

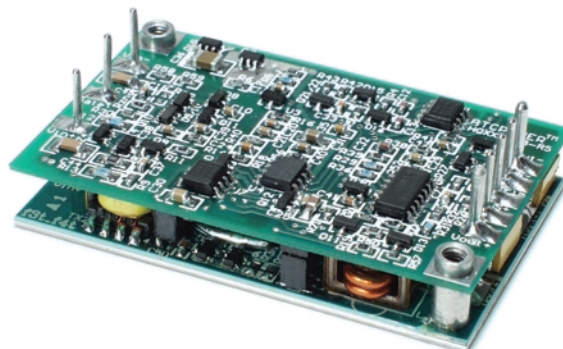
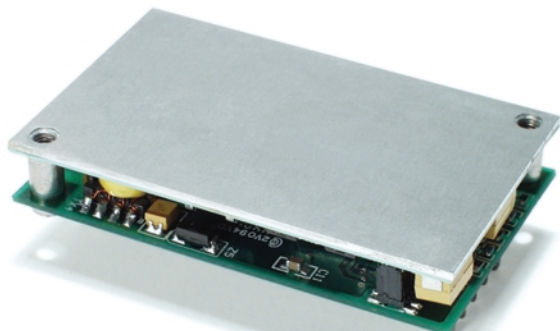
Broadband TelCom Power, Inc.

BTCPower™

Powering the Internet and Communications Infrastructure

HQ Family

High Current Quarter Brick DC/DC Converters



Description

The HQ family of high current, high efficiency DC/DC converters offer current levels that exceed all other quarter-bricks and are comparable to existing half-bricks. They are targeted specifically at the telecommunication, industrial electronics, mobile telecommunication and distributed power markets. With a wide input voltage range of 36-75V they are available with output voltage of either 1.5, 1.8, 2.5 or 3.3 Volts. All models feature an input filter, input undervoltage lockout, output overvoltage and overtemperature protection, output current limiting and short circuit protection. The unique open-frame construction with aluminum heat spreader design achieves efficient heat transfer with no hot spots. The use of patented Flat Transformer technology and other patent-pending design concepts facilitate maximum power delivered with the highest efficiency up to 91%. The converters combine creative design concepts with highly derated power devices to achieve very high reliability, high performance and low cost solution to systems designers requiring maximum power in small footprints.

Applications

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

Features

- Delivers up to 50A in quarter brick
- High efficiency patented topology
- No airflow or heat sink required
- No minimum load required
- Low profile of only 0.48 inch
- 1.5V, 1.8V, 2.5V or 3.3V output models
- Wide input operating range 36-75V
- -40°C to +100°C ambient operation
- On/Off pin and remote sense
- Output adjustment +/-10% range
- 1500V, 10M Ω input-to-output isolation
- Meets Basic Insulation requirements of EN60950
- Open frame construction with heat spreader for low temperature rise
- UL 60950 recognized, TUV EN60950 and CSA C22.2 No. 60950-00 Certified (pending)
- Meets conducted limits of FCC Class B and CEI IEC61204-3 Class B with external filter
- MTBF of 1,000,000 hours @ 50°C (MIL-HDBK-217F)

CONVERTER SELECTION

Typical @ $T_a = +25^\circ\text{C}$ under nominal line voltage and 75% load conditions, unless noted.

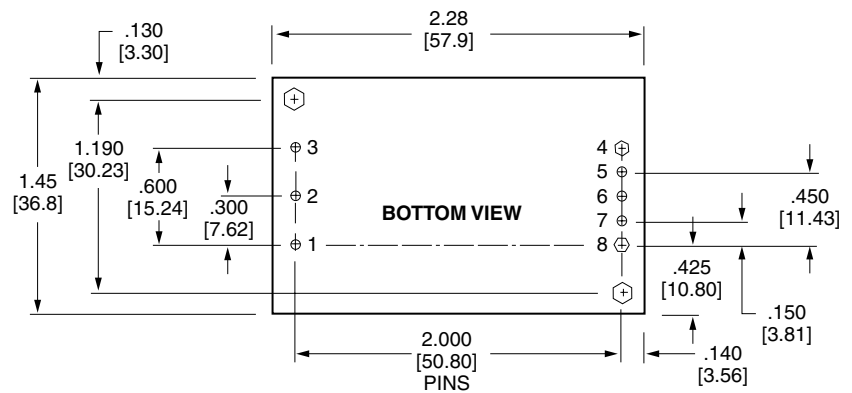
Model	Input				Output		Efficiency 75% Load (%)
	Voltage (Volts)		Current (mA)		Voltage	Current	
	Nominal	Range	No load	Full load	(Volts)	(A)	
HQ50A-48-1.5	48	36-75	0.1	1.8	1.5	50	87
HQ50A-48-1.8	48	36-75	0.1	2.1	1.8	50	88
HQ45A-48-2.5	48	36-75	0.1	2.6	2.5	45	89
HQ40A-48-3.3	48	36-75	0.1	3.1	3.3	40	90

For negative logic feature add designator N as suffix to model number, i.e., HQ50A-48-1.5N

Consult factory for other output voltage configurations.

Outline Information and Summary Specifications

Pin Connection	
Pin#	Function
1	Vin +
2	On/Off
3	Vin -
4	Vout -
5	Sense -
6	Trim
7	Sense +
8	Vout +



All dimensions are in inches [mm]

Pin 4 and 8 are dia. 0.062 [1.57]

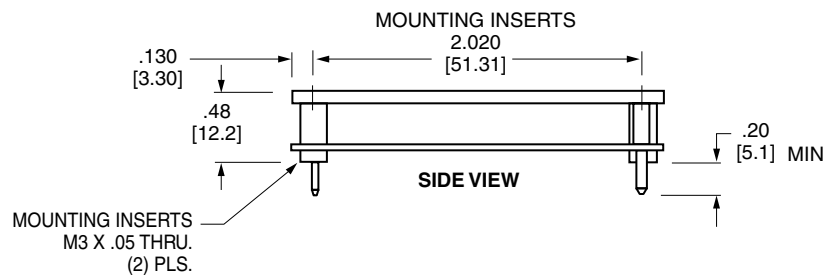
All other pins are all dia. 0.040 [1.02]

Pin material: Brass

Pin finish: Tin/Lead plated

Heat spreader (baseplate) material: Aluminum

Weight: 39.5g (1.4oz)



Thermal derating for vertical orientation, Vin=54V

Output Voltage (Volts)	Output Current at 40°C (Amps)				Output Current at 60°C (Amps)			
	200 LFM		300 LFM		200 LFM		300 LFM	
	No Heatsink	With Heatsink	No Heatsink	With Heatsink	No Heatsink	With Heatsink	No Heatsink	With Heatsink
1.5	40A	50A	45A	50A	33A	50A	40A	50A
1.8	38A	50A	45A	50A	32A	50A	38A	50A
2.5	33A	45A	40A	45A	28A	45A	35A	45A
3.3	30A	40A	35A	40A	25A	40A	30A	40A

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.