

Features

2:1 Wide Input Range

Operating Temperature Range: -45°C~105°C

Approved to CE, RoHS & REACH

Safety Standards to IEC/EN 62368-1 & EN 50155

Efficiency up to 94%

EMI Class A & B

Single Output 12~48V DC



28SHBFxy-S-x-F600-IP Series

DC/DC PCB Mount Power Supply



Ideal Power's 28SHBFxy-S-x-F600-IP 600W Half Brick DC/DC Converters Series are certified to UKCA, CE, RoHS, REACH & EN 62368-1/IEC 62368-1/EN 50155 Standards and comply with Efficiency Regulations. These are primarily used in ITE, Audio & Video, Railway Industries, and customised solutions are available upon request.

Part Number Structure

28SHBF - 110 120 - S - P - F 600

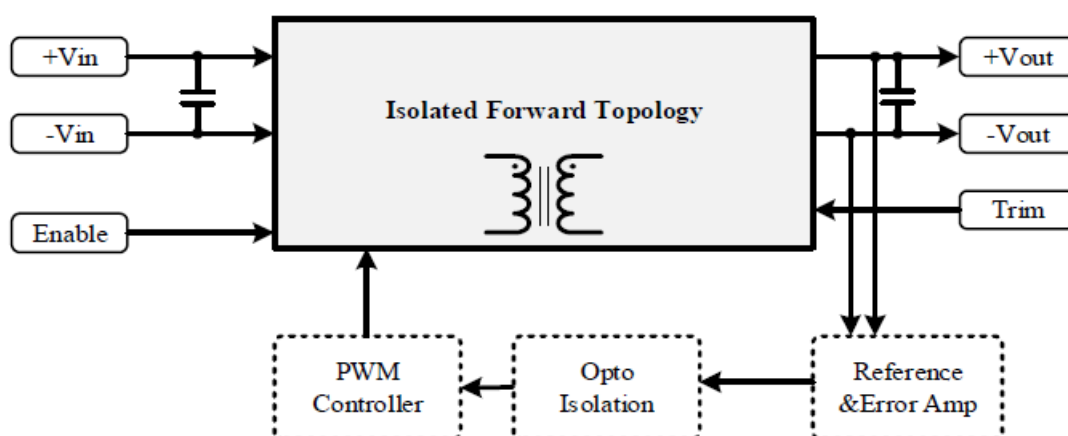
Series Name	Input Voltage (VDC)	Output Voltage (VDC)	Pin out	Remote control option	Shape	Watt
Supreme series Half Brick	024 : 18-36 048 : 36-75	120 : 12 240 : 24	S: Dosa	P: Positive logic N: Negative logic	F: No Flange	600
Full size	110 : 66-180 300 : 180-425	280 : 28 480 : 48				

Models

Model	Input		Current (A) Full load	Output			Efficiency Typ.(%)
	Voltage (V) Range	Nominal		Voltage (V)	Current (A)	Power (W)	
28SHBF024120-□-□-F600-IP	18-36	24	26.59	12	50	600	94
28SHBF024240-□-□-F600-IP	18-36	24	26.88	24	25	600	93
28SHBF024280-□-□-F600-IP	18-36	24	26.88	28	21.42	600	93
28SHBF024480-□-□-F600-IP	18-36	24	26.59	48	12.5	600	94
28SHBF048120-□-□-F600-IP	36-75	48	13.29	12	50	600	94
28SHBF048240-□-□-F600-IP	36-75	48	13.44	24	25	600	93
28SHBF048280-□-□-F600-IP	36-75	48	13.44	28	21.42	600	93
28SHBF048480-□-□-F600-IP	36-75	48	13.29	48	12.5	600	94
28SHBF110120-□-□-F600-IP	66-180	110	5.80	12	50	600	94
28SHBF110240-□-□-F600-IP	66-180	110	5.87	24	25	600	93
28SHBF110280-□-□-F600-IP	66-180	110	5.87	28	21.42	600	93
28SHBF110480-□-□-F600-IP	66-180	110	5.80	48	12.5	600	94
28SHBF300120-□-□-F600-IP	180-425	300	2.17	12	50	600	92
28SHBF300240-□-□-F600-IP	180-425	300	2.2	24	25	600	91
28SHBF300280-□-□-F600-IP	180-425	300	2.2	28	21.42	600	91
28SHBF300480-□-□-F600-IP	180-425	300	2.17	48	12.5	600	92

Description

Ideal Power **DC DC CONVERTER - Supreme series - Half Brick Full Size converter** is composed of Isolated, board-mountable, fixed switching frequency DC-DC converters that use synchronous rectification to achieve extremely high-power conversion efficiency. These DC-DC converter modules use advanced power processing, control, and packaging technologies to enhance the performance, flexibility, reliability, and cost effectiveness of mature power components.



Input Data						
Parameter	Notes and Conditions		Min.	Typ.	Max.	Unit
Transient Input Voltage Ranges	28SHBF024 models (100ms Max) 28SHBF048 models (100ms Max) 28SHBF110 models (100ms Max) 28SHBF300 models (100ms Max)		--	--	50 100 250 500	VDC
Operating Input Voltage Ranges	28SHBF024 models 28SHBF048 models 28SHBF110 models 28SHBF300 models		18 36 66 180	24 48 110 300	36 75 180 425	VDC
Under-Voltage Lockout Start up Voltage	28SHBF024 models 28SHBF048 models 28SHBF110 models 28SHBF300 models		--	--	18 36 66 180	VDC
Under-Voltage Lockout Shutdown Voltage	28SHBF024 models 28SHBF048 models 28SHBF110 models 28SHBF300 models		--	17 34 63 176	--	VDC
Over-Voltage Lockout Turn OFF Threshold	28SHBF024 models 28SHBF048 models 28SHBF110 models 28SHBF300 models		--	--	45 85 195 450	VDC
Over-Voltage Lockout Turn ON Threshold	28SHBF024 models 28SHBF048 models 28SHBF110 models 28SHBF300 models		36 75 180 425	--	--	VDC
Input Current	See model selection guide, Standby mode (OFF, UVLO) 8mA					
Enable Function Input	Positive logic	ON OFF	Open Short or 0 ~ 1.2			VDC
	Negative logic	ON OFF	Open Short or 0 ~ 1.2			VDC

Output Data						
Parameter	Notes and Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	VNOM 50% Load		--	--	±1.5	%
Line Regulation	Low Line to High Line		--	--	±0.3	%
Load Regulation	10% to 100% Load		--	--	±0.5	%
Ripple & Noise Voltage	Bandwidth 20MHz and with 1μF MLCC Output Capacitor		--	1.5	--	%Vpk-
Temperature Coefficient	--		--	--	+0.04	% / °C
Transient Recovery Time	25% load step change		--	800	--	μSec
Transient Peak Deviation	$\Delta I_o / \Delta t = 2.5A/\mu s$		--	+2	--	%Vo
Start-Up Time	When use Enable Function		--	20	--	mSec.
Trimming Output Protection	VNOM 10% Load		--	+10	--	%
Output power protection	VNOM 10% Load		--	120	--	%
Over Voltage Protection	VNOM		--	120	--	%

General Specifications & Environmental Data

Parameter	Notes and Conditions	Min.	Typ.	Max.	Unit
Switching Frequency	VNOM	200	67	--	kHz
Storage Temperature Range	All models	-60	--	100	C
Operating Case Temperature	All models	-45	--	3000	m
Over Temperature Protection	All models, Auto. Recovery	--	--	80	C
Isolation Voltage	All models, 1 Minute	2250	--	--	VDC
Input To Output					
Isolation Resistance	All models, 500VDC, At 70%RH	100	--	--	MΩ
Input To Output					
Isolation Capacitance	All models	--	1500	--	pF
Input To Output					
Humidity (Non Condensing)	All models	--	--	95	%
Calculated MTBF	BellCore-TR-332@ 50°C G.B	--	1.5	--	M HR
Thermal Shock	Environmental Engineering Experimental Tests	MIL-STD-810F			
Vibration		MIL-STD-810F			
Drop		MIL-STD-810F			
Weight	Shape-F (No Flange)	115 (4.06)			G (oz)
Dimensions	Shape-F (No Flange)	2.40" x 2.30" x 0.50" (60.0 x 58.4 x 12.7mm)			
Case Material	Aluminium base with plastic case				
Potting Material	Silicone				

Standards Compliance

Parameter	Standard	Test conditions	Performance criteria
Environmental Compliance	Reach; RoHS	--	Pass
EMI	EN55032	--	Class A / Class B
ESD	EN61000-4-2	±4 kV Air Discharge ±4 kV Contact Discharge	Crit. A
Radiated Immunity	EN61000-4-3	Level 2, 3 V/m	Crit. A
Fast Transient	EN61000-4-4	±2 kV Applied	Crit. A
Surge	EN61000-4-5	±2 kV Applied	Crit. A
Conducted Immunity	EN61000-4-6	Level 2, 3 V rms	Crit. A

It is recommended to protect the input by fuses or other protection devices.

Modules could meet EN55032 Class A and Class B standard with external components.

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Bottom View

Dimensions (inches [millimeters]):

- Overall Width: 1.9 [48.26]
- Overall Height: 2.4 [60]
- Distance from top edge to center of hole 1: 1.4 [35.56]
- Distance from right edge to center of hole 8: .6 [15.24]
- Distance from bottom edge to center of hole 5: 2.0 [50.80]
- Mounting Hole Diameter: $\phi 0.118$ [3]
- Through Hole Diameter 1: $\phi 0.04 \times 5$ [1]
- Through Hole Diameter 2: $\phi 0.08 \times 4$ [2]

Side View

Dimensions (inches [millimeters]):

- Overall Width: 2.3 [58.40]
- Overall Height: .5 [12.7]
- Distance from top edge to center of hole 1: .2 [5.08]
- Distance from right edge to center of hole 8: .5 [12.7]

Pin#	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Enable	Enable
4	-Vout	-Vout
5	Trim	Com
6	+Vout	+Vout

Pin Material: Copper Alloy
Pin Plating: Gold
Dimensions in inches [mm]
Tolerances: .XX±0.02 [.X±0.5mm]