



ECLB40W SERIES 40 WATT 4:1 INPUT DC-DC CONVERTERS



FEATURES

- * 40W Isolated Output
- * Efficiency to 91%
- * 2.05"x1.2x0.4" Six-Sided Shield Metal Case
- * 4:1 Input Range
- * Regulated Outputs
- * Fixed Switching Frequency
- * Low No Load Power Consumption
- * Input Under Voltage Protection
- * Over Current Protection
- * Remote On/Off
- * Continuous Short Circuit Protection
- * No Tantalum Capacitor Inside
- * Safety Meets IEC/EN/UL 62368-1



| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | | INPUT CURRENT | | % EFF. | | CAPACITOR LOAD MAX. |
|---------------|---------------|----------------|----------------|---------------|---------------|-----------|--------|------|---------------------|
| | | | MIN. | MAX. | NO LOAD | FULL LOAD | (3) | (2) | |
| ECLB40W-24S33 | 9-36 VDC | 3.3 VDC | 0 mA | 10000 mA | 8 mA | 1528 mA | 88.5 | 90 | 10000 μ F |
| ECLB40W-24S05 | 9-36 VDC | 5 VDC | 0 mA | 8000 mA | 8 mA | 1842 mA | 89.5 | 90.5 | 8000 μ F |
| ECLB40W-24S12 | 9-36 VDC | 12 VDC | 0 mA | 3333 mA | 10 mA | 1832 mA | 90.5 | 91 | 3300 μ F |
| ECLB40W-24S15 | 9-36 VDC | 15 VDC | 0 mA | 2666 mA | 10 mA | 1842 mA | 90.5 | 90.5 | 2700 μ F |
| ECLB40W-24D12 | 9-36 VDC | \pm 12 VDC | 0 mA | \pm 1667 mA | 10 mA | 1873 mA | 89.5 | 89 | 1650 μ F |
| ECLB40W-24D15 | 9-36 VDC | \pm 15 VDC | 0 mA | \pm 1333 mA | 10 mA | 1862 mA | 90 | 89.5 | 1350 μ F |
| ECLB40W-48S33 | 18-75 VDC | 3.3 VDC | 0 mA | 10000 mA | 6 mA | 764 mA | 89 | 90 | 10000 μ F |
| ECLB40W-48S05 | 18-75 VDC | 5 VDC | 0 mA | 8000 mA | 6 mA | 921 mA | 90 | 90.5 | 8000 μ F |
| ECLB40W-48S12 | 18-75 VDC | 12 VDC | 0 mA | 3333 mA | 8 mA | 921 mA | 91.5 | 90.5 | 3300 μ F |
| ECLB40W-48S15 | 18-75 VDC | 15 VDC | 0 mA | 2666 mA | 8 mA | 921 mA | 91 | 90.5 | 2700 μ F |
| ECLB40W-48D12 | 18-75 VDC | \pm 12 VDC | 0 mA | \pm 1667 mA | 8 mA | 932 mA | 90 | 89.5 | 1650 μ F |
| ECLB40W-48D15 | 18-75 VDC | \pm 15 VDC | 0 mA | \pm 1333 mA | 8 mA | 926 mA | 90.5 | 90 | 1350 μ F |

NOTE:

1. Nominal Input Voltage 24 or 48 VDC
2. Measured at Nominal Input Voltage
3. Measured at 12VDC for 24Vin, 24VDC for 48Vin

SPECIFICATIONS

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

INPUT SPECIFICATIONS:

| | | |
|----------------------------------|------------------|-------------|
| Input Voltage Range | 24VDC | 9 – 36VDC |
| | 48VDC | 18 – 75VDC |
| Input Surge Voltage (100ms max.) | 24VDC | 50VDC max. |
| | 48VDC | 100VDC max. |
| Under Voltage Lockout | 24Vin power up | 8.5VDC typ. |
| | 24Vin power down | 8.0VDC typ. |
| | 48Vin power up | 17VDC typ. |
| | 48Vin power down | 16VDC typ. |
| Input Filter | PI Type | |
| Remote On/Off Control (note3) | | |

OUTPUT SPECIFICATIONS:

| | |
|--|--|
| Voltage Accuracy | ±1.5% max. |
| Voltage Balance (Dual) | ±1% max. |
| Transient Response: 75% - 100% Step Load Change | |
| Error Band | ±5% Vout nominal, Recovery Time <250us |
| Ripple & Noise, 20MHz BW (Measured with 1uF MLCC) | |
| Vo=3.3 & 5V | 100mV pk-pk max. |
| Vo=12V&15V&±12V&±15V | 150mV pk-pk max. |
| Temperature Coefficient | ±0.02%/°C max. |
| Line Regulation (note1) | Single/Dual ±0.2% max. |
| Load Regulation (note2) | Single/Dual ±0.5% max. |
| Cross Regulation (Dual Output) Load Cross Variation 10%/100% | ±5% max. |
| Over Voltage Protection | Zener or TVS Clamp |
| Current Limit | 110% - 165% Nominal Output |
| Output Short Circuit Protection | Continuous (Hiccup Mode) |
| External Trim Adj. Range (Single Output Models Only) | ±10% |
| Start up Time | 15ms typ. |

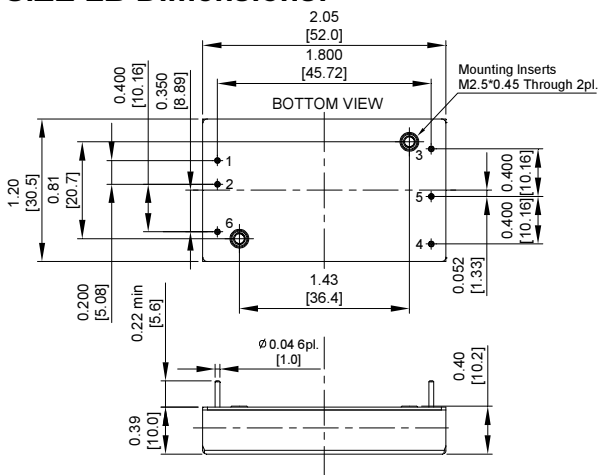
GENERAL SPECIFICATIONS:

| | |
|---|---|
| Efficiency | See Table |
| Isolation Voltage | Input/Output 1500VDC min. |
| | Input/Case, Output/Case 1000VDC min. |
| Isolation Resistance | 10 ⁹ ohm min. |
| Isolation Capacitance | Input/Output 1500pF typ. |
| | Input/Case 1000pF typ. |
| | Output/Case 1000pF typ. |
| Switching Frequency | 300KHz typ. |
| EMI/RFI | Six-Sided Continuous Shield |
| Operating Ambient Temperature Range | -40°C to +85°C |
| De-rating, Above 60°C | Linearly to Zero Power at +105°C |
| Case Temperature (note4) | 105°C max. |
| Cooling | Natural Convection |
| Storage Temperature Range | -55°C to +125°C |
| Thermal Shutdown, Case Temp. | 110°C typ. |
| Humidity | 95% RH max. Non-Condensing |
| MTBF ... MIL-HDBK-217F, GB, 25°C, Full Load | 1400Khrs typ. |
| Dimensions | 2.05 x 1.20 x 0.40 inches (52 x 30.5 x 10.2 mm) |
| Case Material | Aluminum with Non-Conductive Base |
| Weight | 36g |

NOTE:

1. Measured from high line to low line.
2. Measured from full load to min. load.
3. Logic compatibility ... CMOS or open collector TTL, refer to -Vin.
 Module on >3.5VDC to 75VDC or open circuit
 Module off 0 to <1.2VDC
4. Maximum case temperature under any operating condition should not be exceeded 105°C.

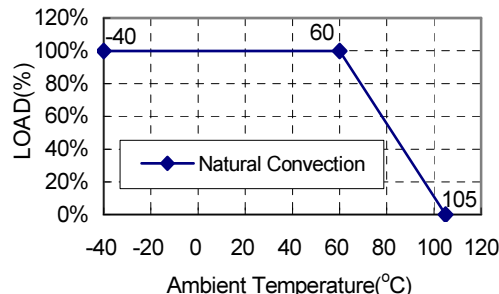
SIZE LB Dimensions:



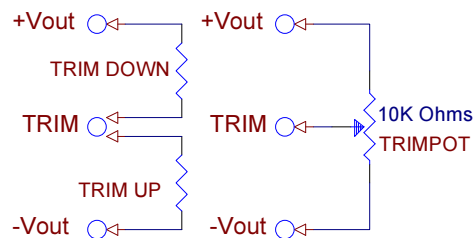
| PIN CONNECTION | | |
|----------------|---------------|-------------|
| PIN | Single Output | Dual Output |
| 1 | +V Input | +V Input |
| 2 | -V Input | -V Input |
| 3 | +V Output | +V Output |
| 4 | Trim | -V Output |
| 5 | -V Output | Common |
| 6 | Remote On/Off | |

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm)DIA
 All Dimensions in Inches[mm]
 Tolerance: Inches: x.xx=±0.02, x.xxx=±0.010
 Millimeters: x.x=±0.5, x.xx=±0.25

Typical Derating Curve



External Output Trimming



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