      | 79     | 75     | C6      |
| ECW24-121230C   | 18...36 | $\pm 12.0$      | $\pm 1250$      | 30      | 85     | 75     | C6      |
| ECW24-151530C   | 18...36 | $\pm 15.0$      | $\pm 1000$      | 30      | 85     | 75     | C6      |
| ECW48-050525C   | 36...72 | $\pm 5.1$       | $\pm 2500$      | 25      | 79     | 75     | C6      |
| ECW48-121230C   | 36...72 | $\pm 12.0$      | $\pm 1250$      | 25      | 85     | 75     | C6      |
| ECW48-151530C   | 36...72 | $\pm 15.0$      | $\pm 1000$      | 25      | 85     | 75     | C6      |
| Triple Versions |         |                 |                 |         |        |        |         |
| ECW12-512T25C   | 9...18  | 5.1/ $\pm 12.0$ | 3500/ $\pm 310$ | 35      | 79     | 75     | C7      |
| ECW12-515T25C   | 9...18  | 5.1/ $\pm 15.0$ | 3500/ $\pm 250$ | 35      | 79     | 75     | C7      |
| ECW24-512T25C   | 18...36 | 5.1/ $\pm 12.0$ | 3500/ $\pm 310$ | 30      | 80     | 75     | C7      |
| ECW24-515T25C   | 18...36 | 5.1/ $\pm 15.0$ | 3500/ $\pm 250$ | 30      | 80     | 75     | C7      |
| ECW48-512T25C   | 36...72 | 5.1/ $\pm 12.0$ | 3500/ $\pm 310$ | 25      | 80     | 75     | C7      |
| ECW48-515T25C   | 36...72 | 5.1/ $\pm 15.0$ | 3500/ $\pm 250$ | 25      | 80     | 75     | C7      |

# DC/DC CONVERTERS (REGULATED)

## 25-30 Watt

### UCW 'C'-Series, 2x2"

**2:1 input voltage range DC/DC converter line with up to 3 output voltages**

- All models certified to UL and cUL 60950
- Input to output isolation of 500 VDC
- Continuous short circuit proof
- Efficiency up to 85%
- Remote ON/OFF control
- Ext. output voltage adjustment  $\pm 10\%$
- Low output ripple and noise
- Low silhouette
- Metal case with non conductive base plate, six sides shielded
- Operating ambient temperature  $-25$  to  $+71^\circ\text{C}$
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %           | mVpp   |         |
| UCW12-0325C     | 9...18          | 3.3              | 5000             | 30      | 74          | 75     | C5      |
| UCW12-0525C     | 9...18          | 5.1              | 5000             | 30      | 78          | 75     | C5      |
| UCW12-1230C     | 9...18          | 12.0             | 2500             | 30      | 82          | 75     | C5      |
| UCW12-1530C     | 9...18          | 15.0             | 2000             | 30      | 82          | 75     | C5      |
| UCW24-0325C     | 18...36         | 3.3              | 5000             | 30      | 75          | 75     | C5      |
| UCW24-0525C     | 18...36         | 5.1              | 5000             | 30      | 79          | 75     | C5      |
| UCW24-1230C     | 18...36         | 12.0             | 2500             | 30      | 82          | 75     | C5      |
| UCW24-1530C     | 18...36         | 15.0             | 2000             | 30      | 82          | 75     | C5      |
| UCW48-0325C     | 36...72         | 3.3              | 5000             | 20      | 75          | 75     | C5      |
| UCW48-0525C     | 36...72         | 5.1              | 5000             | 20      | 79          | 75     | C5      |
| UCW48-1230C     | 36...72         | 12.0             | 2500             | 20      | 82          | 75     | C5      |
| UCW48-1530C     | 36...72         | 15.0             | 2000             | 20      | 82          | 75     | C5      |
| Dual Versions   |                 |                  |                  |         |             |        |         |
| UCW12-050525C   | 9...18          | $\pm 5.1$        | $\pm 2500$       | 35      | 78          | 75     | C6      |
| UCW12-121230C   | 9...18          | $\pm 12.0$       | $\pm 1250$       | 35      | 82          | 75     | C6      |
| UCW12-151530C   | 9...18          | $\pm 15.0$       | $\pm 1000$       | 35      | 82          | 75     | C6      |
| UCW24-050525C   | 18...36         | $\pm 5.1$        | $\pm 2500$       | 30      | 79          | 75     | C6      |
| UCW24-121230C   | 18...36         | $\pm 12.0$       | $\pm 1250$       | 30      | 85          | 75     | C6      |
| UCW24-151530C   | 18...36         | $\pm 15.0$       | $\pm 1000$       | 30      | 85          | 75     | C6      |
| UCW48-050525C   | 36...72         | $\pm 5.1$        | $\pm 2500$       | 25      | 79          | 75     | C6      |
| UCW48-121230C   | 36...72         | $\pm 12.0$       | $\pm 1250$       | 25      | 85          | 75     | C6      |
| UCW48-151530C   | 36...72         | $\pm 15.0$       | $\pm 1000$       | 25      | 85          | 75     | C6      |
| Triple Versions |                 |                  |                  |         |             |        |         |
| UCW12-512T25C   | 9...18          | 5.1/ $\pm 12.0$  | 3500/ $\pm 310$  | 35      | 79          | 75     | C7      |
| UCW12-515T25C   | 9...18          | 5.1/ $\pm 15.0$  | 3500/ $\pm 250$  | 35      | 79          | 75     | C7      |
| UCW24-512T25C   | 18...36         | 5.1/ $\pm 12.0$  | 3500/ $\pm 310$  | 30      | 80          | 75     | C7      |
| UCW24-515T25C   | 18...36         | 5.1/ $\pm 15.0$  | 3500/ $\pm 250$  | 30      | 80          | 75     | C7      |
| UCW48-512T25C   | 36...72         | 5.1/ $\pm 12.0$  | 3500/ $\pm 310$  | 25      | 80          | 75     | C7      |
| UCW48-515T25C   | 36...72         | 5.1/ $\pm 15.0$  | 3500/ $\pm 250$  | 25      | 80          | 75     | C7      |

## 25-30 Watt

### ECW-Series, 3x2.6"

**4:1 input voltage range DC/DC converter line with up to 3 output voltages**

- 4:1 input voltage range
- Input to output isolation of 500 VDC
- Continuous short circuit proof
- Remote ON/OFF control
- Ext. output voltage trimming  $\pm 10\%$
- Low output ripple and noise
- No derating up to  $71^\circ\text{C}$
- Metal case with non conductive base plate, six sides shielded
- EMC according to EN55022 Class A
- **Dimensions: 76.2 x 65 x 21 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub> | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | mA               | mA      | %           | mVpp   |         |
| ECW24-0525      | 9...36          | 5.0              | 5000             | 20      | 77          | 75     | E1      |
| ECW24-1230      | 9...36          | 12.0             | 2500             | 20      | 81          | 75     | E1      |
| ECW24-1530      | 9...36          | 15.0             | 2000             | 20      | 81          | 75     | E1      |
| ECW48-0525      | 18...72         | 5.0              | 5000             | 15      | 78          | 75     | E1      |
| ECW48-1230      | 18...72         | 12.0             | 2500             | 15      | 81          | 75     | E1      |
| ECW48-1530      | 18...72         | 15.0             | 2000             | 15      | 81          | 75     | E1      |
| Dual Versions   |                 |                  |                  |         |             |        |         |
| ECW24-121230    | 9...36          | $\pm 12.0$       | $\pm 1250$       | 25      | 84          | 75     | E2      |
| ECW24-151530    | 9...36          | $\pm 15.0$       | $\pm 1000$       | 25      | 84          | 75     | E2      |
| ECW48-121230    | 18...72         | $\pm 12.0$       | $\pm 1250$       | 20      | 84          | 75     | E2      |
| ECW48-151530    | 18...72         | $\pm 15.0$       | $\pm 1000$       | 20      | 84          | 75     | E2      |
| Triple Versions |                 |                  |                  |         |             |        |         |
| ECW24-512T30    | 9...36          | 5.0/ $\pm 12.0$  | 3000/ $\pm 625$  | 25      | 79          | 75     | E3      |
| ECW24-515T30    | 9...36          | 5.0/ $\pm 15.0$  | 3000/ $\pm 500$  | 25      | 80          | 75     | E3      |
| ECW48-512T30    | 18...72         | 5.0/ $\pm 12.0$  | 3000/ $\pm 625$  | 20      | 79          | 75     | E3      |
| ECW48-515T30    | 18...72         | 5.0/ $\pm 15.0$  | 3000/ $\pm 500$  | 20      | 80          | 75     | E3      |

## 40 Watt

### ECW-Series, 2x2"

**2:1 input voltage range DC/DC converter line with single output**

- I/O isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency up to 89%
- Remote ON/OFF control
- Ext. output voltage trimming  $\pm 10\%$
- No derating up to  $60^\circ\text{C}$
- Over temperature protection
- Metal case with non conductive base plate, six sides shielded
- **Dimensions: 50.8 x 50.8 x 10.2 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %           | mVpp   |         |
| ECW24-0340C     | 18...36         | 3.3              | 8.0                              | 100     | 87          | 50     | C8      |
| ECW24-0540C     | 18...36         | 5.0              | 8.0                              | 100     | 89          | 50     | C8      |
| ECW24-1240C     | 18...36         | 12.0             | 3.33                             | 100     | 88          | 75     | C8      |
| ECW24-1540C     | 18...36         | 15.0             | 2.67                             | 100     | 89          | 75     | C8      |
| ECW48-0340C     | 36...72         | 3.3              | 8.0                              | 100     | 88          | 50     | C8      |
| ECW48-0540C     | 36...72         | 5.0              | 8.0                              | 100     | 90          | 50     | C8      |
| ECW48-1240C     | 36...72         | 12.0             | 3.33                             | 100     | 89          | 75     | C8      |
| ECW48-1540C     | 36...72         | 15.0             | 2.67                             | 100     | 89          | 75     | C8      |
| Alternative:    | ECW...40CN      |                  | N = negative remote on/off logic |         |             |        |         |

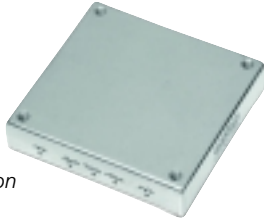
# DC/DC CONVERTERS (REGULATED)

## 50 Watt

### ECU-Series, Half Brick

#### 4:1 input voltage range DC/DC converter line with single output

- 4:1 input voltage range
- Industry standard pinning
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, five sides shielded
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



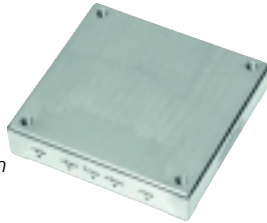
| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %      | mVpp   |         |
| ECU24-3V350     | 9...36          | 3.3              | 10.00                            | 50      | 77     | 100    | HB1     |
| ECU24-5V050     | 9...36          | 5.0              | 10.00                            | 50      | 81     | 100    | HB1     |
| ECU24-1250      | 9...36          | 12.0             | 4.16                             | 50      | 83     | 150    | HB1     |
| ECU24-1550      | 9...36          | 15.0             | 3.33                             | 50      | 83     | 150    | HB1     |
| ECU24-2450      | 9...36          | 24.0             | 2.08                             | 50      | 83     | 240    | HB1     |
| ECU48-3V350     | 18...72         | 3.3              | 10.00                            | 50      | 78     | 100    | HB1     |
| ECU48-5V050     | 18...72         | 5.0              | 10.00                            | 50      | 82     | 100    | HB1     |
| ECU48-1250      | 18...72         | 12.0             | 4.16                             | 50      | 84     | 150    | HB1     |
| ECU48-1550      | 18...72         | 15.0             | 3.33                             | 50      | 84     | 150    | HB1     |
| ECU48-2450      | 18...72         | 24.0             | 2.08                             | 50      | 84     | 240    | HB1     |
| Alternative:    | ECU...N         |                  | N = negative remote on/off logic |         |        |        |         |

## 50 Watt

### ECW-Series, Half Brick

#### 2:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- Efficiency up to 86%
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, five sides shielded
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- All models certified to UL 60950
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



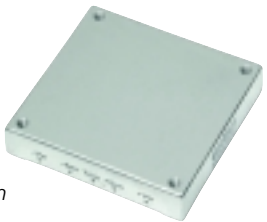
| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %      | mVpp   |         |
| ECW12-2V550     | 9...18          | 2.5              | 10.00                            | 50      | 76     | 75     | HB1     |
| ECW12-0350      | 9...18          | 3.3              | 10.00                            | 50      | 78     | 75     | HB1     |
| ECW12-0550      | 9...18          | 5.1              | 10.00                            | 50      | 81     | 75     | HB1     |
| ECW12-1250      | 9...18          | 12.0             | 4.16                             | 50      | 84     | 100    | HB1     |
| ECW12-1550      | 9...18          | 15.0             | 3.33                             | 50      | 84     | 100    | HB1     |
| ECW12-2450      | 9...18          | 24.0             | 2.08                             | 50      | 84     | 240    | HB1     |
| ECW24-2V550     | 18...36         | 2.5              | 10.00                            | 50      | 77     | 75     | HB1     |
| ECW24-0350      | 18...36         | 3.3              | 10.00                            | 50      | 79     | 75     | HB1     |
| ECW24-0550      | 18...36         | 5.1              | 10.00                            | 50      | 82     | 75     | HB1     |
| ECW24-1250      | 18...36         | 12.0             | 4.16                             | 50      | 85     | 100    | HB1     |
| ECW24-1550      | 18...36         | 15.0             | 3.33                             | 50      | 85     | 100    | HB1     |
| ECW24-2450      | 18...36         | 24.0             | 2.08                             | 50      | 86     | 240    | HB1     |
| ECW48-2V550     | 36...72         | 2.5              | 10.00                            | 50      | 77     | 75     | HB1     |
| ECW48-0350      | 36...72         | 3.3              | 10.00                            | 50      | 79     | 75     | HB1     |
| ECW48-0550      | 36...72         | 5.1              | 10.00                            | 50      | 82     | 75     | HB1     |
| ECW48-1250      | 36...72         | 12.0             | 4.16                             | 50      | 85     | 100    | HB1     |
| ECW48-1550      | 36...72         | 15.0             | 3.33                             | 50      | 85     | 100    | HB1     |
| ECW48-2450      | 36...72         | 24.0             | 2.08                             | 50      | 86     | 240    | HB1     |
| Alternative:    | ECW...N         |                  | N = negative remote on/off logic |         |        |        |         |

## 75 Watt

### ECU-Series, Half Brick

#### 4:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Half brick size
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, five sides shielded
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %      | mVpp   |         |
| ECU48-3V375     | 18...72         | 3.3              | 15.00                            | 50      | 78     | 100    | HB1     |
| ECU48-5V075     | 18...72         | 5.0              | 15.00                            | 50      | 82     | 100    | HB1     |
| ECU48-1275      | 18...72         | 12.0             | 6.25                             | 50      | 84     | 150    | HB1     |
| ECU48-1575      | 18...72         | 15.0             | 5.00                             | 50      | 84     | 150    | HB1     |
| ECU48-2475      | 18...72         | 24.0             | 3.12                             | 50      | 84     | 240    | HB1     |
| Alternative:    | ECU...75N       |                  | N = negative remote on/off logic |         |        |        |         |

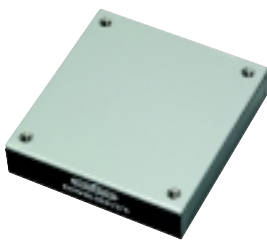
# DC/DC CONVERTERS (REGULATED)

## 75 Watt

### ECW-Series, Half Brick

#### 2:1 input voltage range DC/DC converter line with single and dual output

- Industry standard pinning
- Half brick size
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- High efficiency up to 86%
- Remote ON/OFF control
- Sense, single output only
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, five sides shielded
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- All models certified to UL60950
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



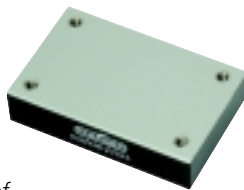
| Model           | U <sub>in</sub> | U <sub>out</sub>                 | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |     |
|-----------------|-----------------|----------------------------------|------------------|---------|--------|--------|---------|-----|
| Single Versions | VDC             | VDC                              | A                | mA      | %      | mVpp   |         |     |
| ECW12-2V575     | 9...18          | 2.5                              | 15.00            | 50      | 76     | 75     | HB1     |     |
| ECW12-0375      | 9...18          | 3.3                              | 15.00            | 50      | 78     | 75     | HB1     |     |
| ECW12-0575      | 9...18          | 5.1                              | 15.00            | 50      | 81     | 75     | HB1     |     |
| ECW12-1275      | 9...18          | 12.0                             | 6.25             | 50      | 84     | 100    | HB1     |     |
| ECW12-1575      | 9...18          | 15.0                             | 5.00             | 50      | 84     | 100    | HB1     |     |
| ECW12-2475      | 9...18          | 24.0                             | 3.13             | 50      | 84     | 240    | HB1     |     |
| ECW24-2V575     | 18...36         | 2.5                              | 15.00            | 50      | 77     | 75     | HB1     |     |
| ECW24-0375      | 18...36         | 3.3                              | 15.00            | 50      | 79     | 75     | HB1     |     |
| ECW24-0575      | 18...36         | 5.1                              | 15.00            | 50      | 82     | 75     | HB1     |     |
| ECW24-1275      | 18...36         | 12.0                             | 6.25             | 50      | 85     | 100    | HB1     |     |
| ECW24-1575      | 18...36         | 15.0                             | 5.00             | 50      | 85     | 100    | HB1     |     |
| ECW24-2475      | 18...36         | 24.0                             | 3.13             | 50      | 86     | 240    | HB1     |     |
| ECW48-2V575     | 36...72         | 2.5                              | 15.00            | 50      | 77     | 75     | HB1     |     |
| ECW48-0375      | 36...72         | 3.3                              | 15.00            | 50      | 79     | 75     | HB1     |     |
| ECW48-0575      | 36...72         | 5.1                              | 15.00            | 50      | 83     | 75     | HB1     |     |
| ECW48-1275      | 36...72         | 12.0                             | 6.25             | 50      | 85     | 100    | HB1     |     |
| ECW48-1575      | 36...72         | 15.0                             | 5.00             | 50      | 85     | 100    | HB1     |     |
| ECW48-2475      | 36...72         | 24.0                             | 3.13             | 50      | 86     | 240    | HB1     |     |
| Dual Versions   |                 |                                  | min.             | max.    |        |        |         |     |
| ECW24-052V575   | 18...36         | 5.1                              | 0                | 15      | 50     | 83     | 100     | HB2 |
|                 |                 | 2.5                              | 0                | 15      |        |        |         |     |
| ECW24-053V375   | 18...36         | 5.1                              | 0                | 15      | 50     | 83     | 100     | HB2 |
|                 |                 | 3.3                              | 0                | 15      |        |        |         |     |
| ECW48-052V575   | 36...72         | 5.1                              | 0                | 15      | 30     | 84     | 100     | HB2 |
|                 |                 | 2.5                              | 0                | 15      |        |        |         |     |
| ECW48-053V375   | 36...72         | 5.1                              | 0                | 15      | 30     | 84     | 100     | HB2 |
|                 |                 | 3.3                              | 0                | 15      |        |        |         |     |
| Alternative:    | ECW...-75N      | N = negative remote on/off logic |                  |         |        |        |         |     |

## 75 Watt

### EQW-Series, Quarter Brick

#### 2:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Quarter brick size
- 1.8, 2.5, 3.3 and 5.1VDC output voltages
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- Efficiency up to 90%
- Low output ripple and noise
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Aluminium base plate with plastic case
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- All models certified to UL and cUL 60950
- Ready for mounting of heat sink
- **Dimensions: 57.9 x 36.8 x 12.7 mm**



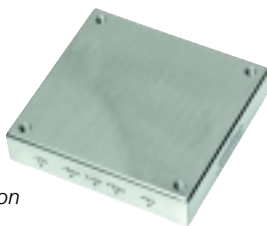
| Model           | U <sub>in</sub> | U <sub>out</sub>                 | I <sub>out</sub> | No load | η typ. | Ripple | Pinning |
|-----------------|-----------------|----------------------------------|------------------|---------|--------|--------|---------|
| Single Versions | VDC             | VDC                              | A                | mA      | %      | mVpp   |         |
| EQW24-1V875     | 18...36         | 1.8                              | 0.5 25           | 60      | 83     | 100    | QB1     |
| EQW24-2V575     | 18...36         | 2.5                              | 0.5 25           | 60      | 85     | 100    | QB1     |
| EQW24-3V375     | 18...36         | 3.3                              | 0.5 20           | 70      | 88     | 100    | QB1     |
| EQW24-5V175     | 18...36         | 5.1                              | 0.5 15           | 80      | 90     | 100    | QB1     |
| EQW48-1V875     | 36...72         | 1.8                              | 0.5 25           | 50      | 84     | 100    | QB1     |
| EQW48-2V575     | 36...72         | 2.5                              | 0.5 25           | 50      | 86     | 100    | QB1     |
| EQW48-3V375     | 36...72         | 3.3                              | 0.5 20           | 50      | 88     | 100    | QB1     |
| EQW48-5V175     | 36...72         | 5.1                              | 0.5 15           | 80      | 90     | 100    | QB1     |
| Alternative:    | EQW...-75N      | N = negative remote on/off logic |                  |         |        |        |         |

## 100 Watt

### ECW-Series, Half Brick

#### 2:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Half brick size
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- High efficiency up to 85%
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, five sides shielded
- Operating case temperature  $-40$  to  $+100^{\circ}\text{C}$
- All models certified to UL and cUL 60950
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



| Model           | Uin         | Uout                             | Iout  | No load | η typ. | Ripple | Pinning |
|-----------------|-------------|----------------------------------|-------|---------|--------|--------|---------|
| Single Versions | VDC         | VDC                              | A     | mA      | %      | mVpp   |         |
| ECW24-2V5100    | 18...36     | 2.5                              | 20.00 | 50      | 77     | 100    | HB1     |
| ECW24-03100     | 18...36     | 3.3                              | 20.00 | 50      | 79     | 100    | HB1     |
| ECW24-05100     | 18...36     | 5.1                              | 20.00 | 50      | 83     | 100    | HB1     |
| ECW24-12100     | 18...36     | 12.0                             | 8.30  | 50      | 85     | 150    | HB1     |
| ECW24-15100     | 18...36     | 15.0                             | 6.70  | 50      | 85     | 150    | HB1     |
| ECW24-24100     | 18...36     | 24.0                             | 4.17  | 50      | 85     | 240    | HB1     |
| ECW48-2V5100    | 36...72     | 2.5                              | 20.00 | 50      | 78     | 100    | HB1     |
| ECW48-03100     | 36...72     | 3.3                              | 20.00 | 50      | 80     | 100    | HB1     |
| ECW48-05100     | 36...72     | 5.1                              | 20.00 | 50      | 84     | 100    | HB1     |
| ECW48-12100     | 36...72     | 12.0                             | 8.30  | 50      | 85     | 150    | HB1     |
| ECW48-15100     | 36...72     | 15.0                             | 6.70  | 50      | 85     | 150    | HB1     |
| ECW48-24100     | 36...72     | 24.0                             | 4.17  | 50      | 85     | 240    | HB1     |
| Alternative:    | ECW...-100N | N = negative remote on/off logic |       |         |        |        |         |

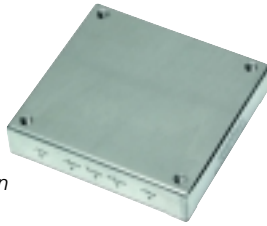
# DC/DC CONVERTERS (REGULATED)

## 150 Watt

### ECW-Series, Half Brick

#### 2:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Half brick size
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- Over temperature protection
- High efficiency up to 85%
- Low output ripple and noise
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Metal case with non conductive base plate, six sides shielded
- Operating case temperature  $-40$  to  $+100^\circ\text{C}$
- All models certified to UL and cUL 60950
- Ready for mounting of heat sink
- **Dimensions: 61 x 57.9 x 12.7 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %           | mVpp   |         |
| ECW48-2V5150    | 36...72         | 2.5              | 30.00                            | 25      | 74          | 100    | HB1     |
| ECW48-03150     | 36...72         | 3.3              | 30.00                            | 25      | 79          | 100    | HB1     |
| ECW48-05150     | 36...72         | 5.1              | 30.00                            | 25      | 83          | 100    | HB1     |
| ECW48-12150     | 36...72         | 12.0             | 12.50                            | 25      | 85          | 150    | HB1     |
| ECW48-15150     | 36...72         | 15.0             | 8.40                             | 25      | 85          | 150    | HB1     |
| ECW48-24150     | 36...72         | 24.0             | 6.25                             | 25      | 85          | 240    | HB1     |
| Alternative:    | ECW...-...150N  |                  | N = negative remote on/off logic |         |             |        |         |

## 180 Watt

### EQIW-Series, Quarter Brick

#### 2:1 input voltage range open frame DC/DC converter line with 12V output

- Very high efficiency of 94%
- Industry standard pinning
- I/O isolation of 2'250 VDC
- Continuous short circuit proof
- Over temperature protection
- Over current protection
- Option: integrated heat sink
- **Dimensions: 57.9 x 36.8 x 10.2 mm**



| Model           | U <sub>in</sub>                  | U <sub>out</sub> | I <sub>out</sub>                                       | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|----------------------------------|------------------|--------------------------------------------------------|---------|-------------|--------|---------|
| Single Versions | VDC                              | VDC              | A                                                      | mA      | %           | mVpp   |         |
| EQIW48-12180    | 36...72                          | 12.0             | 15                                                     | 70      | 94          | 120    | QB2     |
| Options:        | EQI...-...180K<br>EQI...-...180N |                  | K = with heat sink<br>N = negative remote on/off logic |         | Pinning QB3 |        |         |

## 200 Watt

### ECW-Series, Full Brick

#### 2:1 input voltage range DC/DC converter line with single output

- Industry standard pinning
- Full brick size
- Input to output isolation of 1'500 VDC
- Continuous short circuit proof
- High efficiency up to 85%
- Low output ripple and noise
- Remote ON/OFF control
- Sense
- Ext. output voltage trimming  $\pm 10\%$
- Aluminium base plate with plastic case
- Operating case temperature  $-40$  to  $+100^\circ\text{C}$
- All models certified to UL and cUL 60950
- Ready for mounting of heat sink
- **Dimensions: 116.8 x 61 x 12.7 mm**



| Model           | U <sub>in</sub> | U <sub>out</sub> | I <sub>out</sub>                 | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|-----------------|------------------|----------------------------------|---------|-------------|--------|---------|
| Single Versions | VDC             | VDC              | A                                | mA      | %           | mVpp   |         |
| ECW48-2V5200    | 36...72         | 2.5              | 40.00                            | 25      | 74          | 100    | FB1     |
| ECW48-3V3200    | 36...72         | 3.3              | 40.00                            | 25      | 79          | 100    | FB1     |
| ECW48-5V1200    | 36...72         | 5.1              | 40.00                            | 25      | 83          | 100    | FB1     |
| ECW48-12200     | 36...72         | 12.0             | 17.00                            | 25      | 85          | 150    | FB1     |
| ECW48-15200     | 36...72         | 15.0             | 13.30                            | 25      | 85          | 150    | FB1     |
| ECW48-24 200    | 36...72         | 24.0             | 8.40                             | 25      | 85          | 240    | FB1     |
| ECW48-48200     | 36...72         | 48.0             | 4.20                             | 25      | 85          | 480    | FB1     |
| Alternative:    | ECW...-...200N  |                  | N = negative remote on/off logic |         |             |        |         |

## 300 Watt

### EQI-Series, Quarter Brick

#### Intermediate bus DC/DC converter line with 12V output

- Very high efficiency of 95%
- Industry standard pinning
- I/O isolation of 2'250 VDC
- Continuous short circuit proof
- Over temperature protection
- Over voltage protection
- Over current protection
- Option: integrated heat sink
- **Dimensions: 57.9 x 36.8 x 10.2 mm**



| Model           | U <sub>in</sub>                  | U <sub>out</sub> | I <sub>out</sub>                                       | No load | $\eta$ typ. | Ripple | Pinning |
|-----------------|----------------------------------|------------------|--------------------------------------------------------|---------|-------------|--------|---------|
| Single Versions | VDC                              | VDC              | A                                                      | mA      | %           | mVpp   |         |
| EQI48-12300     | 42...53                          | 12.0             | 25                                                     | 100     | 95          | 120    | QB2     |
| Options:        | EQI...-...300K<br>EQI...-...300N |                  | K = with heat sink<br>N = negative remote on/off logic |         | Pinning QB3 |        |         |

## DC/DC CONVERTER UNITS

### Vehicle Converter

#### VCU-Series 75 Watt

**4:1 input voltage range DC/DC converter line for use in battery and vehicle applications**

- 4:1 ultra wide input range
- 2V hysteresis
- I/O isolation of 1'500 VDC
- Continuously short circuit proof
- Over temperature protection
- Burst and surge proof 2'000/500 Vdc
- Reversed input polarity protection
- Vibration, shock and bump resistant
- EMC according to EN55022 Class B
- Aluminium chassis
- **Dimensions: 163 x 83 x 28 mm**



| Model                 | Uin      | Uout | Iout | No load | η typ. | Ripple | Pinning |
|-----------------------|----------|------|------|---------|--------|--------|---------|
| Single Versions       | VDC      | VDC  | A    | mA      | %      | mVpp   |         |
| VCU24-1375-A1P1-H2.C  | 9...36   | 13.2 | 5.7  | 25      | 81     | 100    | other   |
| VCU24-2475-A1P1-H2.C  | 9...36   | 13.2 | 3.1  | 25      | 81     | 100    | other   |
| VCU48-1375-A1P1-H2.C  | 18...72  | 13.2 | 5.7  | 25      | 82     | 100    | other   |
| VCU48-2475-A1P1-H2.C  | 18...72  | 24.0 | 3.1  | 25      | 82     | 100    | other   |
| VCU110-1375-A1P1-H2.C | 66...154 | 13.2 | 5.7  | 25      | 82     | 100    | other   |
| VCU110-2475-A1P1-H2.C | 66...154 | 24.0 | 3.1  | 25      | 82     | 100    | other   |



### Vehicle UPS

#### UPS for the VCU vehicle converter line

- Sealed lead battery
- Temperature controlled charging
- Vibration, shock and bump resistant
- Input power fail signal
- PC shutdown signal
- Battery low / shut down signal
- Internal battery short circuit protection
- RS232 interface
- Aluminum chassis
- **Dimensions: see data sheet**

| Model           | Uout nom | Uout range | Iout | Capacity | Uin nom | Connector   |
|-----------------|----------|------------|------|----------|---------|-------------|
| Single Versions | VDC      | VDC        | A    |          | VDC     |             |
| VUPS-1375-EV9-C | 12       | 9...14.2   | 6    | 6Ah @ 1h | 13.2    | Screw Term. |
| VUPS-2475-EP5-C | 24       | 18...28.4  | 3    | 3Ah @ 1h | 26.4    | Screw Term. |

Other input and output voltages available upon request



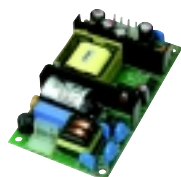
# AC/DC POWER SUPPLIES

## 5-60 Watt

### CFM Series, Open Frame

**Cost-effective open frame modules with universal input range and single output voltages**

- 85/90 to 264 VAC universal input range
- 47-63 Hz
- Input to output isolation 3'000 VAC
- EMC according to EN55022 Class B
- PCB pinning (10 and 15W series)
- Molex connectors (20 to 60W series)
- High efficiency
- Industry standard pin out
- All models certified to UL and cUL 60950
- CE certified
- Other output voltages available



| Model           | Uin .    | Uout | Iout | Efficiency | η typ. | Ripple | Dimensions    |
|-----------------|----------|------|------|------------|--------|--------|---------------|
| Single Versions | VAC      | VDC  | mA   | Hz         | %      | mVpp   | mm            |
| CFM-05S033      | 85...264 | 3.3  | 1250 | 47...63    | 70-77  | 50     | 55 x 35 x 21  |
| CFM-05S050      | 85...264 | 5.0  | 1000 | 47...63    | 70-77  | 50     | 55 x 35 x 21  |
| CFM-05S090      | 85...264 | 9.0  | 550  | 47...63    | 70-77  | 90     | 55 x 35 x 21  |
| CFM-05S120      | 85...264 | 12.0 | 420  | 47...63    | 70-77  | 120    | 55 x 35 x 21  |
| CFM-05S150      | 85...264 | 15.0 | 330  | 47...63    | 70-77  | 150    | 55 x 35 x 21  |
| CFM-05S180      | 85...264 | 18.0 | 280  | 47...63    | 70-77  | 180    | 55 x 35 x 21  |
| CFM-05S240      | 85...264 | 24.0 | 230  | 47...63    | 70-77  | 240    | 55 x 35 x 21  |
| CFM-1007S       | 85...264 | 3.3  | 2500 | 47...63    | 65     | 50     | 65 x 45 x 23  |
| CFM-1001S       | 85...264 | 5.0  | 2000 | 47...63    | 70     | 50     | 65 x 45 x 23  |
| CFM-1002S       | 85...264 | 12.0 | 833  | 47...63    | 75     | 120    | 65 x 45 x 23  |
| CFM-1003S       | 85...264 | 15.0 | 667  | 47...63    | 75     | 150    | 65 x 45 x 23  |
| CFM-1005S       | 85...264 | 24.0 | 417  | 47...63    | 78     | 240    | 65 x 45 x 23  |
| CFM-1507S       | 85...264 | 3.3  | 3000 | 47...63    | 70     | 50     | 70 x 48 x 23  |
| CFM-1501S       | 85...264 | 5.0  | 3000 | 47...63    | 73     | 50     | 70 x 48 x 23  |
| CFM-1502S       | 85...264 | 12.0 | 1250 | 47...63    | 80     | 120    | 70 x 48 x 23  |
| CFM-1503S       | 85...264 | 15.0 | 1000 | 47...63    | 80     | 150    | 70 x 48 x 23  |
| CFM-1505S       | 85...264 | 24.0 | 630  | 47...63    | 82     | 240    | 70 x 48 x 23  |
| CFM-2007S       | 85...264 | 3.3  | 4400 | 47...63    | 70     | 50     | 89 x 51 x 20  |
| CFM-2001S       | 85...264 | 5.0  | 4400 | 47...63    | 73     | 50     | 89 x 51 x 20  |
| CFM-2002S       | 85...264 | 12.0 | 1800 | 47...63    | 80     | 120    | 89 x 51 x 20  |
| CFM-2003S       | 85...264 | 15.0 | 1400 | 47...63    | 80     | 150    | 89 x 51 x 20  |
| CFM-2005S       | 85...264 | 24.0 | 920  | 47...63    | 82     | 240    | 89 x 51 x 20  |
| CFM-40S033      | 90...264 | 3.3  | 6000 | 47...63    | 74     | 50     | 102 x 51 x 30 |
| CFM-40S050      | 90...264 | 5.0  | 6000 | 47...63    | 76     | 50     | 102 x 51 x 30 |
| CFM-40S090      | 90...264 | 9.0  | 4450 | 47...63    | 80     | 90     | 102 x 51 x 30 |
| CFM-40S120      | 90...264 | 12.0 | 3340 | 47...63    | 82     | 120    | 102 x 51 x 30 |
| CFM-40S150      | 90...264 | 15.0 | 2670 | 47...63    | 83     | 150    | 102 x 51 x 30 |
| CFM-40S240      | 90...264 | 24.0 | 1670 | 47...63    | 85     | 240    | 102 x 51 x 30 |
| CFM-40S480      | 90...264 | 48.0 | 834  | 47...63    | 87     | 480    | 102 x 51 x 30 |
| CFM-60S033      | 90...264 | 3.3  | 8000 | 47...63    | 74     | 50     | 102 x 51 x 30 |
| CFM-60S050      | 90...264 | 5.0  | 8000 | 47...63    | 76     | 50     | 102 x 51 x 30 |
| CFM-60S090      | 90...264 | 9.0  | 6670 | 47...63    | 80     | 90     | 102 x 51 x 30 |
| CFM-60S120      | 90...264 | 12.0 | 5000 | 47...63    | 82     | 120    | 102 x 51 x 30 |
| CFM-60S150      | 90...264 | 15.0 | 4000 | 47...63    | 83     | 150    | 102 x 51 x 30 |
| CFM-60S240      | 90...264 | 24.0 | 2500 | 47...63    | 85     | 240    | 102 x 51 x 30 |
| CFM-60S480      | 90...264 | 48.0 | 1250 | 47...63    | 87     | 480    | 102 x 51 x 30 |

# AC/DC POWER SUPPLIES

## 40-60 Watt

### CFM Series, Dual & Triple

**Cost-effective open frame modules with universal input range and up to 3 output voltages**

- 85/90 to 264 VAC universal input range
- 47-63 Hz
- Input to output isolation 3'000 VAC
- EMC according to EN55022 Class B
- PCB pinning (10 and 15W series)
- Molex connectors (20 to 60W series)
- High efficiency
- Industry standard pin out
- All models certified to UL and cUL 60950
- CE certified
- Other output voltages available



| Model                                                                                                                                                          | U <sub>in</sub> .          | U <sub>out</sub>     | I <sub>out</sub>            | Efficiency | η typ. | Ripple           | Dimensions |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|------------|--------|------------------|------------|
| Dual Versions                                                                                                                                                  | VAC                        | VDC                  | mA                          | Hz         | %      | mVpp             | mm         |
| CFM-40D-01*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>12.0          | 0.4-5.0<br>0.2-2.5          | 47...440   | 77     | 50<br>120        | 102x51x30  |
| CFM-40D-02*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>24.0          | 0.4-5.0<br>0.2-1.5          | 47...440   | 78     | 50<br>240        | 102x51x30  |
| *From each output it is possible to draw the maximum indicated current, provided that the total output power does not exceed the maximum 40 Watt output power. |                            |                      |                             |            |        |                  |            |
| Triple Versions                                                                                                                                                | VAC                        | VDC                  | mA                          | Hz         | %      | mVpp             | mm         |
| CFM-40T-01*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>12.0<br>-5.0  | 0.4-5.0<br>0.2-2.5<br>0-0.5 | 47...440   | 75     | 50<br>120<br>50  | 102x51x30  |
| CFM-40T-02*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>12.0<br>-12.0 | 0.4-5.0<br>0.2-2.5<br>0-0.5 | 47...440   | 75     | 50<br>120<br>120 | 102x51x30  |
| CFM-40T-03*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>15.0<br>-15.0 | 0.4-5.0<br>0.2-2.3<br>0-0.5 | 47...440   | 75     | 50<br>150<br>150 | 102x51x30  |
| CFM-40T-04*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>24.0<br>-12.0 | 0.4-5.0<br>0.2-1.5<br>0-0.5 | 47...440   | 75     | 50<br>240<br>120 | 102x51x30  |
| CFM-40T-05*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>24.0<br>-5.0  | 0.4-5.0<br>0.2-1.5<br>0-0.5 | 47...440   | 75     | 50<br>240<br>50  | 102x51x30  |
| CFM-40T-06*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>24.0<br>-12.0 | 0.4-5.0<br>0.2-1.5<br>0-0.5 | 47...440   | 75     | 50<br>240<br>120 | 102x51x30  |
| CFM-40T-07*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 3.3<br>5.0<br>-12.0  | 0.4-7.0<br>0.2-3.5<br>0-0.5 | 47...440   | 70     | 50<br>50<br>120  | 102x51x30  |
| CFM-60T-01*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>12.0<br>-5.0  | 0-5.0<br>0-3.7<br>0-0.65    | 47...63    | 75     | 50<br>120<br>120 | 102x51x32  |
| CFM-60T-02*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>15.0<br>-15.0 | 0-5.0<br>0-3.1<br>0-0.5     | 47...63    | 75     | 50<br>150<br>150 | 102x51x32  |
| CFM-60T-03*                                                                                                                                                    | 90...264<br>(120...370Vdc) | 5.0<br>24.0<br>-12.0 | 0-5.0<br>0-1.8<br>0-0.6     | 47...63    | 75     | 50<br>240<br>120 | 102x51x32  |
| CFM-60T-04**                                                                                                                                                   | 90...264<br>(120...370Vdc) | 3.3<br>5.0<br>-12.0  | 0-7.5<br>0-3.7<br>0-0.65    | 47...63    | 75     | 50<br>50<br>120  | 102x51x32  |

\*) From each output it is possible to draw the maximum indicated current, provided that the total output power does not exceed the 40 Watt (CFM-40T-xx) or 60 Watt (CFM-60T-xx) output power.

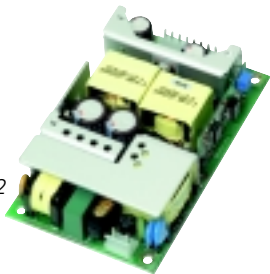
\*\*) CFM-60T-04: max. output power = 40.8W

## 100 Watt

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**Cost-effective open frame modules with universal input range and PFC**

- 90 to 264 VAC universal input range
- Power factor correction
- 47-63 Hz
- Input to output isolation 3'000 VAC
- EMC according to EN55022 Class B
- Molex connectors
- UL and cUL 60950
- CE certified
- Other output voltages available



| Model           | U <sub>in</sub> . | U <sub>out</sub> | I <sub>out</sub> | Frequency | η typ. | Ripple | Dimension |
|-----------------|-------------------|------------------|------------------|-----------|--------|--------|-----------|
| Single Versions | VAC               | VDC              | A                | Hz        | %      | mVpp   |           |
| CFM-100S050     | 90...264          | 5.0              | 20.0             | 47...63   | 76     | 50     | 127x76x30 |
| CFM-100S075     | 90...264          | 7.5              | 13.3             | 47...63   | 76     | 75     | 127x76x30 |
| CFM-100S090     | 90...264          | 9.0              | 11.2             | 47...63   | 77     | 90     | 127x76x30 |
| CFM-100S120     | 90...264          | 12.0             | 8.4              | 47...63   | 85     | 120    | 127x76x30 |
| CFM-100S150     | 90...264          | 15.0             | 6.7              | 47...63   | 83     | 150    | 127x76x30 |
| CFM-100S180     | 90...264          | 18.0             | 5.6              | 47...63   | 83     | 50     | 127x76x30 |
| CFM-100S240     | 90...264          | 24.0             | 4.2              | 47...63   | 85     | 240    | 127x76x30 |
| CFM-100S480     | 90...264          | 48.0             | 2.1              | 47...63   | 87     | 480    | 127x76x30 |

# PINNING: S4-1, S4-2, S7-1...S7-6, S8, SIL7, SIL 11, SIL12, A1 ... A9

Pinning S4-1  
Single Output



Pinning S4-2  
Single Output

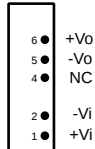


“SIL-4 cases, bottom view

Pinning S7-1  
Single Output



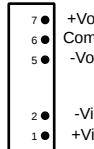
Pinning S7-2  
Single Output



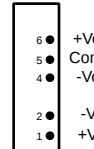
Pinning S7-3  
Single Output



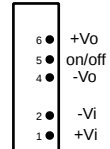
Pinning S7-4  
Dual Output



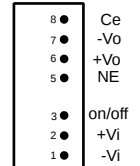
Pinning S7-5  
Dual Output



Pinning S7-6  
Single Output

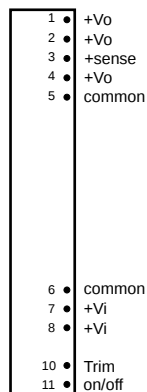


Pinning S8  
Single Output

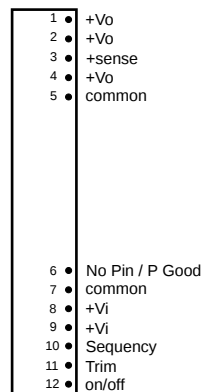


“SIL-7” and “SIL-8” cases, bottom view

Pinning SIL-11

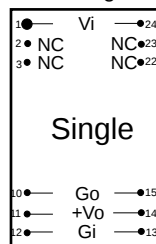


Pinning SIL-12

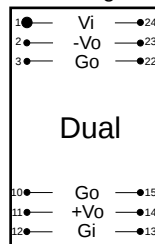


“SIL-11” cases, bottom view

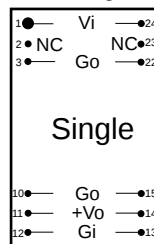
Pinning A1



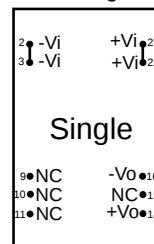
Pinning A2



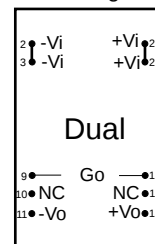
Pinning A3



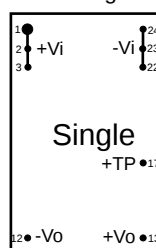
Pinning A4



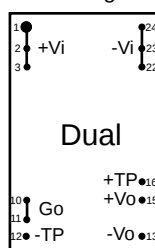
Pinning A5



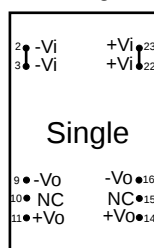
Pinning A6



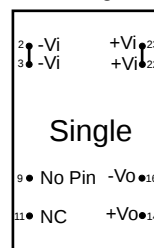
Pinning A7



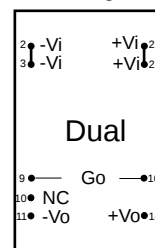
Pinning A8



Pinning A9



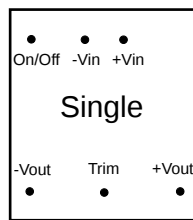
Pinning A10



“A” cases, view from top

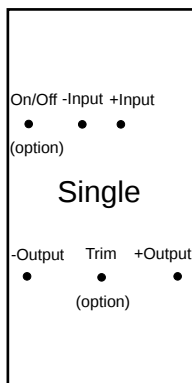
## PINNING: B1, B1, B2, B3, B4, BC1, BC2,

Pinning SB1

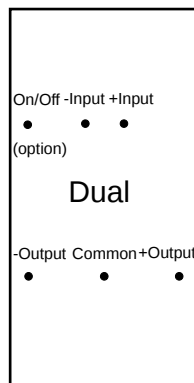


**"SB" cases, bottom view**

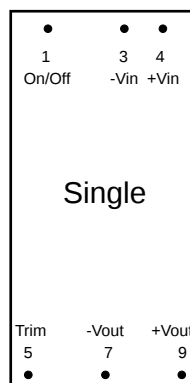
Pinning B1



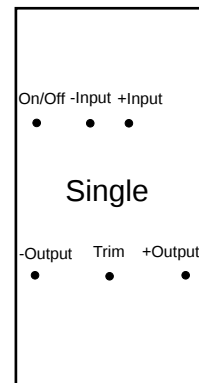
Pinning B2



Pinning B3

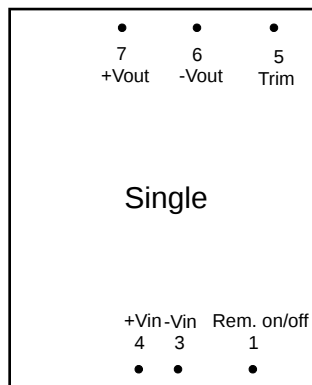


Pinning B4

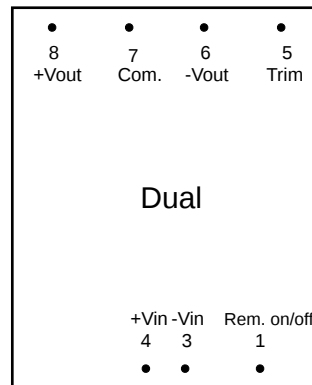


**"B" cases, bottom view**

Pinning BC1

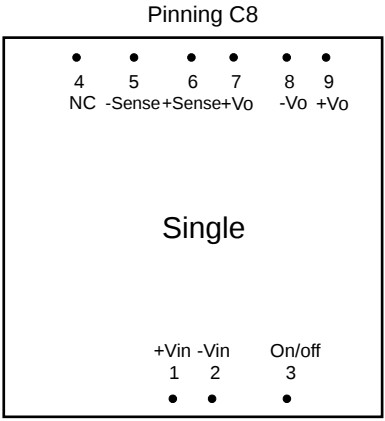
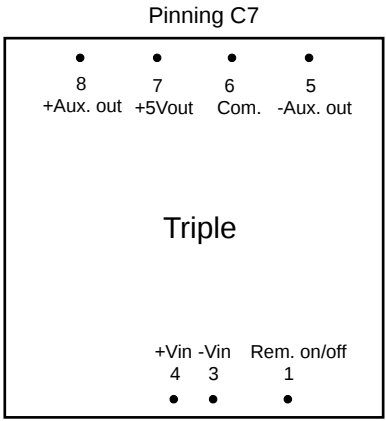
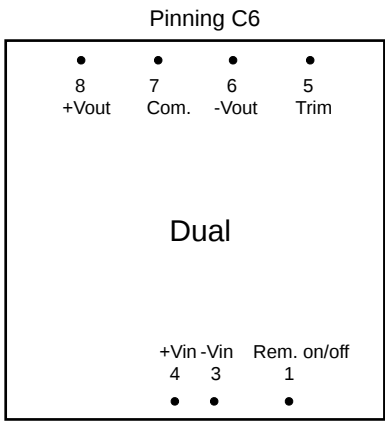
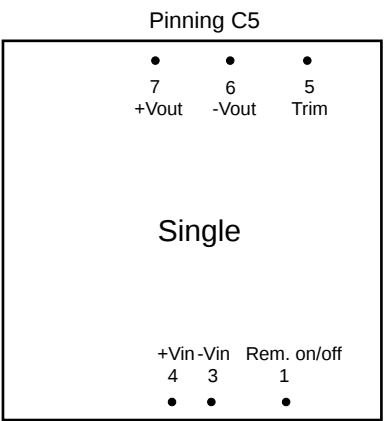
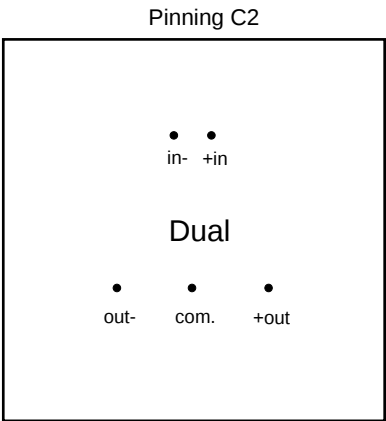
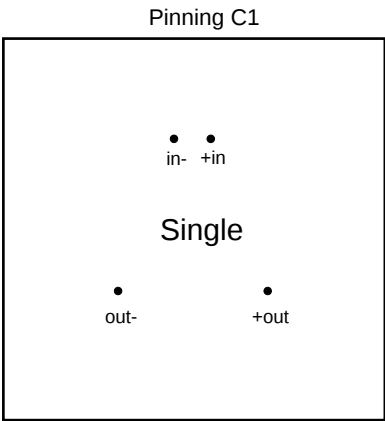


Pinning BC2



**"BC" cases, bottom view**

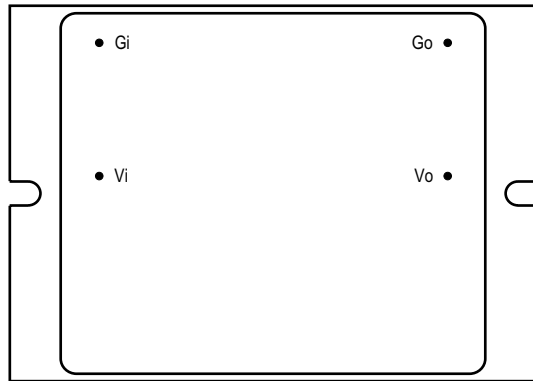
PINNING: C1, C2, C5, C6, C7, C8



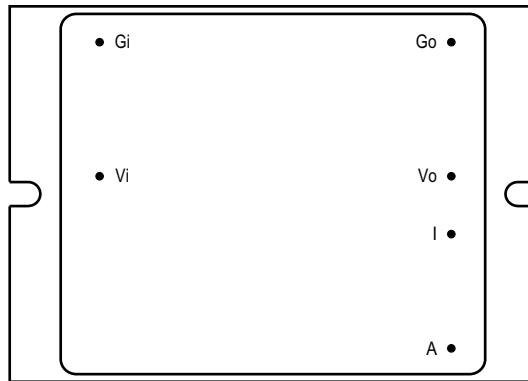
"C" cases, bottom view

## PINNING: F1, F2, E1, E2, E3

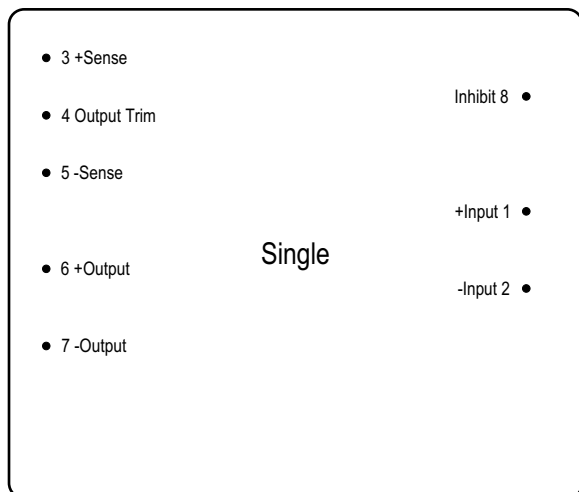
Pinning F1



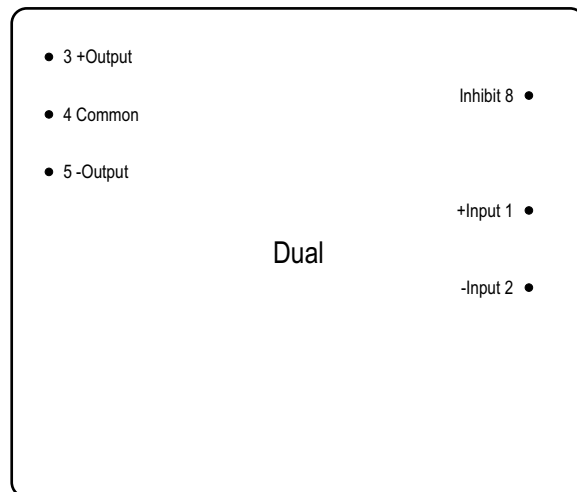
Pinning F2



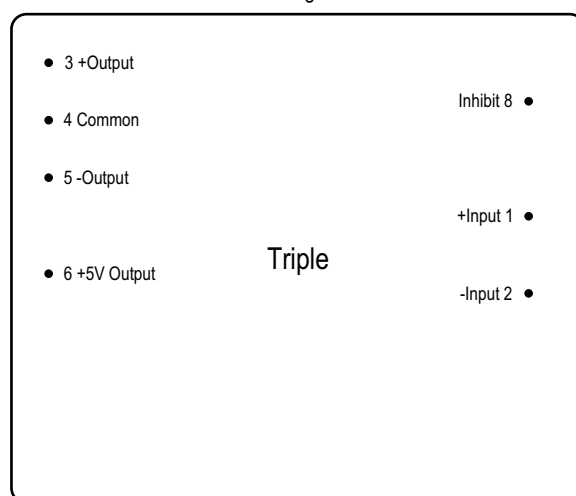
Pinning E1



Pinning E2



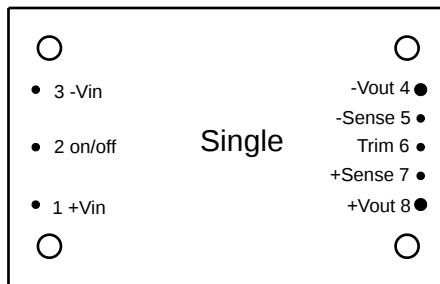
Pinning E3



All cases view from bottom

# PINNING: HB1, HB2, FB1

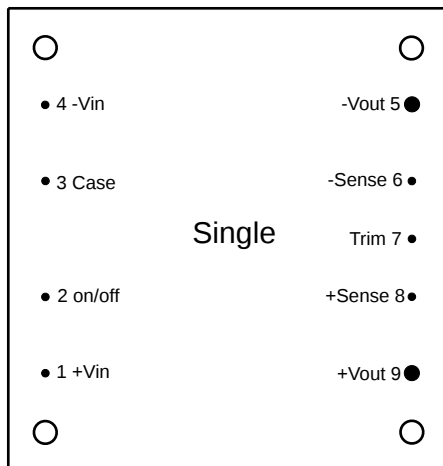
Pinning QB1



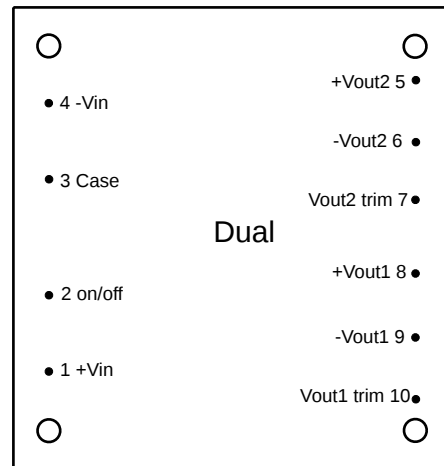
Pinning QB2



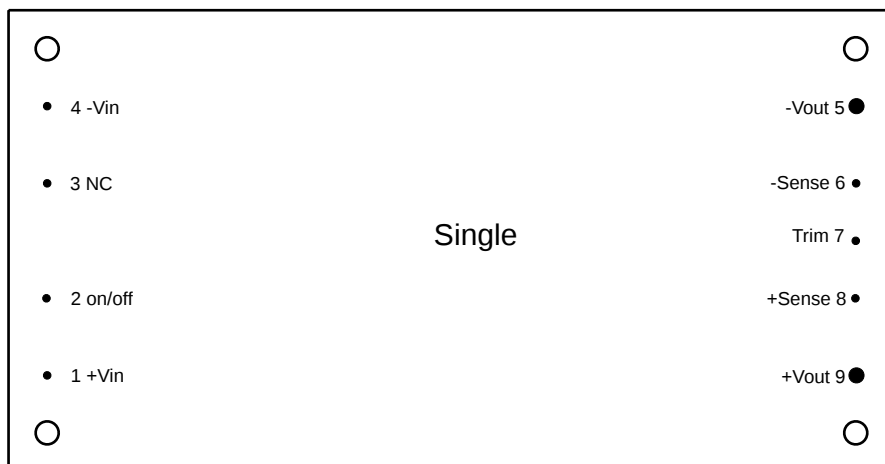
Pinning HB1



Pinning HB2



Pinning FB1



Brick cases, bottom view



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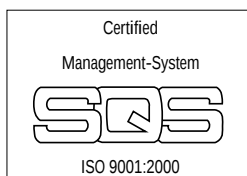
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