

# EC4B

S E R I E S

## 10 WATT WIDE INPUT DC-DC CONVERTERS



### Features

- 10W Isolated output
- Efficiency to 82%
- 2:1 Input Range
- Pi Input Filter
- Continuous Short Circuit Protection
- Meets EN55022 Class A, Conducted

| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT MIN. | OUTPUT CURRENT MAX. | INPUT CURRENT NO LOAD | INPUT CURRENT FULL LOAD | % EFF. | CASE |
|--------------|---------------|----------------|---------------------|---------------------|-----------------------|-------------------------|--------|------|
| EC4B01       | 9-18 VDC      | 5 VDC          | 100 mA              | 2000 mA             | 30 mA                 | 1100 mA                 | 76     | B    |
| EC4B02       |               | 12 VDC         | 45 mA               | 830 mA              | 30 mA                 | 1065 mA                 | 78     |      |
| EC4B03       |               | 15 VDC         | 35 mA               | 666 mA              | 30 mA                 | 1065 mA                 | 78     |      |
| EC4B04       |               | ±12 VDC        | ±25 mA              | ±415 mA             | 40 mA                 | 1065 mA                 | 78     |      |
| EC4B05       |               | ±15 VDC        | ±20 mA              | ±333 mA             | 40 mA                 | 1065 mA                 | 78     |      |
| EC4B06       |               | ±5 VDC         | ±50 mA              | ±1000 mA            | 40 mA                 | 1065 mA                 | 78     |      |
| EC4B11       | 18-36 VDC     | 5 VDC          | 100 mA              | 2000 mA             | 20 mA                 | 535 mA                  | 78     | B    |
| EC4B12       |               | 12 VDC         | 45 mA               | 830 mA              | 20 mA                 | 520 mA                  | 80     |      |
| EC4B13       |               | 15 VDC         | 35 mA               | 666 mA              | 20 mA                 | 520 mA                  | 80     |      |
| EC4B14       |               | ±12 VDC        | ±25 mA              | ±415 mA             | 20 mA                 | 520 mA                  | 80     |      |
| EC4B15       |               | ±15 VDC        | ±20 mA              | ±333 mA             | 20 mA                 | 520 mA                  | 80     |      |
| EC4B16       |               | ±5 VDC         | ±50 mA              | ±1000 mA            | 20 mA                 | 520 mA                  | 80     |      |
| EC4B21       | 36-72 VDC     | 5 VDC          | 100 mA              | 2000 mA             | 10 mA                 | 260 mA                  | 80     | B    |
| EC4B22       |               | 12 VDC         | 45 mA               | 830 mA              | 10 mA                 | 254 mA                  | 82     |      |
| EC4B23       |               | 15 VDC         | 35 mA               | 666 mA              | 10 mA                 | 254 mA                  | 82     |      |
| EC4B24       |               | ±12 VDC        | ±25 mA              | ±415 mA             | 10 mA                 | 254 mA                  | 82     |      |
| EC4B25       |               | ±15 VDC        | ±20 mA              | ±333 mA             | 10 mA                 | 254 mA                  | 82     |      |
| EC4B26       |               | ±5 VDC         | ±50 mA              | ±1000 mA            | 10 mA                 | 254 mA                  | 82     |      |
| EC4B31       | 4.7-9 VDC     | 5 VDC          | 0 mA                | 1600 mA             | 15 mA                 | 2130 mA                 | 75     | B    |
| EC4B32       |               | 12 VDC         | 0 mA                | 666 mA              | 15 mA                 | 2100 mA                 | 76     |      |
| EC4B33       |               | 15 VDC         | 0 mA                | 533 mA              | 15 mA                 | 2100 mA                 | 76     |      |
| EC4B34       |               | ±12 VDC        | 0 mA                | ±333 mA             | 15 mA                 | 2100 mA                 | 76     |      |
| EC4B35       |               | ±15 VDC        | 0 mA                | ±266 mA             | 15 mA                 | 2100 mA                 | 76     |      |
| EC4B36       |               | ±5 VDC         | 0 mA                | ±800 mA             | 15 mA                 | 2100 mA                 | 76     |      |

NOTE: 1. Nominal Input Voltage 5, 12, 24 or 48 VDC

### Specifications

#### INPUT SPECIFICATIONS:

|                          |          |         |
|--------------------------|----------|---------|
| Input Voltage Range..... | 5V.....  | 4.7-9V  |
|                          | 12V..... | 9-18V   |
|                          | 24V..... | 18-36V  |
|                          | 48V..... | 36-72V  |
| Input Filter.....        |          | PI type |

#### OUTPUT SPECIFICATIONS:

|  |  |                |
|--|--|----------------|
| Voltage Accuracy                                     |  |                |
| Single Output.....                                   |  | ±1.0% max.     |
| Dual + Output.....                                   |  | ±1.0% max.     |
| Dual - Output.....                                   |  | ±1.0% max.     |
| Voltage Balance (Dual).....                          |  | ±1.0% max.     |
| Transient Response                                   |  |                |
| Single 25% Step Load Change.....                     |  | <500µ sec.     |
| Dual FL-1/2L ±1% Error Band.....                     |  | <500µ sec.     |
| Ripple and Noise 20MHzBW.....                        |  | 100mV p-p max. |
| Temperature Coefficient.....                         |  | ±0.02%/°C max. |
| Short Circuit Protection.....                        |  | Continuous     |
| Line Regulation <sup>1</sup> Single/Dual Output..... |  | ±0.2%          |
| Load Regulation <sup>2</sup> Single/Dual Output..... |  | ±1.0%          |

#### GENERAL SPECIFICATIONS:

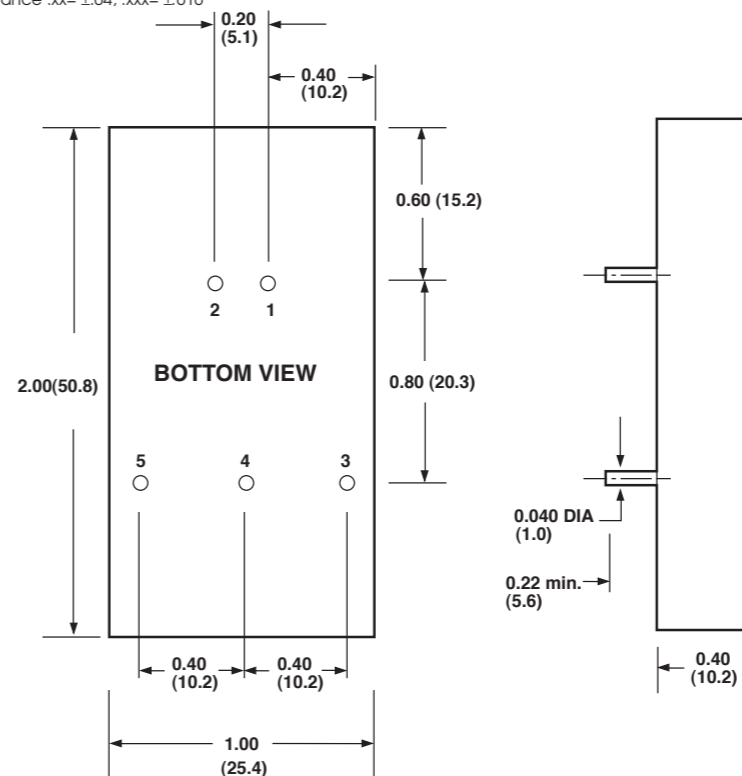
|                                  |  |   |
|----------------------------------|--|---|
| Efficiency.....                  |  | See Table                                       |
| Isolation Voltage.....           |  | 500 VDC min.                                    |
| Isolation Resistance.....        |  | 10 <sup>9</sup> ohms                            |
| Switching Frequency.....         |  | 200KHz, min.                                    |
| Operating Temperature Range..... |  | -25°C to + 71°C                                 |
| Case Temperature.....            |  | 100°C max.                                      |
| Cooling.....                     |  | Free-Air Convection                             |
| Storage Temperature Range.....   |  | -40°C to + 100°C                                |
| EMI/RFI.....                     |  | Six sided Continuous Shield                     |
| Dimensions.....                  |  | 2 x 1 x 0.4 inches<br>(50.8 x 25.4 x 10.2 mm)   |
| Case Material.....               |  | Black Coated Copper with<br>Non-Conductive Base |
| Weight.....                      |  | 0.35g   |

#### NOTE:

1. Measured From High Line to Low Line
2. Measured From Full Load to 1/4 Load
3. A Minimum Load On the Output is Necessary to Maintain Regulation

### CASE B

All Dimensions in Inches(mm)  
Tolerance .xx= ±0.04, .xxx= ±0.10



| PIN CONNECTION |           |
|----------------|-----------|
| Pin            | Function  |
| 1.             | +Input    |
| 2.             | -Input    |
| 3.             | +Output   |
| 4.             | Common/NP |
| 5.             | -Output   |

NP\*-NO PIN ON SINGLE OUTPUT