Broadband TelCom Power, Inc.

S25 Series
Advanced Release.

25W Single Output

Features

- **Synchronous rectification topology**
- **Low profile of only 0.35 inch**
- **High power density up to 30W/inch^3**
- **1500V, 10MΩ input-to-output isolation**
- **2.5V, 3.3V, or 5V outputs**
- **Wide input voltage ranges: 18-36V, and 36-75V**
- **-40°C to +60°C ambient operation without derating with no air flow**
- **-40°C to +100°C ambient operation without de-rating with air flow**
- **Input under-voltage lockout**
- **Output current limit and short circuit protection**
- **Six-sided metal shielding for zero EMI/EMC emission**
- **MTBF≥700,000 hours @50˚C (MIL-HDBK-217F)**

Description

The S 25W Series, comprising 6 different models is targeted specifically at the telecommunication, industrial electronics, mobile telecommunication, and distributed power markets. The 25W series module offers two wide input voltage ranges of 18-36V models and 36-75V models. Output voltages are 2.5, 3.3 or 5 Volts. All models feature input pi filters, input under voltage lockout, output current limiting, and short circuit protection.

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

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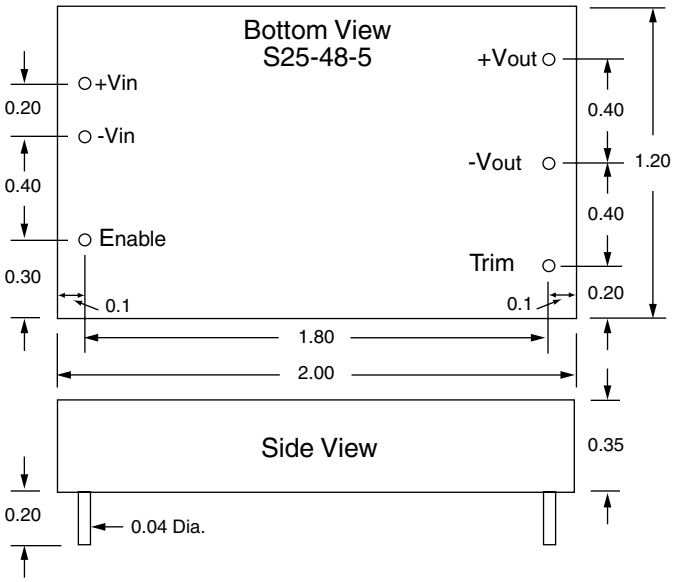
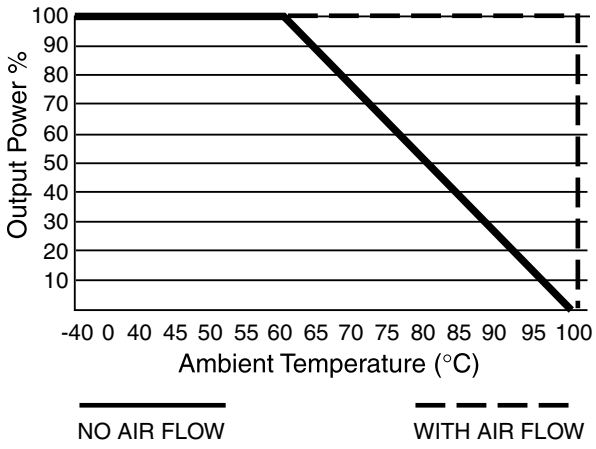
Model S25 Selection Guide

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.
S25-24-2.5	24	18-36	100	890	2.5	8.0	85%
S25-48-2.5	48	36-75	50	445	2.5	8.0	85%
S25-24-3.3	24	18-36	100	1132	3.3	7.5	88%
S25-48-3.3	48	36-75	50	566	3.3	7.5	88%
S25-24-5.0	24	18-36	100	1225	5.0	5.0	89%
S25-48-5.0	48	36-75	50	613	5.0	5.0	89%



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.

Electrical Specifications

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

Model S25

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	75	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	%

General Specifications					
Parameter	**Notes and Conditions**	**Min.**	**Typ**	**Max.**	**Unit**
Switching Frequency		285	300	315	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			20	pF
Humidity	All models			95	%
Calculated **MTBF**	MIL-HDBK-217F @ 50°C		750,000		Hours
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.

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