

EMERALD TECH

EBQ240 Series

240W High Efficiency Bus Converter

Description

The EBQ240 Series bus converter is a next-generation, board-mountable, isolated, fixed switching frequency DC/DC converter that uses synchronous rectification to achieve extremely high conversion efficiency. The bus converter series provides an isolated step down voltage from 48V to a 12V intermediate bus with no regulation in a standard "quarter brick" module. With an input voltage range of 42-55V they are available with an output voltage of 12 Volts. The use of Patent-pending Hybrid Planar Transformer technology and other patent-pending design concepts facilitate maximum power delivered with the highest efficiency up to 96%. 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.



(Approval Pending)

Features

- Ultra-high efficiency, >96% at full rated load current
- Delivers up to 20 amps (240 Watts) of output current (power) with minimal derating – no heatsink required
- Input voltage range: 42-55V
- Fixed frequency switching provides predictabel EMI performance
- -40°C to +85 °C ambient operation
- Meets Basic Insulation requirements of EN60950
- UL 60950 recognized, TUV EN60950, and CSA C22.2 No. 60950-00 Certified (all safeties pending)
- Meets conducted limits of FCC Class B and CEI IEC61204-3 Class B with external filter

Applications

- Telecommunications
- Data Communications
- Wireless Communications
- Networking Gear
- Servers, Switches and Data Storage
- Semiconductor Test Equipment
- Distributed Power Architecture

Specification Summary

- Output 20A/12V, Input range 42-55V
- Tightly output regulation, typical $\pm 0.5\%$
- No minimum load required
- Ripple & Noise (20Mhz BW) 100 mv (pk-pk)
- Current sharing allowed without the use of any external circuitry
- On/Off pin and remote sense
- Output adjustment +/-10% range
- 1500V, 10M Ω input-to-output isolation
- Open frame construction with heat spreader for low temperature rise
- Output overcurrent and overvoltage protection
- Over Temperature protection
- Input Under voltage protection
- MTBF of 1,700,000 hours @ 50°C (Bellcore)

Part Number and Selection Information

Model		Input				Output		Efficiency
Part Number		Voltage (Volts)		Current (A)		Voltage	Current	75% Load
Positive Logic	Negative Logic	Nominal	Range	No load	Full load	(Volts)	(Amps)	(%)
EBQ48012M20P	EBQ48012M20N	48	42-55	0.1	2.8	12	20	96

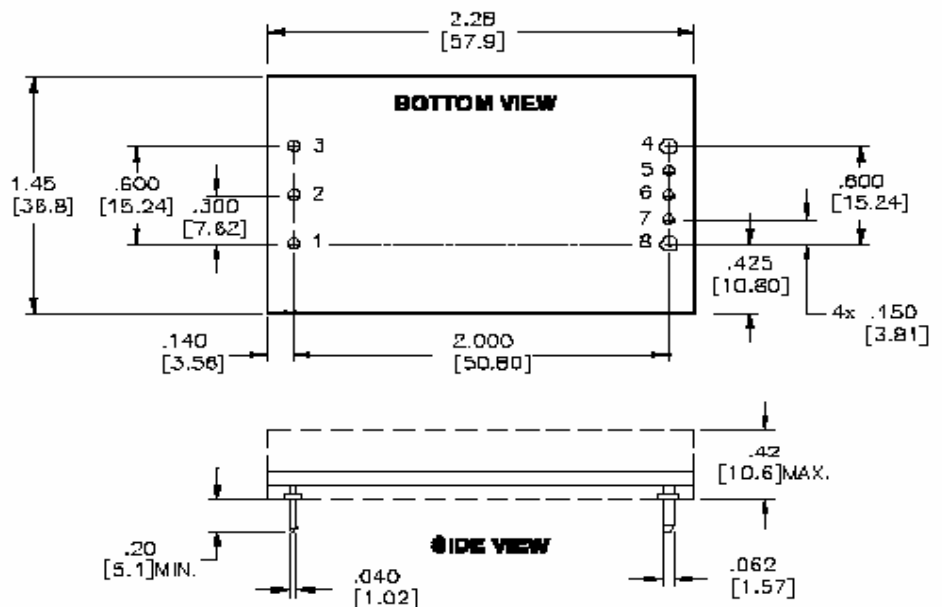
Typical at Ta= +25 °C under nominal line voltage and 75% load conditions, unless noted.

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

Outline Information and Pin-out

PIN CONNECTIONS

Pin#	Function	Function
1	Vin +	Positive input voltage
2	On/Off	TTL input to turn converter on and off, referenced to Vin(-), with internal pull up
3	Vin -	Negative input voltage
4	Vout -	Negative output voltage
5	Sense -	Negative remote sense1
6	Trim	Output voltage trim2
7	Sense +	Positive remote sense3
8	Vout +	Positive output voltage



Notes:

- 1). All dimensions are in inches [mm]
- 2). Pin 4 and 8 are dia. 0.062 [1.57]
- 3). All other pins are all dia. 0.040 [1.02]
- 4). Pin material: Brass
- 5). Pin finish: Tin/Lead plated
- 6). Heat spreader (baseplate) material: Aluminum
- 7). Weight: 39.5g(1.4oz).

Thermal derating for vertical orientation, Vin=48V

Output Voltage (Volts)	Output Current at 40°C (Amps)			Output Current at 60°C (Amps)			Output Current at 80°C (Amps)		
	Free Air	200 LFM	300 LFM	Free Air	200 LFM	300 LFM	Free Air	200 LFM	300 LFM
12.0	27	42	47	25	41	44	18	32	37

The information and specifications contained in this specification are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice.

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EMERALTECH
Product Brief

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