

## DC/DC Wide Input Converter ECW 15 Series



- \* Input to output isolation of 500 Vdc
- \* Pi-filter at input
- \* Continuous short circuit proof
- \* No derating up to 70°C
- \* Low output ripple and spikes
- \* Low silhouette
- \* Metal case with a non conductive base plate, six-sides shielded
- \* SMD technology

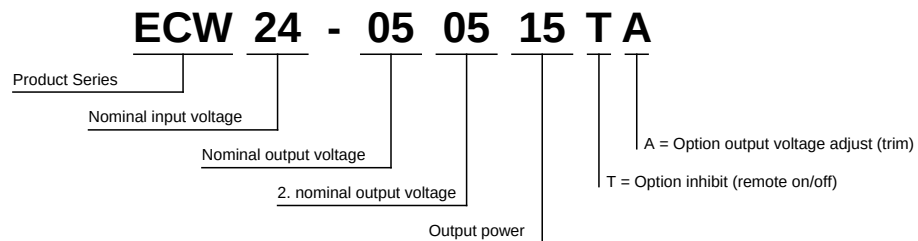
### Product Range

| Model         | Input<br>nominal | Input<br>range | lin @ Uin nom.<br>full load | no load | Uout   | Output<br>Iout max. | power | Efficiency<br>typ. | Max.<br>capacity |
|---------------|------------------|----------------|-----------------------------|---------|--------|---------------------|-------|--------------------|------------------|
| <b>Single</b> |                  |                |                             |         |        |                     |       |                    |                  |
| ECW12-0315    | 12VDC            | 9...18VDC      | 1.178A                      | 30mA    | 3.3VDC | 3.0A                | 10W   | 70%                |                  |
| ECW12-0515    | 12VDC            | 9...18VDC      | 1.660A                      | 30mA    | 5.1VDC | 3.0A                | 15W   | 75%                |                  |
| ECW12-1215    | 12VDC            | 9...18VDC      | 1.625A                      | 30mA    | 12VDC  | 1.25A               | 15W   | 78%                |                  |
| ECW12-1515    | 12VDC            | 9...18VDC      | 1.625A                      | 30mA    | 15VDC  | 1.0A                | 15W   | 78%                |                  |
| ECW24-0315    | 24VDC            | 18...36VDC     | 0.557A                      | 15mA    | 3.3VDC | 3.0A                | 10W   | 74%                |                  |
| ECW24-0515    | 24VDC            | 18...36VDC     | 0.812A                      | 15mA    | 5.1VDC | 3.0A                | 15W   | 78%                |                  |
| ECW24-1215    | 24VDC            | 18...36VDC     | 0.772A                      | 20mA    | 12VDC  | 1.25A               | 15W   | 81%                |                  |
| ECW24-1515    | 24VDC            | 18...36VDC     | 0.772A                      | 20mA    | 15VDC  | 1.0A                | 15W   | 81%                |                  |
| ECW48-0315    | 48VDC            | 36...72VDC     | 0.217A                      | 20mA    | 3.3VDC | 3.0A                | 10W   | 76%                |                  |
| ECW48-0515    | 48VDC            | 36...72VDC     | 0.390A                      | 10mA    | 5.1VDC | 3.0A                | 15W   | 80%                |                  |
| ECW48-1215    | 48VDC            | 36...72VDC     | 0.381A                      | 20mA    | 12VDC  | 1.25A               | 15W   | 82%                |                  |
| ECW48-1515    | 48VDC            | 36...72VDC     | 0.381A                      | 20mA    | 15VDC  | 1.0A                | 15W   | 82%                |                  |

## Dual

|              |       |            |        |      |                    |                    |              |     |
|--------------|-------|------------|--------|------|--------------------|--------------------|--------------|-----|
| ECW12-050515 | 12VDC | 9...18VDC  | 1.620A | 35mA | +5.1VDC<br>-5.1VDC | +1.5A<br>-1.5A     | 7.5W<br>7.5W | 77% |
| ECW12-121215 | 12VDC | 9...18VDC  | 1.620A | 35mA | -12VDC<br>-12VDC   | +0.625A<br>-0.625A | 7.5W<br>7.5W | 77% |
| ECW12-151515 | 12VDC | 9...18VDC  | 1.620A | 35mA | +15VDC<br>-15VDC   | +0.5A<br>-0.5A     | 7.5W<br>7.5W | 77% |
| ECW24-050515 | 24VDC | 18...36VDC | 0.780A | 25mA | +5.1VDC<br>-5.1VDC | +1.5A<br>-1.5A     | 7.5W<br>7.5W | 80% |
| ECW24-121215 | 24VDC | 18...36VDC | 0.780A | 25mA | +12VDC<br>-12VDC   | +0.625A<br>-0.625A | 7.5W<br>7.5W | 80% |
| ECW24-151515 | 24VDC | 18...36VDC | 0.780A | 25mA | +15VDC<br>-15VDC   | +0.5A<br>-0.5A     | 7.5W<br>7.5W | 80% |
| ECW48-050515 | 48VDC | 36...72VDC | 0.386A | 20mA | +5.1VDC<br>-5.1VDC | +1.5A<br>-1.5A     | 7.5W<br>7.5W | 81% |
| ECW48-121215 | 48VDC | 36...72VDC | 0.386A | 20mA | +12VDC<br>-12VDC   | +0.625A<br>-0.625A | 7.5W<br>7.5W | 81% |
| ECW48-151515 | 48VDC | 36...72VDC | 0.386A | 20mA | +15VDC<br>-15VDC   | +0.5A<br>-0.5A     | 7.5W<br>7.5W | 81% |

## Nomenclature



## Specifications

All values refer to an ambient temperature of 25°C and nominal rated values where nothing else is specified.

### Input Specifications

| Characteristic                   | Conditions | min | typ     | max   | unit |
|----------------------------------|------------|-----|---------|-------|------|
| $U_{IN}$ Input voltage           |            | See | product | range | V    |
| $U_{UVLO}$ Under voltage lockout |            |     |         |       | V    |
| Max. input current at full load  |            | See | product | range | A    |
| No load input current            |            | See | product | range | mA   |

### Output Specifications

| Characteristic                    | Conditions                  | min                     | typ        | max       | unit    |
|-----------------------------------|-----------------------------|-------------------------|------------|-----------|---------|
| $U_{ACC}$ Output voltage accuracy |                             | s: $\pm 1$ , d: $\pm 3$ |            |           | %       |
| Output voltage adjust             |                             |                         |            |           | %       |
| Line regulation                   |                             |                         |            | $\pm 0.2$ | %       |
| Load regulation                   | 25% / 100% step load change |                         |            | $\pm 1$   | %       |
| Load transient recovery time      | 25% / 100% step load change |                         | <500       |           | $\mu s$ |
| Load transient error band         |                             |                         | $\pm 1$    |           | %       |
| Temperature coefficient           |                             |                         | $\pm 0.02$ |           | %/K     |
| Ramp up time                      |                             |                         |            |           | ms      |
| Start up time                     |                             |                         |            |           | ms      |
| Ripple and noise                  | BW = 20MHz                  |                         | 75         |           | mVpp    |

|  |                              |  |                            |        |
|--|------------------------------|--|----------------------------|--------|
|  | Current limit                |  |                            | % Inom |
|  | Over voltage protection      |  |                            | % Unom |
|  | Short circuit protection     |  |                            | % Inom |
|  | Short circuit characteristic |  | indefinite & Current Limit |        |

#### General Specifications

| Characteristic   |                      | Conditions | min                  | typ | max | unit |
|------------------|----------------------|------------|----------------------|-----|-----|------|
| U <sub>ISO</sub> | Isolation voltage    |            | 500                  |     |     | Vdc  |
| R <sub>ISO</sub> | Isolation resistance |            | > 1G                 |     |     | Ohm  |
| F <sub>SW</sub>  | Switching frequency  |            | 200                  |     |     | kHz  |
|                  | Approvals            |            |                      |     |     |      |
|                  | Safety Approvals     |            |                      |     |     |      |
|                  | MTBF                 |            | >1'000'000           |     |     | h    |
|                  | Case material        |            | Copper, black coated |     |     |      |
|                  | Compound material    |            |                      |     |     |      |
|                  | PCB material         |            |                      |     |     |      |
|                  | Weight               |            | 57                   |     |     | gr   |
|                  | Dimensions           |            | 50.8 x 50.8 x 10.2   |     |     | mm   |
|                  | Soldering infos      |            | 275°C for 10         |     |     | s    |

#### EMC Specifications

| Characteristic |               | Conditions          | min                | typ | max | unit |
|----------------|---------------|---------------------|--------------------|-----|-----|------|
|                | EMC conducted | See EMC information | EN55022/11 Class B |     |     |      |

#### Environmental Specifications

| Characteristic   |                        | Conditions | min        | typ | max | unit |
|------------------|------------------------|------------|------------|-----|-----|------|
| T <sub>AMB</sub> | Operation temperature  |            | -25...+70  |     |     | °C   |
| T <sub>AMB</sub> | Storage temperature    |            | -40...+100 |     |     | °C   |
| T <sub>SD</sub>  | Thermal shutdown range |            | 100        |     |     | °C   |

Own notes

## EMC information

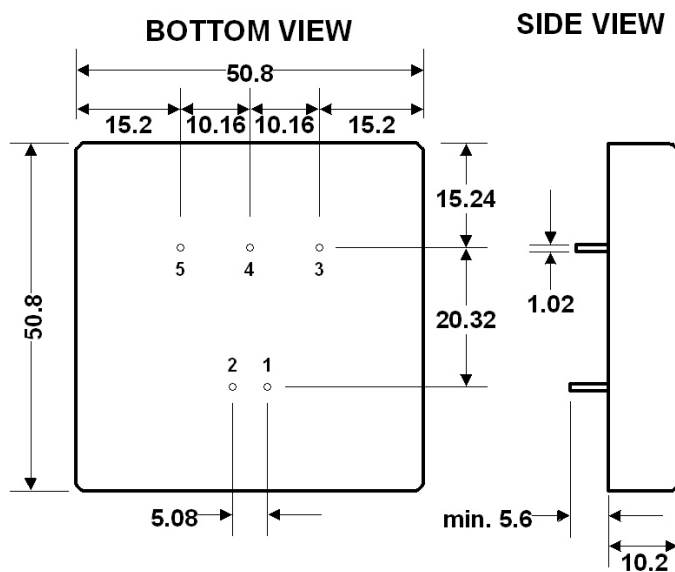
No EMC graph available yet, please contact factory

No EMC filter available yet, please contact factory

## Case

Normal tolerance 1/10  $\pm 0.5$  mm, 1/100  $\pm 0.25$  mm; Pin tolerance  $\pm 0.05$  mm diameter

NP = No pin, NC = Not connected, NA = Not available for electrical contact, do not connect



| Pin | Single | Dual | Pin |
|-----|--------|------|-----|
| 1   | -Vi    | -Vi  | 1   |
| 2   | +Vi    | +Vi  | 2   |
| 3   | -Vo    | -Vo  | 3   |
| 4   | NP     | Com  | 4   |
| 5   | +Vo    | +Vo  | 5   |

## Cleaning

The modules are cleanable with the today's known and in the electronics industry usually used products. Due to the different cleaning processes and new available products, we highly recommend to do a compatibility test when using the converters the first time.

Notice: All statements, technical information, and recommendations related to FABRIMEX's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use.

Switzerland:  
FABRIMEX AG - Techcenterstr. 2  
CH-8608 Bubikon  
Tel: +41 55 253 31 90 - Fax: +41 55 253 31 91  
[www.fabrimex.com](http://www.fabrimex.com)  
[info@fabrimex.ch](mailto:info@fabrimex.ch)



**FABRIMEX**  
POWER SUPPLIES

Germany:  
CAC FABRIMEX GmbH - Karlstrasse 70  
D-89543 Gerstetten  
Tel: +49 7323 95000 - Fax: +49 7323 95050  
[www.fabrimex.de](http://www.fabrimex.de)  
[info@cac-fabrimex-ger.de](mailto:info@cac-fabrimex-ger.de)