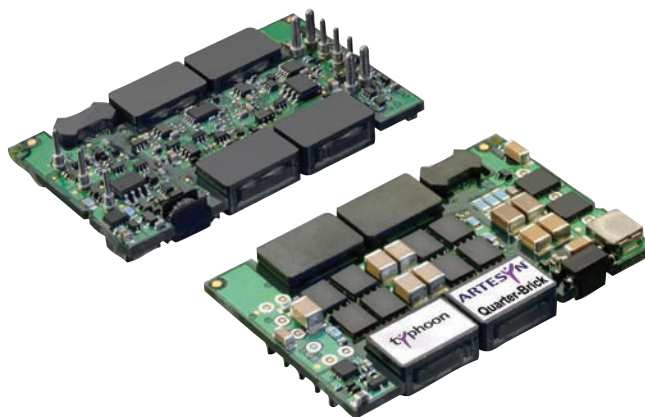


LQS Series

Quarter-Brick Series

Total Power: 200 Watts
Input Voltage: 36 V to 75 V
of Outputs: 1



Special Features

- Ultra high efficiency topology
- Unprecedented useable output power levels
- High power density (200 W/in³) open-frame technology
- Wide ambient temperature range, -40 °C to +85 °C
- 80% to 110% output trim
- Monotonic start-up in normal and prebiased loads
- Basic insulation system
- Overvoltage and overtemperature protection
- Secondary side control, no optocouplers, fast transient response
- 100 V, 100 ms input transient rated
- Available RoHS compliant

Electrical Specifications

Input

Input voltage range:	24 V nominal	18 - 36 Vdc
	48 V nominal	36 - 75 Vdc
Input current:	No load	85 mA to 150 mA
	Remote OFF	5 mA
Active high remote ON/OFF:	Logic compatibility	Open collector ref to -input
	ON	Open circuit or > 2.4 Vdc
Undervoltage lockout:	Power up	< 0.4 Vdc
	Power down	35.5 V (typ.)
Start-up time (See note 2):	Power up	33.5 V (typ.)
	Remote ON/OFF	10 ms (typ.)

Output

Voltage adjustability:		80% to 110%
Minimum load:		0%
Overshoot	At turn-on and turn-off	None
Undershoot:		None
Transient response: (See note 1)		70 mV, typ. deviation 20 µs recovery

Safety

UL, cUL 60950-1 Ed 2
CSA C22.2 No 60950-1 Ed 2
VDE EN60950-1:2006 + A11:2009



Electrical Specifications continued

EMC Characteristics		
Immunity:		
ESD air enclosure:	EN61000-4-2 8 kV/6 kV (O/P within spec.)	
Radiated field enclosure:	EN61000-4-3 10 V/m (O/P within spec.)	
Conducted:	EN61000-4-6 10 V (O/P within spec.)	
Input transients:	100 V, 100 ms	
General Characteristics		
Basic insulation:	Input/output	2250 Vdc
Switching frequency:	Fixed	480 kHz
Approvals and standards:	(See Note 3)	EN60950-1 VDE, UL/cUL 60950-1
Material flammability:		UL94V-0
Weight:		37g (1.30 oz)
MTBF:	Telcordia Tech SR-332	3,866,933 hours
Environmental Specifications		
Thermal performance:	Operating ambient temperature	-40 °C to +85 °C
	Non-operating	-55 °C to +125 °C
Protection		
Short-circuit	Continuous	
Overvoltage	Non-latching	
Thermal	125 °C hot spot temperature with automatic recovery	

Ordering Information

Output Voltage	Input Current Max. ⁴	Input Ripple Current ⁵	Output Current Max.	Efficiency typ.	Regulation			Ripple & noise (pk-pk)	Model Number ^{6,8, 9,10}
					Set point accuracy Max.	Line	Load		
48 Vin VALUE MODELS									
1.2 V	1.92 A	150 mA	50 A	88.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V2J
1.5 V	2.36 A	150 mA	50 A	89.5 %	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V5J
1.8 V	2.82 A	150 mA	50 A	90.4%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-1V8J
48 Vin PERFORMANCE MODELS									
1.2 V	4.05 A	250 mA	100 A	86.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V2J
1.5 V	3.8 A	200 mA	80 A	88.8%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-1V5J
1.8 V	4.6 A	200 mA	80 A	90.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-1V8J
2.5 V	4.1 A	200 mA	50 A	90.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-2V5J
3.3 V	5.2 A	200 mA	50 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS50A48-3V3J
48 Vin ULTRA MODELS									
1.5 V	4.8 A	200 mA	100 A	88.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V5J
1.8 V	5.7 A	200 mA	100 A	89.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS100A48-1V8J
2.5 V	6.2 A	200 mA	80 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS80A48-2V5J
3.3 V	6.2 A	200 mA	60 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS60A48-3V3J
5 V	6.2 A	200 mA	40 A	92.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS40A48-5V0J ⁽⁷⁾
5 V	6.2 A	200 mA	40 A	91.8%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS40A48-5V0GJ ⁽¹¹⁾
24 Vin MODELS									
1.8 V	3.4 A	200 mA	30 A	91.0%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS30A24-1V8J
3.3 V	6.5 A	300 mA	30 A	89.5%	± 1.5%	± 0.1%	± 0.2%	60 mV	LQS30A24-3V3J

LQS60A48-3V3RANJ

L = Low Profile
Q = 1/4 Brick
Type of Output
S = Single
Rated Output Current
 40 A = 40 Amps, 60 A = 60 Amps etc.
Nominal Rated Input Voltage
 24 = 24 Volts (18 Vdc to 36 Vdc range)
 48 = 48 Volts (36 Vdc to 75 Vdc range)
Output Voltage
 1V5 = 1.5 Volts, 1V8 = 1.8 Volts etc.

RoHS Compliance ⁽⁹⁾
J = Pb-free (RoHS 6/6 compliant)

Pin Length Options
 Blank = 0.188" (4.78 mm)
N = 0.145" (3.68 mm)
K = 0.110" (2.79 mm)

Body Height, Package Type, and Pin Length
A = 0.300" (7.62 mm), Through hole,
 0.188" (4.78mm) Pins
E = 0.340" (8.64 mm), Through hole,
 0.188" (4.78mm) Pins
S = 0.28" (7.11 mm), Surface Mount ⁽⁶⁾

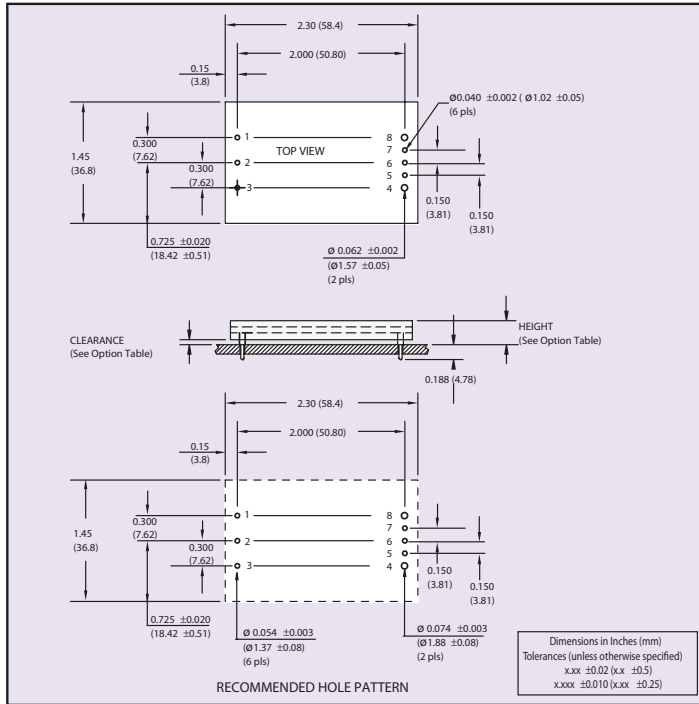
Remote ON/OFF Logic ⁽⁸⁾
 Blank = Positive
R = Negative

Notes:

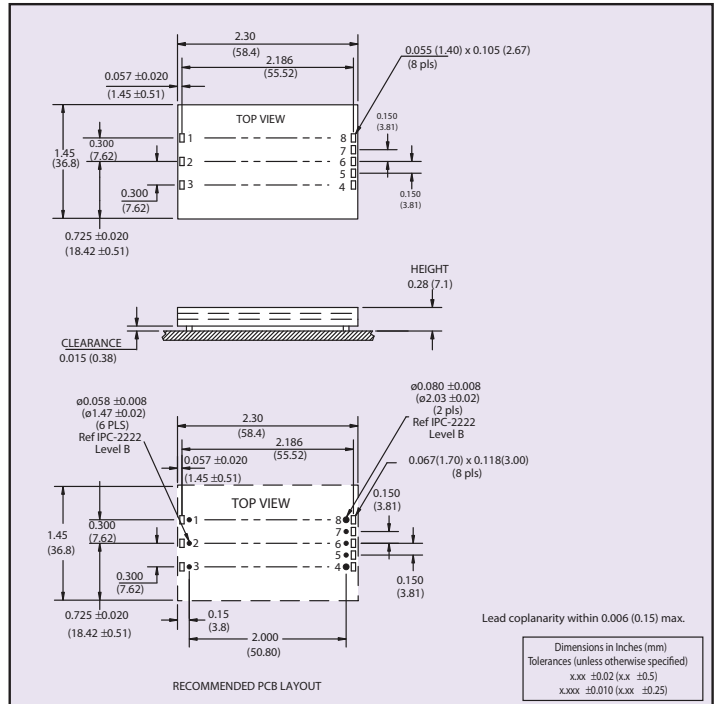
1. di/dt = 1 A/us, Vin = 48 Vdc, Tc = 25 °C, load change = 50% to 75% Io max. and 75% to 50% Io max. Deviation varies by model. For further details see longform datasheet
2. Start-up into resistive load.
3. This product is only for inclusion by professional installers within other equipment and must 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 without external π filter. Significant reduction possible with external filter. See Application Note 141 for further details.

6. 'S' option applies to the 24 V models only.
7. Except LQS40A48-5V0J which has the double output pins.
8. Active low Remote ON/OFF is available. Standard product is Active High. When ordering active low parts, designate with the suffix 'R' e.g. **LQS100A48-1V8RAJ**
9. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
10. NOTICE: Some models do not support all options. Please contact your local sales representative or use the on-line model number search tool at www.PowerConversion.com to find a suitable alternative.
11. LQS40A48-5V0GJ has single output pins /0.188" pin length/0.340" body height

Mechanical Drawings



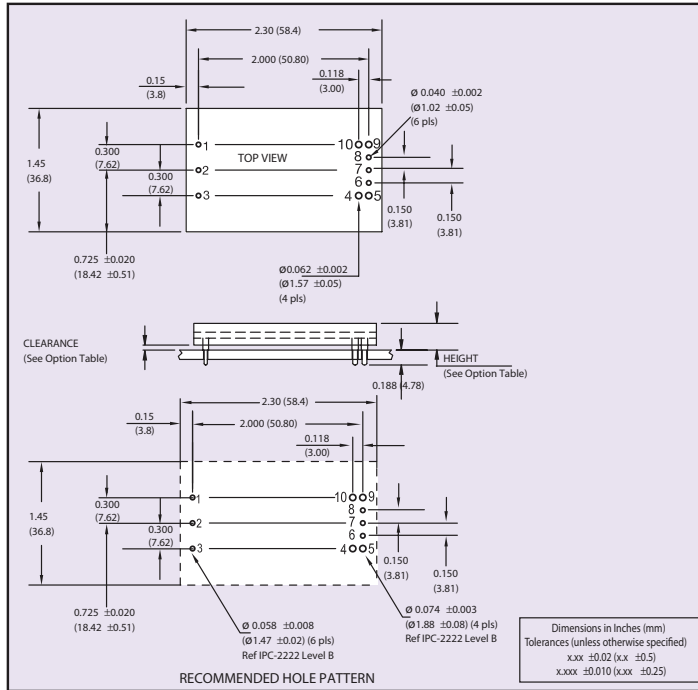
24 V/ 48 V Mechanical Drawing for Output Current of 50 A or less
(See Note 7)



24 V Surface-mount Mechanical Drawing and Pinout Table

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

Dimension Options		
Option	Clearance	Height
	± 0.016 (0.41)	+0.022 (0.56) -0.030 (0.76)
A	0.030 (0.76)	0.300 (7.62)
E	0.070 (1.78)	0.340 (8.64)



48 V Mechanical Drawing for Output Current Greater than 50 A
"The Double P" Pinout (7)

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

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 Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.
©2010 Emerson Electric Co.