EMERAL TECH

EE Series

40A High Efficiency Eighth Bricks

Description

The EE series eighth-brick converter is a next-generation, board-mountable, isolated, fixed switching frequency of DC/DC converter that uses synchronous rectification to achieve extremely high conversion efficiency. With a wide input voltage range of 36-75V they are available with an output voltage of 1.5, 1.8, 2.5, 3.3, 5 and 12 Volts. All models feature an input filter, input undervoltage lockout, output overvoltage and overtemperature protection, output current limiting and short circuit protection. The unique single board construction 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 delivered with the highest efficiency up to 92%. 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

- Delivers up to 40A in Eighth Brick
- High efficiency patented topology
- Low profile of only 0.37 inch
- 1.5V, 1.8V,2.5V , 3.3V, 5.0V, 12.0V output single board modules
- -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

- 30A @ 3.3V, 35A @ 2.5V, 40A @ 1.8V, 40A @ 1.5V 12A @ 12V, 20A @ 5.0V.
- Tight output regulation, typical ±0.5%
- No minimum load required
- Ripple & Noise (20Mhz BW) <100 mv (pk-pk)
- Wide input operating range 36-75V
- On/Off pin and remote sense
- Output adjustment +/-10% range
- 1500V, 10MΩ 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)

Specification Summary

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Part Number and Selection Information

Model Part Number		Input				Output		Efficiency
		Voltage (Volts)		Current (A)		Voltage	Current	75% Load
Positive Logic	Negative Logic	Nominal	Range	No load	Full load	(Volts)	(Amps)	(%)
EE48033M30P	EE48033M30N	48	36-75	0.1	2.4	3.3	30	90
EE48025M35P	EE48025M35N	48	36-75	0.1	2.1	2.5	35	89
EE48018M40P	EE48018M40N	48	36-75	0.1	1.8	1.8	40	88
EE48015M40P	EE48015M40N	48	36-75	0.1	1.5	1.5	40	87
EE48050M20P	EE48050M20N	48	36-75	0.1	2.3	5.0	20	91
EE48120M10P	EE48012M10N	48	36-75	0.1	2.8	12.0	10	92

Typical at Ta= +25 ºC 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.

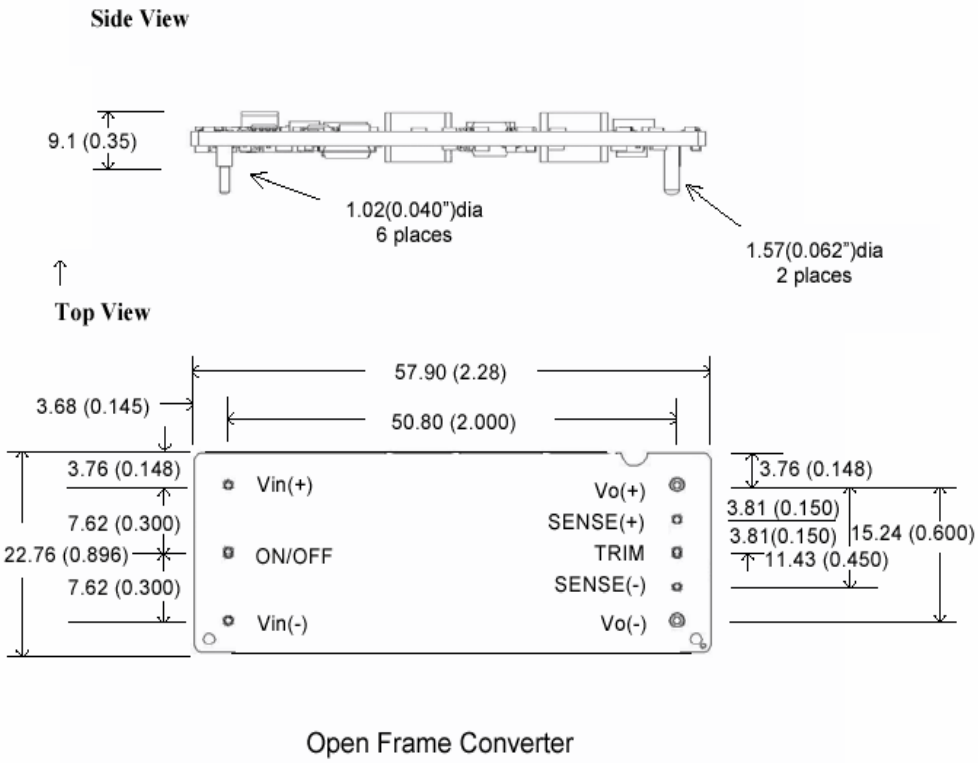
Outline Information and Pin-out

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: 19g (0.68oz)



Open Frame Converter

Thermal derating for vertical orientation, Vin=54V

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
3.3	20	35	38	18	33	36	10	24	27
2.5	20	35	40	18	34	37	11	25	29
1.8	22	37	42	20	36	39	13	27	31
1.5	24	39	44	22	38	41	15	29	33
5.0	25	40	45	23	39	42	16	30	35
12.0	27	42	47	25	41	44	18	32	37

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.