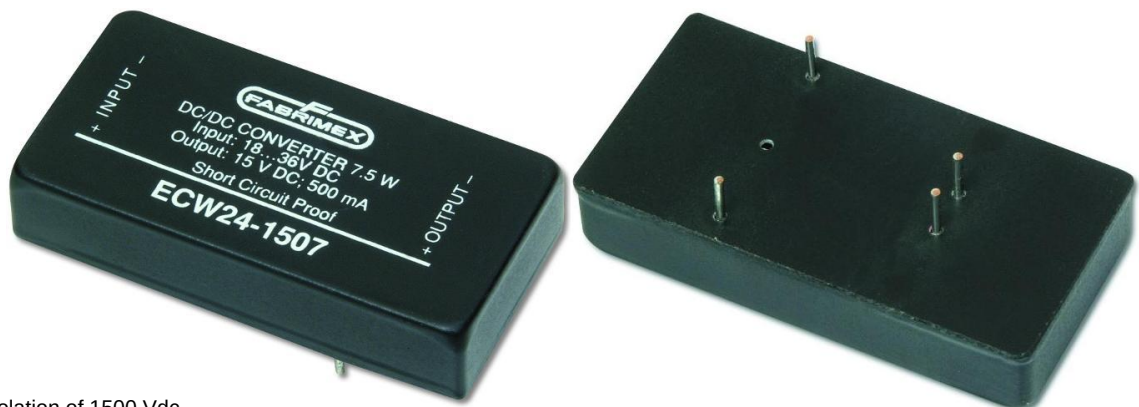


**EOL**

## DC/DC Wide Input Converter ECW 07 Series



- \* Input to output isolation of 1500 Vdc
- \* Pi-filter at input
- \* Continuous short circuit proof
- \* No derating up to 70°C
- \* Low output ripple and noise
- \* Low silhouette
- \* Metal case with a non conductive base plate, six sides shielded
- \* Inhibit as option

### Product Range

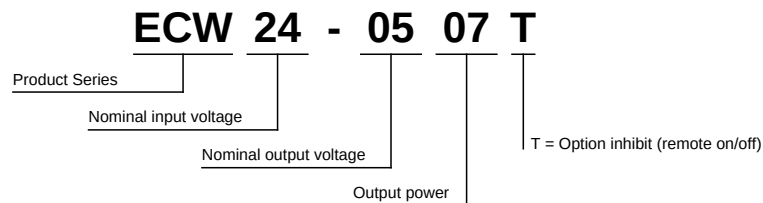
| Model         | Input<br>nominal | Input<br>range | lin @ Uin nom.<br>full load | lin @ Uin nom.<br>no load | Uout   | Output<br>Iout max. | power | Efficiency<br>typ. | Max.<br>capacity |
|---------------|------------------|----------------|-----------------------------|---------------------------|--------|---------------------|-------|--------------------|------------------|
| <b>Single</b> |                  |                |                             |                           |        |                     |       |                    |                  |
| ECW12-0307    | 12Vdc            | 9...18Vdc      | 0.557A                      | 7.5mA                     | 3.3Vdc | 1.5A                | 5W    | 74%                |                  |
| ECW12-0507    | 12Vdc            | 9...18Vdc      | 0.820A                      | 7.5mA                     | 5.1Vdc | 1.5A                | 7.5W  | 76%                |                  |
| ECW12-1207    | 12Vdc            | 9...18Vdc      | 0.780A                      | 7.5mA                     | 12Vdc  | 0.625A              | 7.5W  | 80%                |                  |
| ECW12-1507    | 12Vdc            | 9...18Vdc      | 0.780A                      | 7.5mA                     | 15Vdc  | 0.5A                | 7.5W  | 80%                |                  |
| ECW24-0307    | 24Vdc            | 18...36Vdc     | 0.271A                      | 5mA                       | 3.3Vdc | 1.5A                | 5W    | 76%                |                  |
| ECW24-0507    | 24Vdc            | 18...36Vdc     | 0.400A                      | 5mA                       | 5.1Vdc | 1.5A                | 7.5W  | 78%                |                  |
| ECW24-1207    | 24Vdc            | 18...36Vdc     | 0.380A                      | 5mA                       | 12Vdc  | 0.625A              | 7.5W  | 82%                |                  |
| ECW24-1507    | 24Vdc            | 18...36Vdc     | 0.380A                      | 5mA                       | 15Vdc  | 0.5A                | 7.5W  | 82%                |                  |
| ECW48-0307    | 48Vdc            | 36...72Vdc     | 0.136A                      | 3mA                       | 3.3Vdc | 1.5A                | 5W    | 76%                |                  |
| ECW48-0507    | 48Vdc            | 36...72Vdc     | 0.200A                      | 2mA                       | 5.1Vdc | 1.5A                | 7.5W  | 78%                |                  |
| ECW48-1207    | 48Vdc            | 36...72Vdc     | 0.192A                      | 2mA                       | 12Vdc  | 0.625A              | 7.5W  | 81%                |                  |
| ECW48-1507    | 48Vdc            | 36...72Vdc     | 0.192A                      | 2mA                       | 15Vdc  | 0.5A                | 7.5W  | 81%                |                  |

**End Of Life**

## Dual

|              |       |            |        |       |                    |                  |                |     |
|--------------|-------|------------|--------|-------|--------------------|------------------|----------------|-----|
| ECW12-050507 | 12Vdc | 9...18Vdc  | 0.820A | 7.5mA | +5.1VDC<br>-5.1VDC | +0.75A<br>-0.75A | 3.75W<br>3.75W | 76% |
| ECW12-121207 | 12Vdc | 9...18Vdc  | 0.775A | 12mA  | -12Vdc<br>-12Vdc   | +0.31A<br>-0.31A | 3.75W<br>3.75W | 80% |
| ECW12-151507 | 12Vdc | 9...18Vdc  | 0.780A | 12mA  | +15Vdc<br>-15Vdc   | +0.25A<br>-0.25A | 3.75W<br>3.75W | 80% |
| ECW24-050507 | 24Vdc | 18...36Vdc | 0.400A | 7.5mA | +5.1VDC<br>-5.1VDC | +0.75A<br>-0.75A | 3.75W<br>3.75W | 78% |
| ECW24-121207 | 24Vdc | 18...36Vdc | 0.385A | 7.5mA | +12Vdc<br>-12Vdc   | +0.31A<br>-0.31A | 3.75W<br>3.75W | 81% |
| ECW24-151507 | 24Vdc | 18...36Vdc | 0.385A | 7.5mA | +15Vdc<br>-15Vdc   | +0.25A<br>-0.25A | 3.75W<br>3.75W | 81% |
| ECW48-050507 | 48Vdc | 36...72Vdc | 0.200A | 3mA   | +5.1VDC<br>-5.1VDC | +0.75A<br>-0.75A | 3.75W<br>3.75W | 78% |
| ECW48-121207 | 48Vdc | 36...72Vdc | 0.192A | 3mA   | +12Vdc<br>-12Vdc   | +0.31A<br>-0.31A | 3.75W<br>3.75W | 81% |
| ECW48-151507 | 48Vdc | 36...72Vdc | 0.192A | 3mA   | +15Vdc<br>-15Vdc   | +0.25A<br>-0.25A | 3.75W<br>3.75W | 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 | Vdc              |
| $U_{UVLO}$ Under voltage lockout |            |     |         |       | Vdc              |
| Max. input current at full load  |            | See | product | range | A                |
| No load input current            |            | See | product | range | mA               |
| Inrush current                   |            |     |         |       | A <sup>2</sup> s |
| Input surge voltage              |            |     |         |       | Vdc              |

### Output Specifications

| Characteristic                    | Conditions                  | min            | typ   | max | unit |
|-----------------------------------|-----------------------------|----------------|-------|-----|------|
| $U_{ACC}$ Output voltage accuracy |                             |                | ±2    |     | %    |
| Output voltage adjust             |                             |                |       |     | %    |
| Line regulation                   |                             |                | ±0.5  |     | %    |
| Load regulation                   | 25% / 100% step load change | s: ±0.5, d: ±1 |       |     | %    |
| Cross regulation                  |                             |                |       |     | %    |
| Load transient recovery time      | 25% / 100% step load change |                |       |     | µs   |
| Load transient error band         |                             |                |       |     | %    |
| Temperature coefficient           |                             |                | ±0.05 |     | %/K  |

## End Of Life

|  |                              |            |                             |        |
|--|------------------------------|------------|-----------------------------|--------|
|  | Ramp up time                 |            |                             | ms     |
|  | Start up time                |            |                             | ms     |
|  | Ripple and noise             | BW = 20MHz | 3.3V/5.1V: 100, 12V/15V: 1% | mVpp   |
|  | Current limit                |            |                             | % Inom |
|  | Over voltage protection      |            |                             | % Unom |
|  | Short circuit protection     |            |                             | % Inom |
|  | Short circuit characteristic |            | continuous                  |        |

#### General Specifications

| Characteristic   |                      | Conditions | min | typ                         | max | unit |
|------------------|----------------------|------------|-----|-----------------------------|-----|------|
| U <sub>ISO</sub> | Isolation voltage    |            |     | 1500                        |     | Vdc  |
| R <sub>ISO</sub> | Isolation resistance |            |     | > 1G                        |     | Ohm  |
| C <sub>ISO</sub> | Isolation capacity   |            |     |                             |     | pF   |
| F <sub>SW</sub>  | Switching frequency  |            |     | 100                         |     | kHz  |
|                  | Approvals            |            |     |                             |     |      |
|                  | Safety Approvals     |            |     |                             |     |      |
|                  | MTBF                 |            |     | >1'000'000                  |     | h    |
|                  | Case material        |            |     | Copper, black coated        |     |      |
|                  | Compound material    |            |     | Two component resin UL94-V0 |     |      |
|                  | PCB material         |            |     |                             |     |      |
|                  | Weight               |            |     | 32                          |     | gr   |
|                  | Dimensions           |            |     | 50.8 x 25.4 x 10.2          |     | mm   |
|                  | Soldering infos      |            |     | 275°C for 10                |     | s    |

#### EMC Specifications

| Characteristic |               | Conditions          |                    |
|----------------|---------------|---------------------|--------------------|
|                | 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 |            |     |            |     | °C   |

Own notes

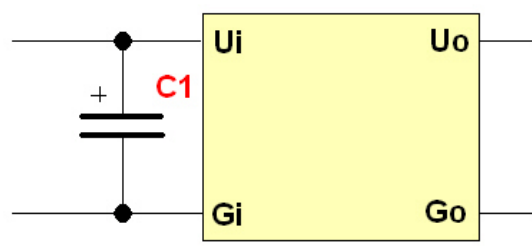
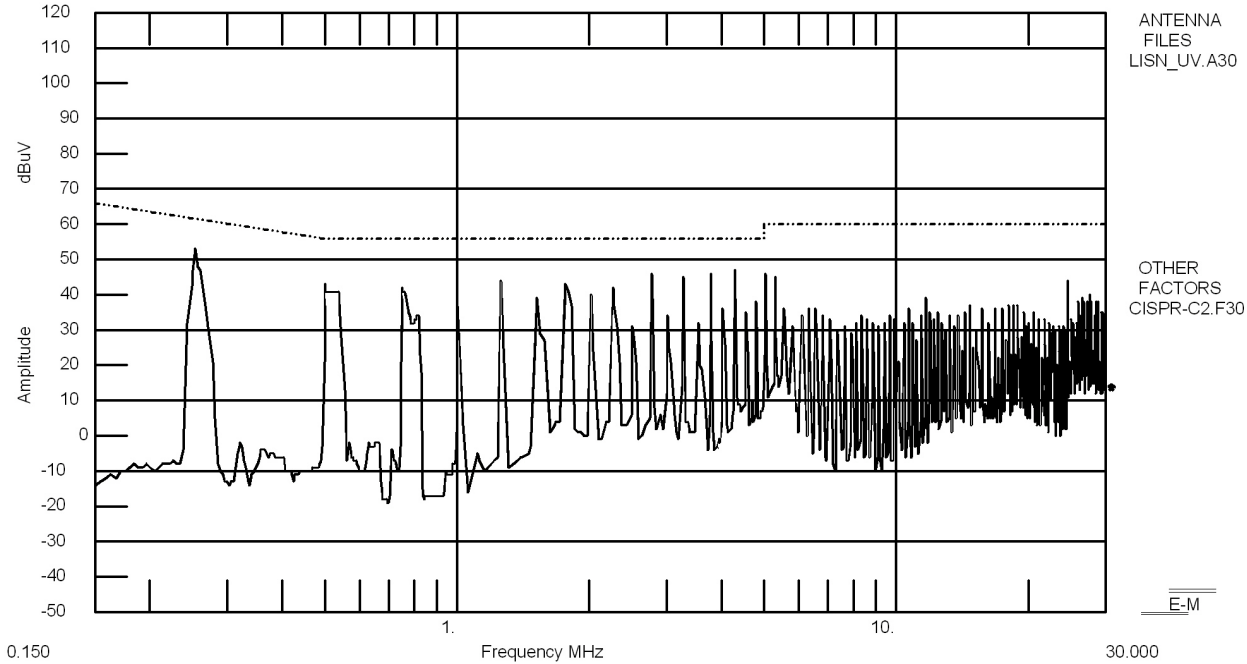
# EMC information

EMC emissions conducted, EN55022/11 Class B, Example:

## Electro-Metrics

| EMV Messung   |                    |               | EMC-30 SETTINGS  |           | SPECS     |
|---------------|--------------------|---------------|------------------|-----------|-----------|
| Date :        | 04/19/00           | Time :        | 12:42:02.56      | Detector  | QuasiPeak |
| Technician :  | Urs Luessi         | Test Equip. : | EMC-30 MK4 44136 | Bandwidth | CISPR     |
| Test Method : | CONDUCTED EMISSION | Test Number : | 1                | Dwell     | N/A       |
| Equipment :   | ECW24-0507         | Sensor Loc. : | +                | RF Atten. | 0 dB      |
| Mode of Op. : |                    | Sensor Pol. : | N/A              | IF Atten. | 0 dB      |
| Serial No. :  |                    | Ext. Atten. : | 0 dB             |           |           |

Comment : with input capacitor 200uF



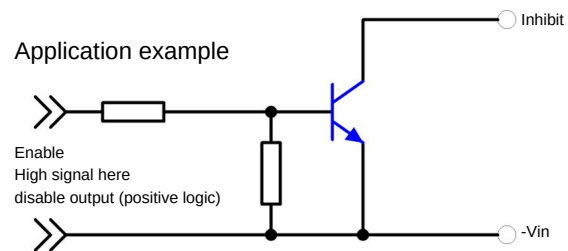
This was achived with the following filter:  
C1 = 220uF

# Inhibit

The ECW 07 Series allows the user to switch the module on and off electronically by inhibit on/off feature.

Logic table (inhibit pin)

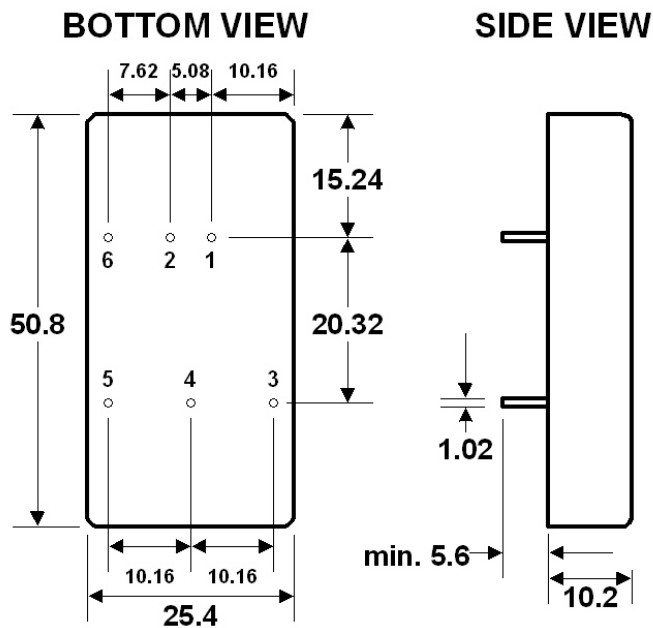
| Logic state | Positive logic |
|-------------|----------------|
| Logic low   | Module off     |
| Logic high  | Module on      |



## 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, (opt) = optional



| Pin | Single | Dual   | Pin |
|-----|--------|--------|-----|
| 1   | +Vi    | +Vi    | 1   |
| 2   | -Vi    | -Vi    | 2   |
| 3   | +Vo    | +Vo    | 3   |
| 4   | NP     | Com    | 4   |
| 5   | -Vo    | -Vo    | 5   |
| 6   | on/off | on/off | 6   |

## 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.

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The logo for EXISTA, featuring the word "EXISTA" in a bold, sans-serif font. The "E" is dark blue, and the "XISTA" part is a lighter blue/cyan color.