



# EC7B SERIES

## 20 WATT 2:1 INPUT RANGE

## DC-DC CONVERTERS



### FEATURES

- \* 20W Isolated Output
- \* Efficiency to 90%
- \* Fixed Switching Frequency
- \* 2:1 Input Range
- \* Regulated Outputs
- \* Continuous Short Circuit Protection
- \* Pi Input Filter
- \* CE Mark Meets 2004/108/EC
- \* UL60950-1 Approval



| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT |         | INPUT CURRENT |           | % EFF. | CAPACITOR LOAD MAX. |
|--------------|---------------|----------------|----------------|---------|---------------|-----------|--------|---------------------|
|              |               |                | MIN.           | MAX.    | NO LOAD       | FULL LOAD |        |                     |
| EC7B-12D12   | 9-18 VDC      | ±12 VDC        | 42 mA          | ±835 mA | 40 mA         | 1856 mA   | 90     | 1000uF              |
| EC7B-12D15   | 9-18 VDC      | ±15 VDC        | 33 mA          | ±670 mA | 40 mA         | 1861 mA   | 90     | 800uF               |
| EC7B-24S18   | 18-36 VDC     | 1.8 VDC        | 0 mA           | 6000 mA | 30 mA         | 523 mA    | 86     | 6000uF              |
| EC7B-24S25   | 18-36 VDC     | 2.5 VDC        | 0 mA           | 6000 mA | 30 mA         | 710 mA    | 88     | 6000uF              |
| EC7B-24S33   | 18-36 VDC     | 3.3 VDC        | 0 mA           | 5000 mA | 40 mA         | 764 mA    | 90     | 5000uF              |
| EC7B-24S05   | 18-36 VDC     | 5 VDC          | 0 mA           | 4000 mA | 60 mA         | 926 mA    | 90     | 4000uF              |
| EC7B-24S12   | 18-36 VDC     | 12 VDC         | 0 mA           | 1670 mA | 20 mA         | 928 mA    | 90     | 2000uF              |
| EC7B-24S15   | 18-36 VDC     | 15 VDC         | 0 mA           | 1330 mA | 20 mA         | 924 mA    | 90     | 2000uF              |
| EC7B-24D12   | 18-36 VDC     | ±12 VDC        | 42 mA          | ±835 mA | 20 mA         | 928 mA    | 90     | 1000uF              |
| EC7B-24D15   | 18-36 VDC     | ±15 VDC        | 33 mA          | ±670 mA | 20 mA         | 930 mA    | 90     | 800uF               |
| EC7B-48S18   | 36-75 VDC     | 1.8 VDC        | 0 mA           | 6000 mA | 30 mA         | 262 mA    | 86     | 6000uF              |
| EC7B-48S25   | 36-75 VDC     | 2.5 VDC        | 0 mA           | 6000 mA | 30 mA         | 359 mA    | 87     | 6000uF              |
| EC7B-48S33   | 36-75 VDC     | 3.3 VDC        | 0 mA           | 5000 mA | 30 mA         | 386 mA    | 89     | 5000uF              |
| EC7B-48S05   | 36-75 VDC     | 5 VDC          | 0 mA           | 4000 mA | 40 mA         | 463 mA    | 90     | 4000uF              |
| EC7B-48S12   | 36-75 VDC     | 12 VDC         | 0 mA           | 1670 mA | 15 mA         | 469 mA    | 89     | 2000uF              |
| EC7B-48S15   | 36-75 VDC     | 15 VDC         | 0 mA           | 1330 mA | 15 mA         | 472 mA    | 88     | 2000uF              |
| EC7B-48D12   | 36-75 VDC     | ±12 VDC        | 42 mA          | ±835 mA | 10 mA         | 464 mA    | 90     | 1000uF              |
| EC7B-48D15   | 36-75 VDC     | ±15 VDC        | 33 mA          | ±670 mA | 10 mA         | 471 mA    | 89     | 800uF               |

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

# SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

|                                  |                  |             |
|----------------------------------|------------------|-------------|
| Input Voltage Range              | 12V              | 9 - 18V     |
|                                  | 24V              | 18 - 36V    |
|                                  | 48V              | 36 - 75V    |
| Input Surge Voltage (100ms max.) | 12V              | 25Vdc max.  |
|                                  | 24V              | 50Vdc max.  |
|                                  | 48V              | 100Vdc max. |
| Under Voltage Lockout            | 12Vin power up   | 8.8V        |
|                                  | 12Vin power down | 8.0V        |
|                                  | 24Vin power up   | 17V         |
|                                  | 24Vin power down | 16V         |
|                                  | 48Vin power up   | 34V         |
|                                  | 48Vin power down | 33V         |

Positive Logic Remote ON/OFF (see note3&4)

Input Filter ..... Pi Type

## OUTPUT SPECIFICATIONS:

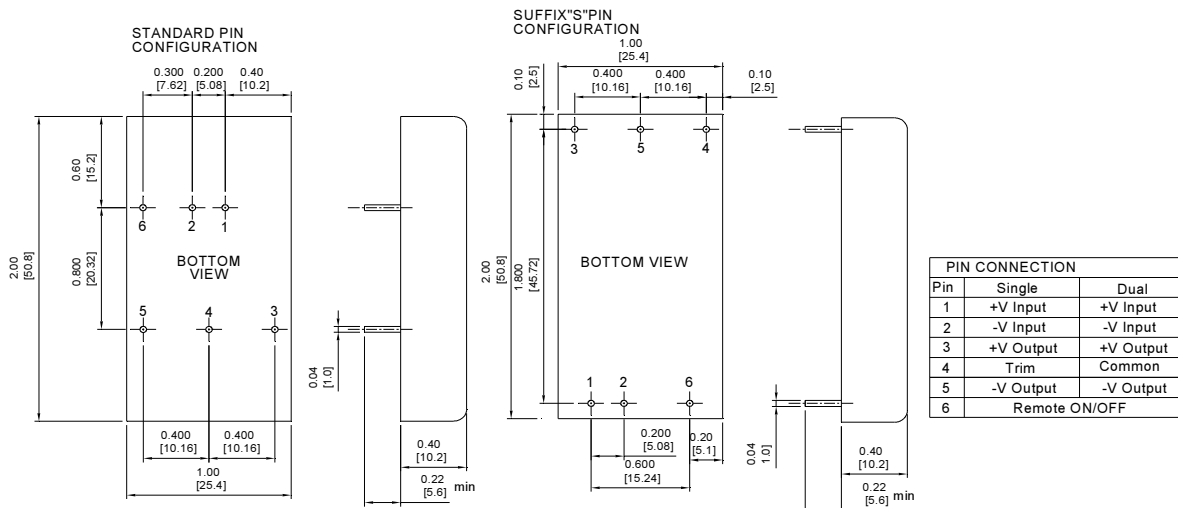
|                        |            |
|------------------------|------------|
| Voltage Accuracy       | ±1.5% max. |
| Voltage Balance (Dual) | ±2.0% max. |

Transient Response: 75% - 100% Step Load Change

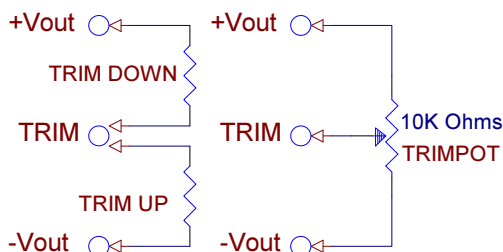
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|-----------------------------------------------------|---------------------------------|--------------------|
| Error Band                                          | ±5% Vout nominal, Recovery Time | <500us             |
| Ripple & Noise, 20MHz BW (Measured with 0.1uF MLCC) |                                 | 75mVpk-pk, max.    |
| Temperature Coefficient                             |                                 | ±0.03%/°C          |
| Line Regulation (note1)                             | Single                          | ±0.2% max.         |
|                                                     | Dual                            | ±0.5% max.         |
| Load Regulation (note2)                             | Single/Dual                     | ±1.0% max.         |
| Over Voltage Protection                             |                                 | Zener or TVS Clamp |
| Output Short Circuit Protection                     |                                 | Continuous         |
| External Trim Adj. Range                            | Single                          | ±10%               |
| Start up time                                       | EC7B-24S12/15                   | 13ms typ.          |
|                                                     | EC7B-48S12/15                   | 22ms typ.          |
|                                                     | Other                           | 5ms typ.           |

## Case B Dimensions:

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm) DIA  
All Dimensions In Inches (mm)  
Tolerances Inches: X.XX= ±.04, X.XXX= ±.010  
Millimeters: X.X= ±1.0, X.XX= ±0.25



## EXTERNAL OUTPUT TRIM



Typical Derating curve for Natural Convection

