LES20B

Eighth-Brick B Series
Single output

Total Power: **Up to 66W**
Input Voltage: **33 - 75VDC**
# of Outputs: **Single**

Special Features

- High efficiency topology
- Industry standard eighth-brick footprint (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 and OTP
- Regulation to zero load
- Fixed frequency switching
- Fast transient switching
- EU directive 2002/95/EC compliant for RoHS
- 2 year warranty

Safety

UL/cUL60950-1 CAN/CSA 22.2

VDE EN/IEC60950-1

CB Report and Certificate to IEC60950

Electrical Specifications*

Output		
Voltage adjustability		90% to 110%
Minimum load		0%
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 µs recovery
Input		
Input voltage range	48 V nominal	36-75 Vdc
Input current	No load Remote OFF	100 mA 10 mA
Active high remote ON/OFF Logic compatibility ON OFF		 TTL compatible ref to -input >2.4 Vdc <0.8 Vdc
Undervoltage Lockout	Power up Power down	35 V (typ.) 32 V (typ.)
Start-up time (See Note 2)	Power up Remote ON/OFF	25 ms (typ.) 5 ms (typ.)

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

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Electrical Specifications Contd.

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 rated output power	>1,000,000 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% lo max. and 75% to 50% lo max. Deviation varies by model. For further details see longform datasheets.
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 Peak to peak measured with no external Pi filter. Significant reduction possible with external filter. See Longform Datasheet for further details.
6 Please consult factory to check availability.
7 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

OUTPUT VOLTAGE	INPUT CURRENT (MAX.) (4)	INPUT RIPPLE CURRENT (5)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION			RIPPLE & NOISE (pk - pk)	MODEL NUMBER (7)
					SET POINT ACCURACY MAX	LINE	LOAD		
2.5 V	1.80 A	250 mA	22 A	90.5%	±1.5%	±0.1%	±0.2%	30 mV	LES22B48-2V5J
3.3 V	2.10 A	250 mA	20 A	91%	±1.5%	±0.1%	±0.2%	30 mV	LES20B48-3V3J
5.0 V	2.10 A	250 mA	13 A	92.5%	±1.5%	±0.1%	±0.2%	30 mV	LES13B48-5V0J
12.0 V	2.5 A	250 mA	6.7 A	92%	±1.5%	±0.1%	±0.2%	50 mV	LES06B48-12V0J

Table 1 - Output Ratings

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	A	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 = Negative	A = 0.32 in (8.1 mm),Through Hole 0.19 in (4.8 mm), Pins E = 0.36 in (9.1 mm), Through Hole 0.19 in (4.8 mm), Pins S = 0.32 in (8.1 mm), Surface Mount	J = Pb free (RoHS 6/6 compliant)

Specifications Contd.

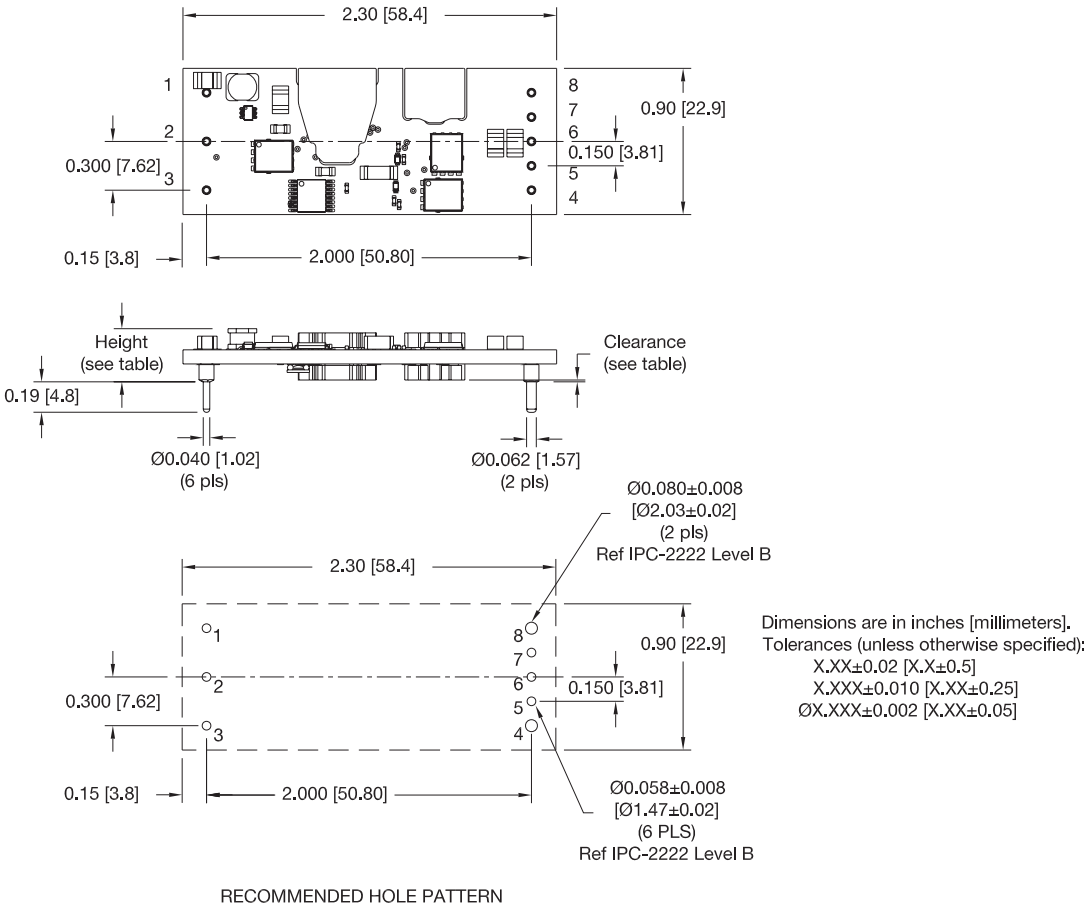

Figure 1 - Through-Hole Mechanical Drawing

PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Vin+
2	ON/OFF
3	Vin-
4	Vout-
5	Sense-
6	Trim
7	Sense+
8	Vout+

DIMENSION OPTIONS		
OPTION	**CLEARANCE**	**HEIGHT**
A	0.010 (0.25) typ.	0.32 (8.1) typ.
E	0.040 (1.02) Typ.	0.36 (9.1) typ.

Pinout Tableand Dimension Options Table

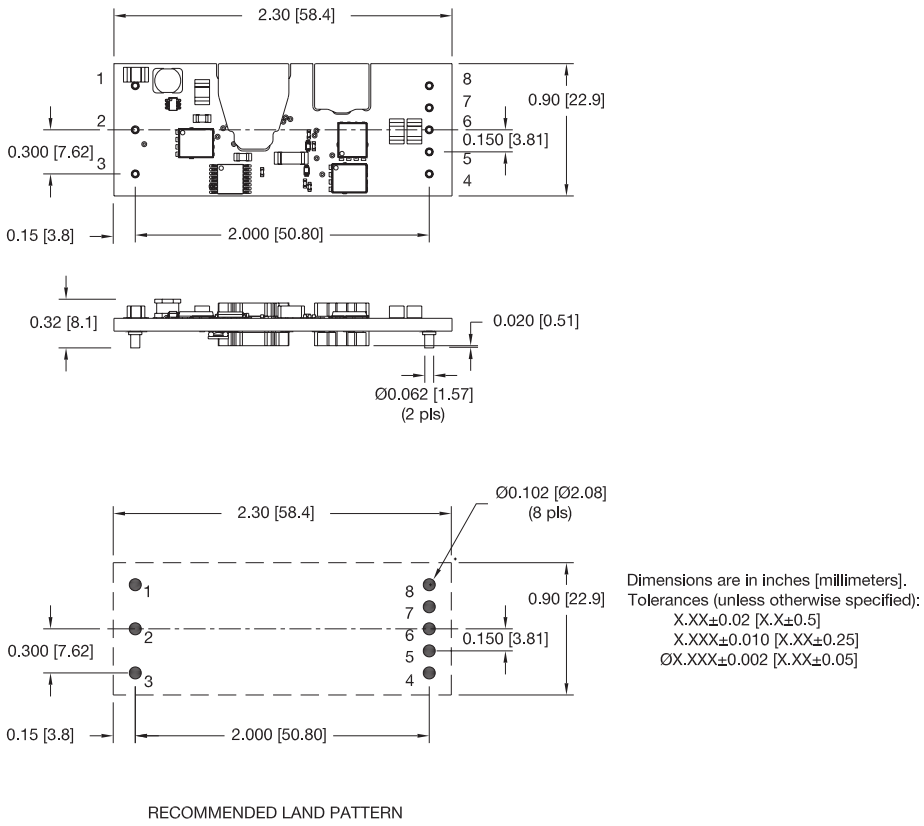

Figure 2 - Surface Mount Mechanical Drawing

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