Broadband TelCom Power, Inc.

30W, 50W & 60W Single Output

Features

- **Synchronous rectification topology**
- **Super Low profile of only 0.34 inch**
- **1500V, 10MΩ input-to-output isolation**
- **-40°C to +70°C ambient operation without de-rating by natural convection cooling**
- **-40°C to +100°C ambient operation without de-rating with air flow**
- **Input under-voltage lockout**
- **Air flow not required**
- **Heat Sink not required**
- **Output current limit and short circuit protection**
- **Six-sided metal shielding for zero EMI/EMC emission**

Description

The SHB-50 Series, consisting of 4 different models, is targeted specifically at the Internet hardware, telecommunication, mobile telecommunication, and distributed power markets. The SHB-50 series offers two wide input voltage ranges:- 18-36Vdc and 36-75Vdc. Output voltages are 2.5 or 3.3 Volts. All models feature input pi filters, input under voltage lockout, output current limiting and over-voltage shut down, over-temperature shut down and short circuit protection.

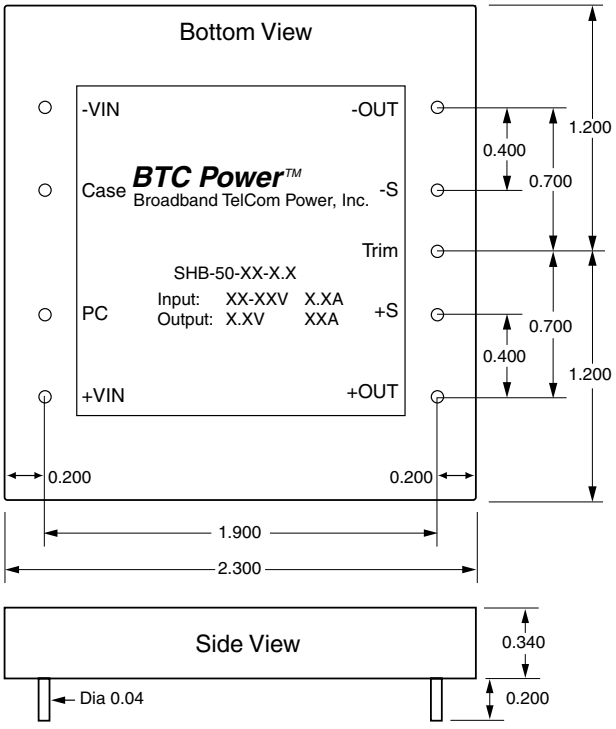
The six sided aluminum case achieves efficient heat transfer and provides 100% EMI screening. The converter combines creative design concept and conservative component selection to achieve very high reliability, high performance and low cost.

Model SHB Selection Guide

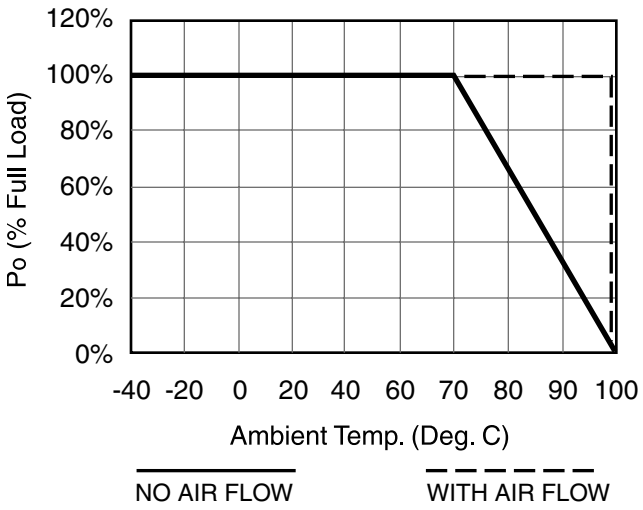
Typical @ T_a=+25°C under nominal line voltage and full load conditions unless noted.

	Input				Output		
	Voltage (Volts)		Current (mA)		Voltage	Current	Efficiency
Model	Nominal	Range	No load	Full load	(Volts)	(A)	Typ.
SHB50-24-2.5	24	18-36	80	1450	2.5	14	88%
SHB50-48-2.5	48	36-75	40	720	2.5	14	89%
SHB50-24-3.3	24	18-36	80	1900	3.3	7	89%
SHB50-48-3.3	48	36-75	40	940	3.3	7	91%

Note: The 5v output version, rated at 60 watts, will be released soon.



NOTES:
- All dimensions in inches
- Tolerance is x.xx in +/- .02 in.



The de-rating table above is for no air flow over the converter. There is **no power de-rating up to 100 °C** operation with air flow. Please call for more information on the maximum output power versus rate of air flow in LFM.

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Electrical Specifications

Typical @ Ta=+25°C under nominal line voltage and full load conditions unless noted.

Model SHB

Input					
Parameter	**Notes and Conditions**	**Min.**	**Typ**	**Max.**	**Unit**
Operating Input Voltage ranges	24 Vdc models	18	24	36	VDC
	48 Vdc models	36	48	72	VDC
Under-Voltage Lockout	24 Vdc models	17			VDC
Turn-ON Threshold	48 Vdc models	35			VDC
Under-Voltage Lockout	24 Vdc models			16	VDC
Turn-OFF Threshold	48 Vdc models			34	VDC
Input Current	See model selection guide, Standby mode **(OFF, UVLO)** 5mA				
Enable (Output Turn OFF)	Optional Function	0		1.2	VDC
Enable (Output Turn ON)		Open or ≥ 3VDC			
Input Filter	All models	Pi Filter			

Output					
Parameter	**Notes and Conditions**	**Min.**	**Typ**	**Max.**	**Unit**
Output Voltage Accuracy	50% Load			±1.5	%
Line Regulation	Low line to High line			±0.3	%
Load Regulation	10% to 100% load			±0.5	%
Ripple & Noise (20MHz bandwidth)	Over Line, Load & Temp.		50	100	mV pk-pk
				30	mV RMS
Temperature Coefficient				±0.04	% / °C
Transient Recovery Time	25% load step change			800	µSec.
Transient Peck Deviation	25% load step change			2	%Vo
Start-Up Time			50	100	mSec.
Output Power Protection		100	120	140	%
Output Voltage Trim Range		-10		+10	%
Output Voltage Remote Sense			NA		%

General Specifications					
Parameter	**Notes and Conditions**	**Min.**	**Typ**	**Max.**	**Unit**
Switching Frequency		180	200	220	KHz
Storage Temperature range	All model	-55		125	°C
Operating Case Temperature	All models	-40		100	°C
Isolation Voltage	All models, 1 Minute			1500	VDC
Isolation Resistance	All models, 500VDC	10			MΩ
Isolation Capacitance	All models			470	pF
Humidity	All models			95	%
Weight				28(1.0)	g (oz.)
Efficiency	See model selection guide				
Dimensions	2.0" x 1.2" x 0.35" (50.8 x 30.5 x 8.9mm)				
Case Material	Aluminum				

It is recommended that the input be protected by fuses or other protection devices.