

EMERALD TECH

EH250 Series 250W High Efficiency Half Brick

Description

The EQ250 series 24V, 48V, 150V and 110V DC-DC converters are rated up to 250 Watts output power over a -55° to +100° C temperature range with a 16-38 Vdc, 36-72 Vdc, 100-200Vdc, 180-372 Vdc nominal input. Current sharing allows the units to be paralleled for total power of up to 1250 Watts. The welded, hermetically sealed package is only 2.28 x 2.2 x 0.50 inches, giving the series an overall power density of up to 125 watts per cubic inch. With a wide input voltage range of 16-40Vdc, 36-75Vdc, 88-132Vdc they are available with an output voltage of either 5V, 12V, 15V, 24V, 28V, 36V, 48V. All models feature an input filter, input undervoltage lockout, output overvoltage and overtemperature protection, output current limiting and short circuit protection. The fully enclosed, encapsulated construction with aluminum heat spreader design achieves efficient heat transfer with no hot spots. The use of Patent-pending Hybrid Planar Transformer technology and other patent-pending design concepts facilitate maximum power delivery with the highest efficiency up to 91% - 94%. The converters combine creative design concepts with highly derated power devices to achieve very high reliability, high performance and offer a low cost solution to systems designers that are challenged to maximize power and minimize board space.

Features

- Full Isolated
- Magnetic coupling
- Fixed frequency, 200KHz typical
- High efficiency patented topology
- Low profile of only 0.40 inch
- Sync function
- -55°C to +100 °C ambient operation
- Inhibit function – Input and Output
- Output trim on single output models
- Indefinite short circuit protection
- Remote sense on single output models
- Current Sharing-Parallelable up to 1000 Watts

Applications

- Telecommunications, Data Communications
- Wireless Communications, Networking Gear
- Servers, Switches and Data Storage
- Distributed Power Architecture
- Aerospace, Aircraft
- Complex power system
- Portable weaponry



(Approval Pending)

Specification Summary

- Input Voltage: 24V, 48V, 150V, 300V
- Output Voltage: 5V, 12V, 15V, 24V, 28V, 36V, 48V
- Tightly output regulation, typical $\pm 0.1\%$
- No minimum load required
- Ripple & Noise (20Mhz BW) 100 mV (pk-pk)
- Wide input operating range 18-40V, 36-72V, 88-132V
- On/Off pin and remote sense
- Output adjustment $\pm 10\%$ range
- 1500V, 10M Ω input-to-output isolation
- Full enclosed, encapsulated construction with heat spreader for low temperature rise
- Output overcurrent and overvoltage protection
- Over Temperature protection
- Input Under voltage protection
- MTBF of 1,600,000 hours @ 50° C (Bellcore) •
MTBF of 1,700,000 hours @ 50°C (Bellcore)

Part Number and Selection Information

Product Number	Input Voltage	Input Voltage range	Output Voltage	Max. Current/Power
E24B5M2O0B	24	18-36	5V	40A/200W
E24B12M25OB	24	18-36	12V	20.8A/250W
E24B15M25OB	24	18-36	15V	16.7A/250W
E24B24M25OB	24	18-36	24V	10.4A/250W
E24B28M25OB	24	18-36	28V	8.9A/250W
E24B36M25OB	24	18-36	36V	6.9A/250W
E24B48M25OB	24	18-36	48V	5.2A/250W
E48B5M2O0B	48	36-75	5V	40A/200W
E48B12M25OB	48	36-75	12V	20.8A/250W
E48B15M25OB	48	36-75	15V	16.7A/250W
E48B24M25OB	48	36-75	24V	10.4A/250W
E48B28M25OB	48	36-75	28V	8.9A/250W
E48B36M25OB	48	36-75	36V	6.9A/250W
E48B48M25OB	48	36-75	48V	5.2A/250W
E150B5M2O0B	150	100-200	5V	40A/200W
E150B12M25OB	150	100-200	12V	20.8A/250W
E150B15M25OB	150	100-200	15V	16.7A/250W
E150B24M25OB	150	100-200	24V	10.4A/250W
E150B28M25OB	150	100-200	28V	8.9A/250W
E150B36M25OB	150	100-200	36V	6.9A/250W
E150B48M25OB	150	100-200	48V	5.2A/250W
E300B5M2O0B	300	180-375	5V	40A/200W
E300B12M25OB	300	180-375	12V	20.8A/250W
E300B15M25OB	300	180-375	15V	16.7A/250W
E300B24M25OB	300	180-375	24V	10.4A/250W
E300B28M25OB	300	180-375	28V	8.9A/250W
E300B36M25OB	300	180-375	36V	6.9A/250W
E300B48M25OB	300	180-375	48V	5.2A/250W

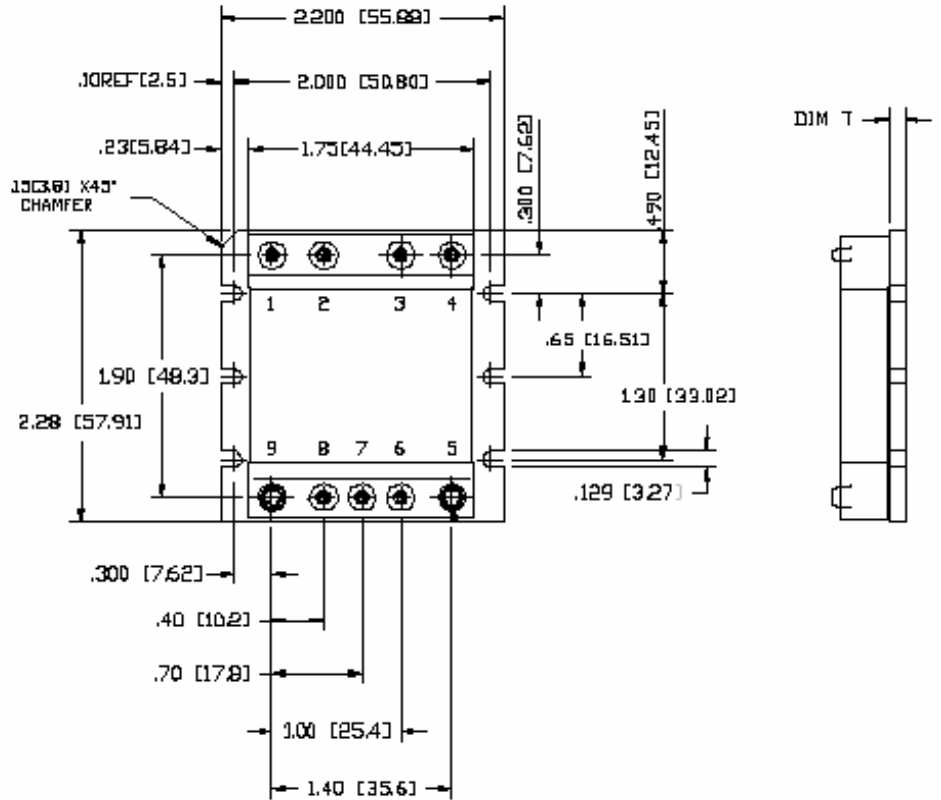
Typical at Ta= +25 °C under nominal line voltage and 75% load conditions, unless noted.

Consult factory for other output voltage configurations and optional accessories such as heatsinks and filters.

Outline Information and Pin-out

PIN CONNECTIONS

Pin Connection		Pin Size	
Pin #	Function	Inch	mm
1	Vin +	0.08"	2.03
2	PC	0.08"	2.03
3	PR	0.08"	2.03
4	Vin -	0.08"	2.03
5	Vo -	0.18"	4.57
6	-S	0.08"	2.03
7	SC	0.08"	2.03
8	+S	0.08"	2.03
9	Vo +	0.18"	4.57



All dimensions are in inches [mm]
 0.08" [2.032mm], 0.18" [4.572mm]
 Pin material: Brass
 Pin finish: Tin/Lead plated
 Baseplate material: Aluminum.
 Outline dimension:
 2.28" (57.9)x2.2(55.9)x0.5" (12.7)
 Max. Weight: 112g

The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines