

Eighth-Brick B Series

Total Power: Up to 80 Watts
Input Voltage: 36-75 Vdc
No. of Outputs: Single



Special Features

- High efficiency topology
- Industry standard eighth-brick foot print (identical to quarter-brick pinout)
- Low profile through-hole and surface mount version
- 38% space savings over quarter-brick converters
- Wide ambient temperature range, -40 °C to +85 °C
- 90% to 110% output trim
- 100 V, 100 ms input voltage transient rated
- Meets basic insulation requirements of EN60950-1
- Industry standard feature sets: UVLO, OVP, OCP, OTP, O/P trim, remote sense
- Regulation to zero load
- Fixed frequency switching
- Fast transient switching
- EU directive 2002/95/EC compliant for RoHS

Safety

- UL/cUL60950-1 CAN/CSA 22.2
- TUV EN/IEC60950-1

Electrical Specifications*

Output		
Voltage adjustability:		90% to 110%
Minimum load:		0 A
Overshoot:	At turn-on and turn-off	None
Undershoot:	At turn-on and turn-off	None
Transient Response: (See Note 1)		5% Vout typ. deviation 40 μ s recovery
Input		
Input voltage range:	48 V nominal	36-75 Vdc
Input current:	No load	100 mA
	Remote OFF	10 mA
Active high remote ON/OFF		
Logic compatibility:		TTL compatible ref to -input
ON		>2.4 Vdc
OFF		<0.8 Vdc
Undervoltage Lockout:	Power up	35.5 V (typ.)
	Power up	35.5 V (typ.)
Start-up time:	Power up	25 ms (typ.)
(See Note 2)	Remote ON/OFF	5 ms (typ.)

*All specifications are typical at nominal input, full load at 25 °C ambient unless otherwise stated.



Electrical Specifications

Rev. 08.03.12_138
Eighth-Brick B Series
2 of 4

General

Basic insulation:	Input/output	2250 V dc
Switching frequency:	Fixed	500 kHz
Approvals and standards:		EN60950-1 VDE UL/cUL60950-1
Material flammability:		UL94V-0
Weight:		20 g (0.70 oz)
MTBF:	Telcordia SR-332 Issue 1, 50% stress, 40 °C ambient	4.2 M hours

EMC Characteristics

Immunity:		
ESD air enclosure:	EN1000-4-2 8 kV/6 kV	(O/P within spec.)
Radiated field enclosure:	EN1000-4-3 10 V/m	(O/P within spec.)
Conducted:	EN1000-4-6 10 V	(O/P within spec.)
Input transients:	100 V, 100 ms	

Environmental Characteristics

Thermal performance:	Operating ambient temperature	-40 °C to +85 °C
	Non-operating	-40 °C to +125 °C

Protection

Short-circuit:	115% with automatic recovery
Overvoltage:	125% Vo (typ) with automatic recovery
Thermal:	125 °C hot spot temperature with automatic recovery

Notes

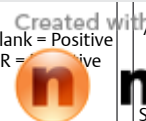
- 1 di/dt = 1 A/μs, Vin = 48 Vdc, Tc = 25 °C, load change = 50% to 75% Io max. and 75% to 50% Io max. Deviation varies by model. For further details see Technical Reference Notes (TRN).
- 2 Start-up into resistive load.
- 3 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 4 Recommended input fusing is up to 10 A HRC 200 V rated fuse.
- 5 Warranty: 2 years.
- 6 through-hole version intended for wave soldering process.
- 7 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant.

Ordering Information

Output Voltage	Output Current (Max)	Efficiency (Typ)	Regulation			Ripple & Noise (Typ)	Model Number(7)
			Set Point Accuracy (Typ)	Line	Load		
12.0 V	6.7	92%	±1%	±0.1%	±0.2%	70 mVp-p	LES06B48-12V0REJ
5.0 V	13	92%	±1%	±0.1%	±0.2%	30 mVp-p	LES13B48-5V0REJ
3.3 V	20	91%	±1%	±0.1%	±0.2%	30 mVp-p	LES20B48-3V3REJ
2.5 V	22	90%	±1%	±0.1%	±0.2%	30 mVp-p	LES22B48-2V5REJ
1.8 V	25	89%	±1%	±0.1%	±0.2%	30 mVp-p	LES25B48-1V8REJ
1.5 V	25	88%	±1%	±0.1%	±0.2%	25 mVp-p	LES25B48-1V5REJ
1.2 V	25	86%	±1%	±0.1%	±0.2%	25 mVp-p	LES25B48-1V2REJ
1.0 V	25	85%	±1%	±0.1%	±0.2%	20 mVp-p	LES25B48-1V0REJ

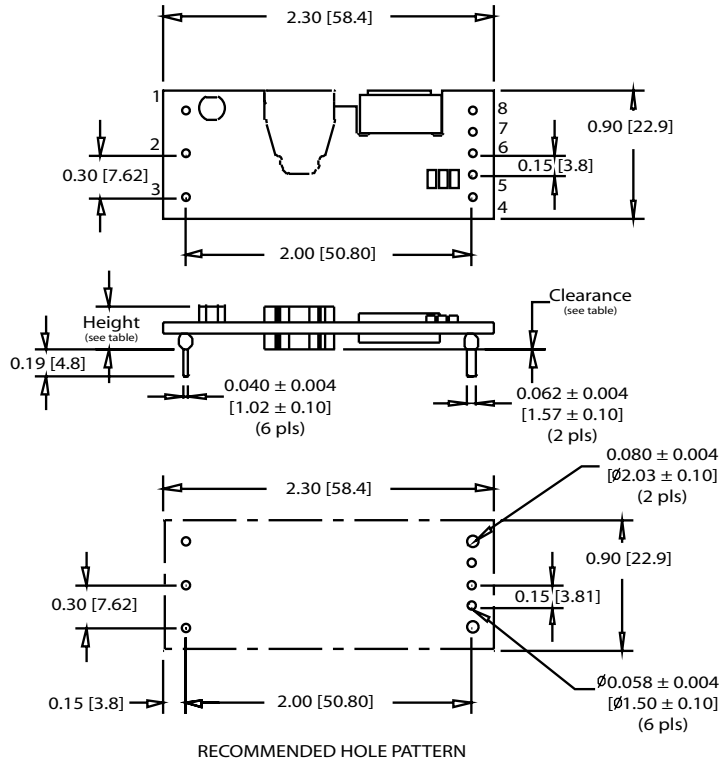
Part Number System with Options

Product Family	Rated Output Current	Vintage	Nominal Rated Input Voltage	Type of Output	Remote ON/OFF LOGIC	Body Height, Package Type and Pin Length	RoHS Compliance (7)	
LES	22	B	48	-	2V5	R	E	J
L = Low Profile E = 1/8 Brick S = Single Output	22 = 22 Amps, 20 = 20 Amps, etc.	A = 1st generation B = 2nd generation	48 = 48 Volts (36 - 75 VDC range)	2V5 = 2.5 Volts 3V3 = 3.3 Volts	Blank = Positive R = Remote	A = 0.33 in (8.1 mm), Through Hole 0.19 in (4.8 mm), Pins E = 0.27 in (6.9 mm), Through Hole 0.1 in (4.8 mm), Pins S = 0.33 in (8.1 mm), Surface Mount	J = Pb free (RoHS 6/6 compliant)	



Through-hole Mechanical Drawing (for 1.8, 1.5, 1.2 and 1.0 V)

Rev. 08.03.12_138
Eighth-Brick B Series
3 of 4



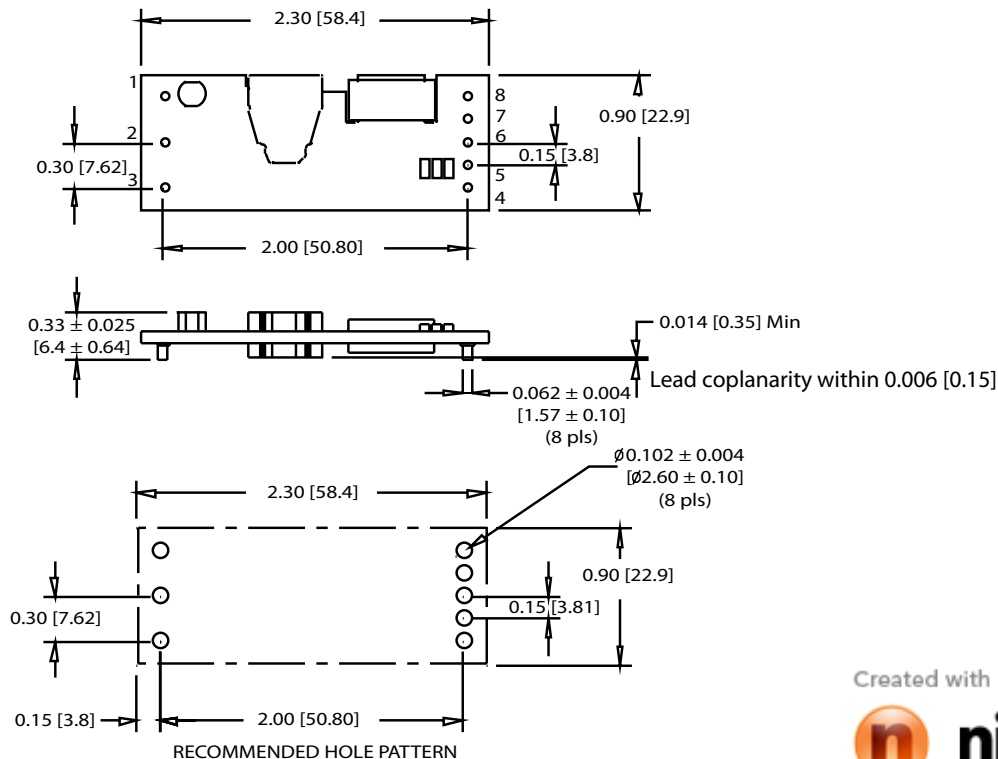
Suffix	Height	Clearance
	±0.025 [0.64]	Minimum
A	0.33 (8.4)	0.004 (0.10)
E	0.37 (9.4)	0.047 (1.20)

Pin Connections

Pin number	Function
1	Vin+
2	ON/OFF
3	Vin-
4	Vout-
5	Sense-
6	Trim
7	Sense+
8	Vout+

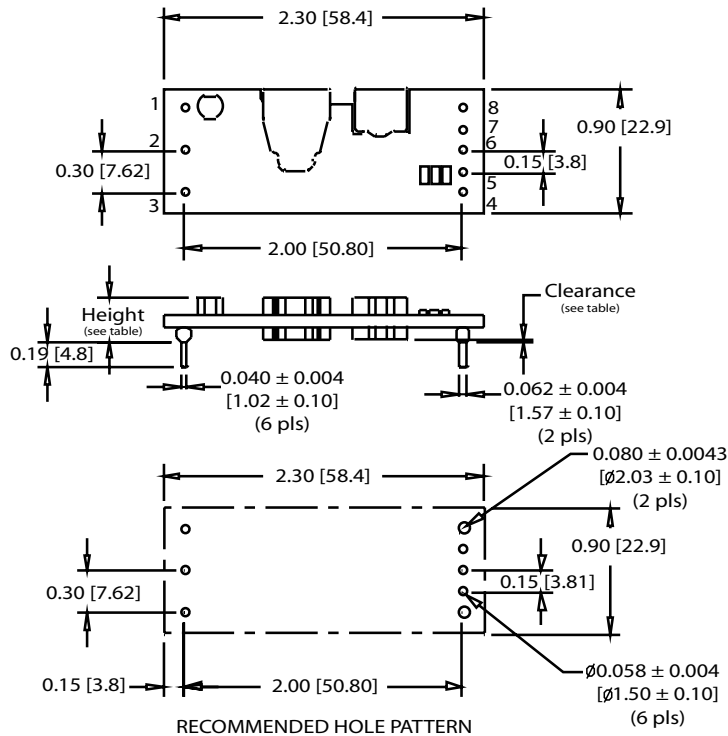
Dimensions are in inches (millimeter)
Tolerances (unless otherwise specified)
X.XX±0.02 (X.X±0.5)
X.XXX±0.010 (X.XX±0.25)

Surface-mount Mechanical Drawing (for 1.8, 1.5, 1.2 and 1.0 V)

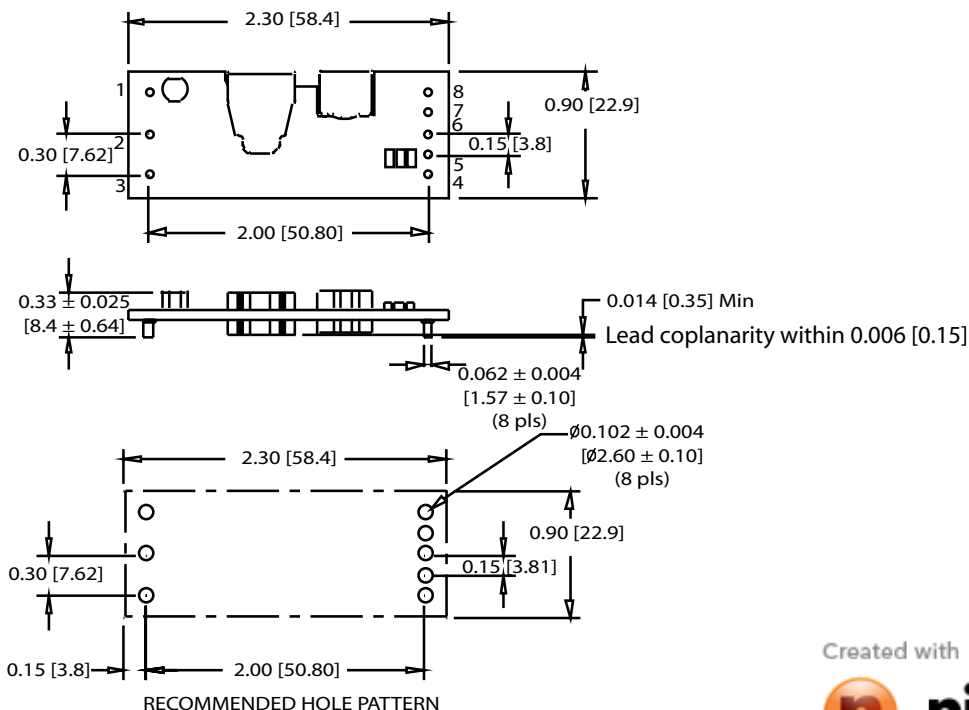


Created with

Through-hole Mechanical Drawing (for 2.5, 3.3, 6 and 12 V)



Surface-mount Mechanical Drawing (for 2.5, 3.3, 6 and 12 V)



Americas

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

Asia (HK)

14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com
techsupport.embeddedpower@emerson.com
emerson.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

EmersonNetworkPower.com

Emerson and the Emerson Network Power logo are trademarks of Emerson Electric Co. © 2012 Emerson Electric Co. All rights reserved.

Created with