# ECLB40W-110 SERIES
40 WATT 4:1 INPUT
DC-DC   CONVERTERS
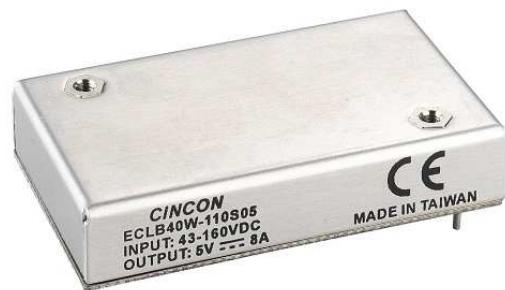
FEATURES

* 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
* Low No Load Power Consumption
* Continuous Short Circuit Protection
* No Tantalum Capacitor Inside
* UL60950-1 2nd (Basic Insulation) Approval
* Meets EN50155 with External Circuits
* Fire & Smoke Meets EN45545-2
* 3000m Operating Altitude
* Full Load Operation Up to 69℃ with Heat-Sink M-C655 Natural Convection

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
ECLB40W-110S33	43-160 VDC	3.3 VDC	0 mA	10000 mA	6 mA	340 mA	88%	10000μF
ECLB40W-110S05	43-160 VDC	5 VDC	0 mA	8000 mA	6 mA	409 mA	88.5%	8000μF
ECLB40W-110S12	43-160 VDC	12 VDC	0 mA	3333 mA	6 mA	404 mA	90%	3300μF
ECLB40W-110S15	43-160 VDC	15 VDC	0 mA	2666 mA	6 mA	399 mA	91%	2700μF
ECLB40W-110D12	43-160 VDC	±12 VDC	0 mA	±1667 mA	6 mA	408 mA	88%	1650μF
ECLB40W-110D15	43-160 VDC	±15 VDC	0 mA	±1333 mA	6 mA	408 mA	88.5%	1350μF
ECLB40W-110D24	43-160 VDC	±24 VDC	0 mA	±833 mA	6 mA	408 mA	89%	850μF

NOTE:
1. Nominal Input Voltage 110 VDC

SPECIFICATIONS

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

INPUT SPECIFICATIONS:

Input Voltage Range ...…...….....….............. 110V .....…....... 43-160V
Input Surge Voltage (100ms max.) ….....…….....….…….….. 200Vdc max.
Under Voltage Lockout …..........…….… Power up ….......…..…… 40V
Power down ….....……... 38V
Positive Logic Remote On/Off (note4&5)
Input Filter ….....…….....…….....…….....…….....…….....……. Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy ….........…….....…….....…….....…......... ±1.5% max.
Voltage Balance (Dual Output) …….……....…….……....….. ±1.0% max.
Transient Response: 25% Step Load Change
Error Band …..…..…. ±5% Vout Nominal Recovery Time ….....….... <250µs
External Trim Adj. Range (Single Output Models Only) ….........….. ±10%
Ripple & Noise, 20MHz BW (Measured with 1uF MLCC)

      Vo= 3.3V&5V …….....…….....…….....…….....…..... 100mV pk-pk max.

      Vo=12V, 15V, ±12V& ±15V …....….....…….....…. 150mV pk-pk max.

      Vo=±24V …….....…….....…….....…….....……... 200mV pk-pk max.

Temperature Coefficient ….....…..........…….....…….…….... ±0.02%/°C max.
Short Circuit Protection ….....…….....…….....…….....…….. Continuous
Line Regulation (note1) ….....…….....…….....…….....……. ±0.2% max.
Load Regulation (note2) ……........…........ Single …….............. ±0.5% max.
Dual……....………... ±1.0% max.
Cross Regulation (Dual output) Load cross variation 10%/100% …... ±5.0% max.
Over Voltage Protection ….....…….....…….....…….....….. Zener or TVS Clamp
Current Limit ….....….....……......................…….. 110%-165% Nominal Output
Start up time ….......…….....…….....….................…….....…….… 15ms typ.

GENERAL SPECIFICATIONS:
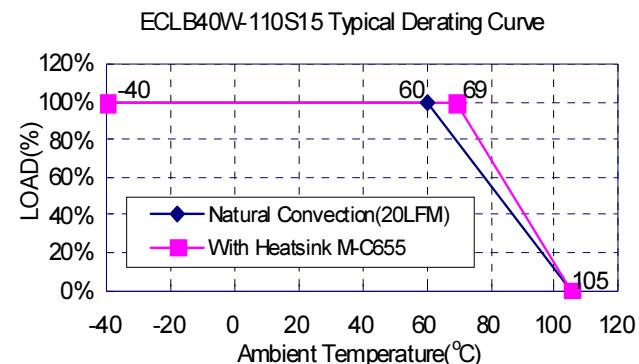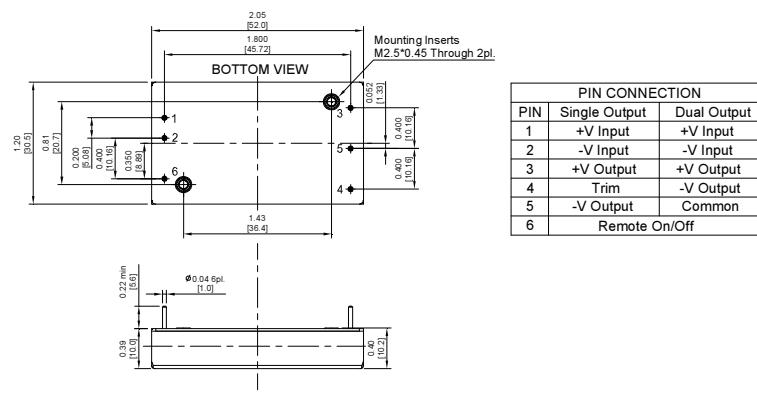
Efficiency ….....…….....…….....…….....…….....…….....…….... See Table
Isolation Voltage …......…... Input/Output ….......…….….…. 3000VDC min.
Input/Case, Output/Case …. 1600VDC min.
Isolation Resistance …......…….....…….....…….....…….... 10^9 Ohms min.
Isolation Capacitance …….....…….....…….....…….....…….... 1500pF typ.
Case grounding …….....…..... Output/case …....….....…….....1000pF typ.
Switching Frequency ….....…….....…….....…….....……..... 250KHz typ.
EMI/RFI …….....…….....…….....…….....……. Six-Sided Continuous Shield
Operating Ambient Temperature Range …....…….....…...…. -40℃ to +85℃
De-rating, Above 45℃ ….....…...…..…. Linearly to Zero Power at +105℃
Case Temperature (note5) ….....…….....…….....…….....……. 105℃ max.
Cooling ….....…….....…….....…….....…….....………. Natural Convection
Storage Temperature Range ...….......…....…..…...... -55℃ to +125℃
Thermal Shutdown, Case Temp. ….....…….........…….......…. 110℃ typ.
Humidity …..….....…….....…….....…….....…….. 95% RH max. Non-Condensing
MTBF …......…. MIL-HDBK-217F, GB, 25℃, Full Load …..... 905Khrs typ.
Safety …….....…….....…….....……....meet UL60950-1 2nd (Basic insulation)
EMC(note6) …….....…. meet EN50155(EN50121-3-2) with external filter
Shock/Vibration ….....…….....…….....……. meet EN50155(EN61373)
Dimensions ….....…….....…….. 2.05x1.20x0.40inches (52x30.5x10.2mm)
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, referenced to –Vin.
    Module on ….....…….....…. >3.5VDC to 75VDC or open circuit
    Module off …….....…….....…….....…….....…….. 0 to <1.2VDC

4. Suffix "N" to the model number with negative logic remote on/off
    Module on …….....…….....…….....…….....……... 0 to < 1.2 VDC
    Module off …….....…..…….... >3.5VDC to 75VDC or open circuit

5. Maximum case temperature under any operating condition should not be Exceeded 105℃.

6. For information about EN50155 and RIA12, refer to application note.

SIZE LB Dimensions:

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

BOTTOM VIEW

2.05 [52.0]
1.800 [45.72]
0.052 [1.33]
0.400 [10.16]
0.400 [10.16]
1.20 [30.5]
0.81 [20.7]
0.200 [5.08]
0.400 [10.16]
0.350 [8.89]
1.43 [36.4]

Mounting Inserts M2.5*0.45 Through 2pl.

0.22 mm [5.6]
Ø0.04 6pl. [1.0]
0.39 [10.0]
0.40 [10.2]

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	

ECLB40W-110S15 Typical Derating Curve

External Output Trimming