

# 5 G6 %/\$ SERIES

57 #8 7 `Dck Yf `AcXi `Yg. 1%0 watts

## Features

- Complete AC/DC Power Supply
- No Extra Components Required
- Base Plate Cooled
- -40 to +85 °C Base Plate Temperature
- Low Profile in Full Brick Package
- High Efficiency - Up to 91%
- Universal Input
- <0.3 W No Load Input Power
- Optional Heatsink Available
- Over Current, Over Voltage and Over Temperature Protection



### Dimensions:

**ASB110:**  
4.6 x 2.4 x 0.67" (116.8 x 61 x 17 mm)

## Description

The ASB110 series is a range of complete low profile, full brick, base-plate cooled AC-DC power supplies which require no external components. The series includes a complete built in EMC filter and AC Fuse as well as bulk storage capacitor providing a complete AC-DC power solution ready for installation into end applications. The ASB110 offers high efficiency to minimise waste heat and heat sinking requirements and operates from -40 °C to +85 °C on the module base-plate.

## Models & Ratings

Output Power	Output Voltage	Output Current	Noise and Ripple	Efficiency <sup>(1)</sup>	Model Number <sup>(2)</sup>
110 W	12.0V	9.17 A	120 mV	90.0%	ASB110PS12
	15.0V	7.33 A	150 mV	90.0%	ASB110PS15
	24.0V	4.58 A	240 mV	91.0%	ASB110PS24
	28.0V	3.93 A	280 mV	91.0%	ASB110PS28
	36.0V	3.06 A	360 mV	91.0%	ASB110PS36
	48.0V	2.29 A	480 mV	90.5%	ASB110PS48

## Notes

1. Typical efficiency with 230 VAC input and full load.
2. Add suffix '-HK-' to receive with optional heat-sink fitted.

## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	85		264	VAC	Derate linearly from 100% load at 90 VAC to 90% load at 85 VAC
Input Frequency	47		63	Hz	
Input Current		1.1/0.6		A	115 VAC/Measured at 230 VAC
Inrush Current			70	A	230 VAC, cold start at 25 °C
Power Factor		>0.9			Full load
Earth Leakage Current			500	µA	264 VAC, 60 Hz
No Load Input Power			0.3	W	
Input Protection	Internal T3.15A/250 VAC fitted in line				

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		90		%	See Models and Ratings table
Isolation: Input to Output Input to Ground Output to Ground			3000	VAC	
			1500	VAC	
			500	VDC	
Switching Frequency		70-130 / 50-90		kHz	PFC / PWM
Power Density		14.8		W/in <sup>3</sup>	
Mean Time Between Failure		>300		kHrs	MIL-HDBK-217F at 25 °C GB
Weight		0.51 (230)		lb (g)	

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## Output

Characteristic	Min.	Typ.	Max.	Units	Notes & Conditions
Output Voltage	12		48	VDC	See Models and Ratings table
Initial Set Accuracy		1		%	At 60% load
Minimum Load					No minimum load required
Start Up Delay			1.3	s	
Start Up Rise Time			20	ms	
Hold Up Time	10			ms	Full load and 115 VAC
Line Regulation			±0.5	%	
Load Regulation			±0.5	%	
Transient Response			2	%	Maximum deviation, recovering to less than 1% within 300 µs for 25% step load
Ripple and Noise			1	% pk-pk	20 MHz bandwidth, measured with 20 MHz Bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor.
Overload Protection	130		210	%	
Overvoltage Protection	110		140	%	Recycle mains to reset
Short Circuit Protection	Trip and restart (hiccup), auto resetting				
Thermal Protection	Measured internally, auto resetting				
Temperature Coefficient		0.02		%/°C	

## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+85	°C	Baseplate Temperature, see derating curve
Cooling	Conduction Cooled via Baseplate				
Operating Humidity	5		90	%RH	Non-condensing
Storage Temperature	-40		+85	°C	
Operating Altitude			3048	m	
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep, 60 mins for each of 3 axes				

## EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Emissions	EN55022	Level B	
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

## EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3/2	A	±8 kV air/±4 kV contact
Radiated	EN61000-4-3	3 V/m	A	
EFT/Burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	3 V	A	
Dips and Interruptions	EN61000-4-11	Dip: 100% 10 ms	A	
		Dip: 30% 500 ms	A/B	High Line/Low Line
		Int:100% 5000 ms	B	

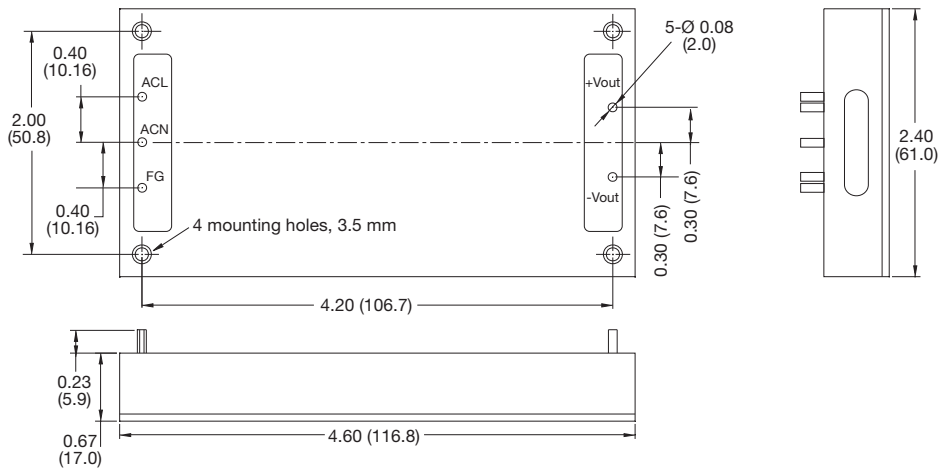
## Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1	
TUV	EN60950-1	
CB	IEC60950-1	

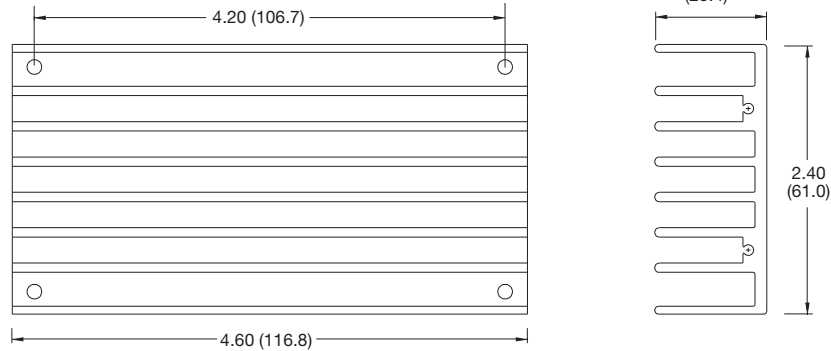
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## Mechanical Details



### Optional Heatsink (IFH HEATSINK)

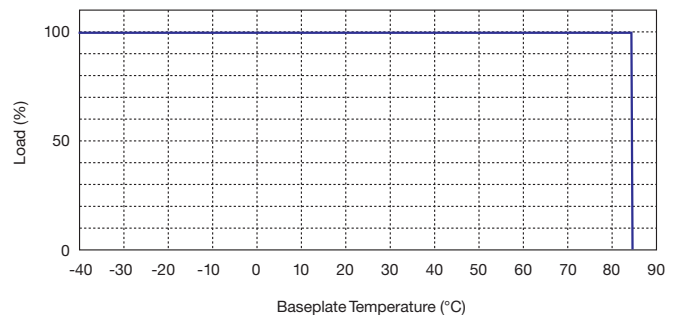
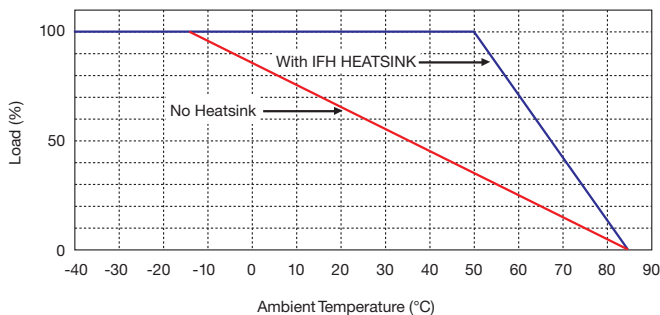


## Notes

1. Dimensions shown in inches (mm).
2. Weight: 0.51 lb (230 g)
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)
6. Baseplate is connected to FG Pin

## Application Notes

### Derating Curve



## Notes

When ASB110 is fitted with IFH HEATSINK and mounted in horizontal position with heatsink upper most, the base plate temperature will typically be 85 °C in an ambient of 50 °C.

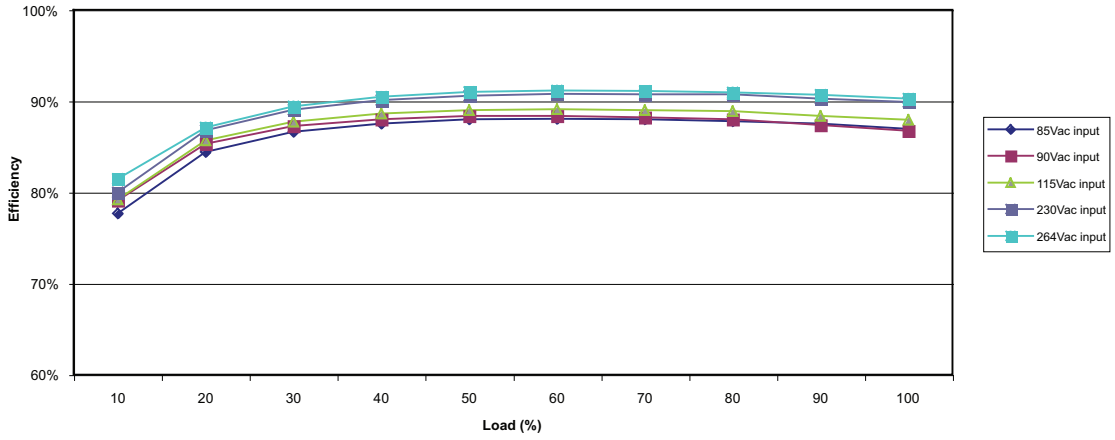
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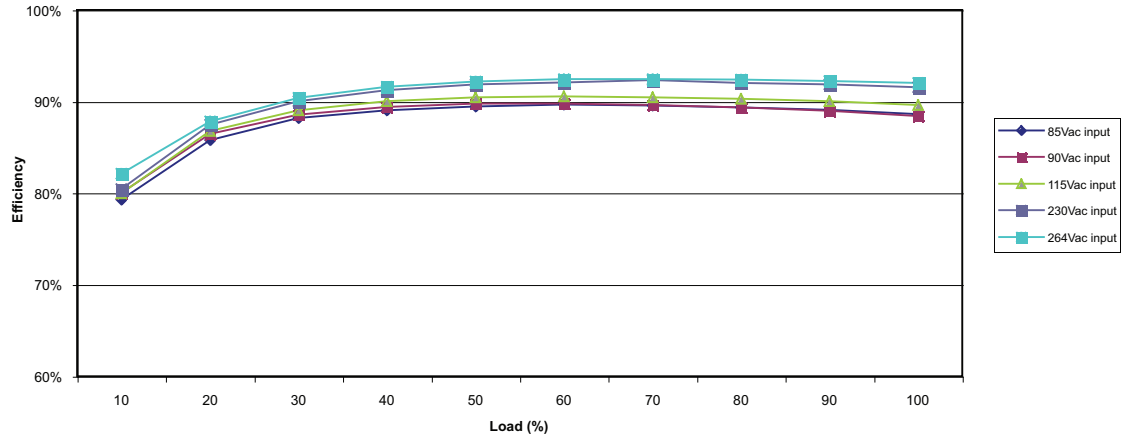
## Application Notes

### Efficiency Curves

#### ASB110PS12



#### ASB110PS24



### Lifetime

