

# 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 $\mu$ F
ECLB40W-24S05	9-36 VDC	5 VDC	0 mA	8000 mA	8 mA	1842 mA	89.5	90.5	8000 $\mu$ F
ECLB40W-24S12	9-36 VDC	12 VDC	0 mA	3333 mA	10 mA	1832 mA	90.5	91	3300 $\mu$ F
ECLB40W-24S15	9-36 VDC	15 VDC	0 mA	2666 mA	10 mA	1842 mA	90.5	90.5	2700 $\mu$ F
ECLB40W-24D12	9-36 VDC	$\pm$ 12 VDC	0 mA	$\pm$ 1667 mA	10 mA	1873 mA	89.5	89	1650 $\mu$ F
ECLB40W-24D15	9-36 VDC	$\pm$ 15 VDC	0 mA	$\pm$ 1333 mA	10 mA	1862 mA	90	89.5	1350 $\mu$ F
ECLB40W-48S33	18-75 VDC	3.3 VDC	0 mA	10000 mA	6 mA	764 mA	89	90	10000 $\mu$ F
ECLB40W-48S05	18-75 VDC	5 VDC	0 mA	8000 mA	6 mA	921 mA	90	90.5	8000 $\mu$ F
ECLB40W-48S12	18-75 VDC	12 VDC	0 mA	3333 mA	8 mA	921 mA	91.5	90.5	3300 $\mu$ F
ECLB40W-48S15	18-75 VDC	15 VDC	0 mA	2666 mA	8 mA	921 mA	91	90.5	2700 $\mu$ F
ECLB40W-48D12	18-75 VDC	$\pm$ 12 VDC	0 mA	$\pm$ 1667 mA	8 mA	932 mA	90	89.5	1650 $\mu$ F
ECLB40W-48D15	18-75 VDC	$\pm$ 15 VDC	0 mA	$\pm$ 1333 mA	8 mA	926 mA	90.5	90	1350 $\mu$ 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.	

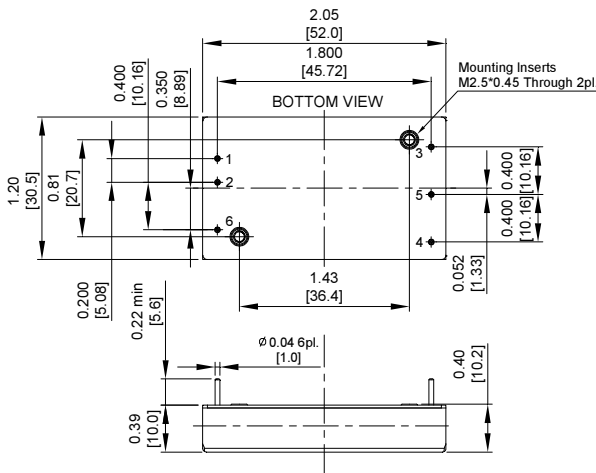
## GENERAL SPECIFICATIONS:

Efficiency	See Table	
Isolation Voltage	Input/Output	1500VDC min.
	Input/Case, Output/Case	1000VDC min.
Isolation Resistance	10 <sup>9</sup> 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.

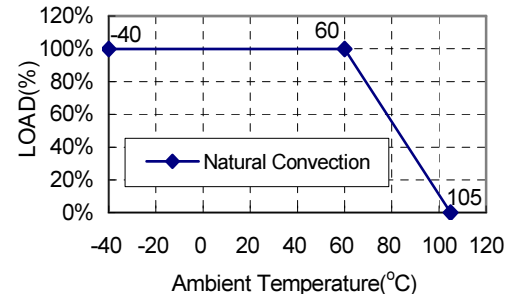
## SIZE LB Dimensions:



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

