



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

## FEATURES

- \* 40W Isolated Output
- \* Efficiency to 91%
- \* 2.05" X1.2 X0.4" Six-Sided Shield Metal Case
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Fixed Switching Frequency
- \* Input Under Voltage Protection
- \* Over Current Protection
- \* Remote On/Off
- \* Continuous Short Circuit Protection
- \* No Tantalum Capacitor Inside
- \* CE Mark Meets 2004/108/EC
- \* Safety Meets UL60950-1, EN60950-1, and IEC60950-1



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	10000µF
ECLB40W-24S05	9-36 VDC	5 VDC	0 mA	8000 mA	8 mA	1852 mA	89.5	90	8000µF
ECLB40W-24S12	9-36 VDC	12 VDC	0 mA	3333 mA	10 mA	1832 mA	90.5	91	3300µF
ECLB40W-24S15	9-36 VDC	15 VDC	0 mA	2666 mA	10 mA	1842 mA	90	90.5	2700µF
ECLB40W-24D12	9-36 VDC	±12 VDC	0 mA	±1667mA	10 mA	1873 mA	89.5	89	1650µF
ECLB40W-24D15	9-36 VDC	±15 VDC	0 mA	±1333mA	10 mA	1862 mA	90	89.5	1350µF
ECLB40W-48S33	18-75 VDC	3.3 VDC	0 mA	10000 mA	6 mA	764 mA	89	90	10000µF
ECLB40W-48S05	18-75 VDC	5 VDC	0 mA	8000 mA	6 mA	921 mA	90	90.5	8000µF
ECLB40W-48S12	18-75 VDC	12 VDC	0 mA	3333 mA	8 mA	921 mA	91	90.5	3300µF
ECLB40W-48S15	18-75 VDC	15 VDC	0 mA	2666 mA	8 mA	926 mA	90.5	90	2700µF
ECLB40W-48D12	18-75 VDC	±12 VDC	0 mA	±1667mA	8 mA	932 mA	90	89.5	1650µF
ECLB40W-48D15	18-75 VDC	±15 VDC	0 mA	±1333mA	8 mA	926 mA	90.5	90	1350µF

**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 (Note 3)		

## 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 p-p max.
Vo=12V & 15V & ±12V & ±15V	150mV p-p max.
Temperature Coefficient	±0.02%/C max.
Line Regulation (Note 1)	Single/Dual ±0.2% max.
Load Regulation (Note 2)	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% - 160% Nominal Output
Output Short Circuit Protection	Continuous (Hiccup Mode)
External Trim Adj. Range (Single Output Models Only)	±10%
Start Up Time	15ms typ.

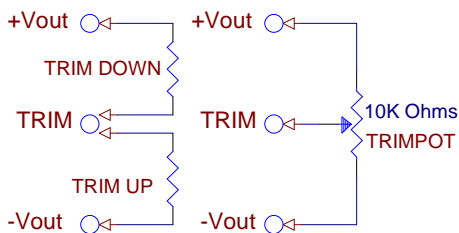
## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output..... 1500VDC min.
	Input/Case.....1000VDC min.
	Output/Case..... 1000VDC min.
Isolation Resistance	10 <sup>9</sup> Ohms min.
Isolation Capacitance	Input/Output..... 2000pF typ.
	Input/Case.....1600pF typ.
	Output/Case..... 1600pF 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 (Note 4)	105°C
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-STD-217F, GB, 25°C, Full Load	Single .... TBDhrs typ.
	Dual..... TBDhrs 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	TBD

## NOTE :

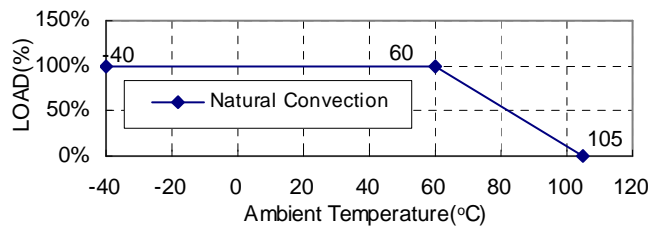
1. Measured From High Line to Low Line.
2. Measured From Full Load to min. Load.
3. Logic Compatibility ... CMOS or Open Collector TTL, Referenced to -Vin.  
 Module On ..... >3.5VDC to 75VDC or Open Circuit  
 Module Off ..... <1.2VDC
4. Maximum Case Temperature Under Any Operating Condition Should Not Be Exceeded 105°C.

## External Output Trimming

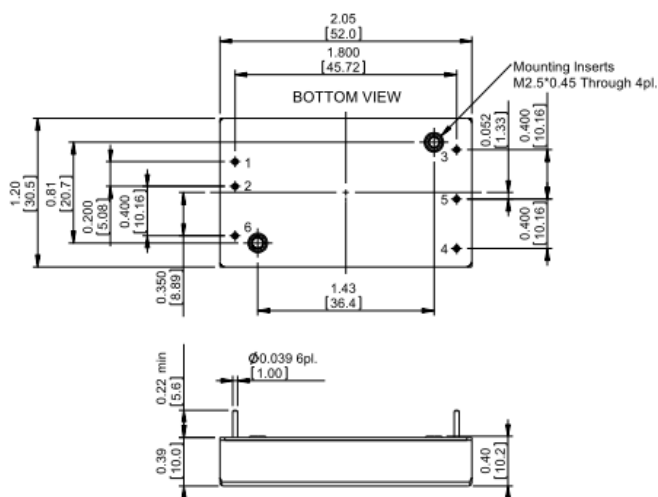


## Derating Curve

Typical Derating Curve



## 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	