

## 110W BASEPLATE COOLED

AC-DC POWER SUPPLIES

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.



### Features

- 110W baseplate cooled
- Complete AC-DC Power Supply
- No extra components required
- -40 to +85°C baseplate temperature
- Low profile in full brick package
- High efficiency - up to 91%
- Universal input
- <0.3W no load input power
- Optional heatsink available
- Overcurrent, overvoltage and overtemperature protection
- 3 year warranty

### Applications



Technology



IoT



COTS

### Dimensions

4.60" x 2.40" x 0.67" (116.8 x 61.0 x 17.0 mm)

### Models & Ratings

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

#### Notes:

1. Typical efficiency with 230VAC input and full load.
2. Add suffix '-HK' to receive with optional heat-sink fitted, e.g. ASB110US24-HK.

# ASB110 Series



## Input

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

## Output

Characteristic	Minimum	Typical	Maximum	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 115VAC
Line Regulation			±0.5	%	
Load Regulation			±0.5	%	
Transient Response			2	%	Maximum deviation, recovering to less than 1% within 300μs for 25% step load
Ripple and Noise			1	% pk-pk	20MHz bandwidth, measured with 20MHz Bandwidth and 10μF electrolytic in parallel with 0.1μF 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	

## 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		kHz	PFC
		50-90			PWM
Power Density		14.8		W/in <sup>3</sup>	
Mean Time Between Failure	160			khrs	MIL-HDBK-217F at 25°C GB
Weight		0.51 (230)		lb (g)	

## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+85	°C	Baseplate temperature, see derating curve
Storage Temperature	-40		+85	°C	
Cooling	Conduction cooled via baseplate				
Operating Humidity	5		90	%RH	Non-condensing
Operating Altitude			5000	m	
Shock	IEC68-2-27, 30g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500Hz, 2g 10 mins/sweep, 60 mins for each of 3 axes				

## EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Emissions	EN55032	Level B	Conducted and radiated
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

## EMC: Immunity

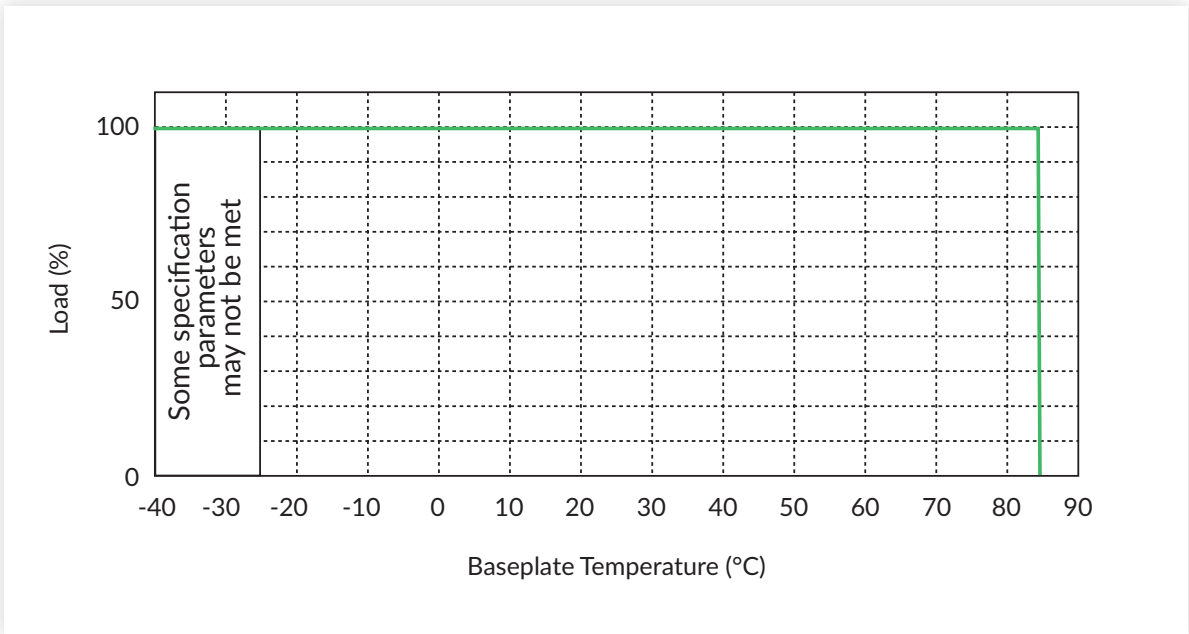
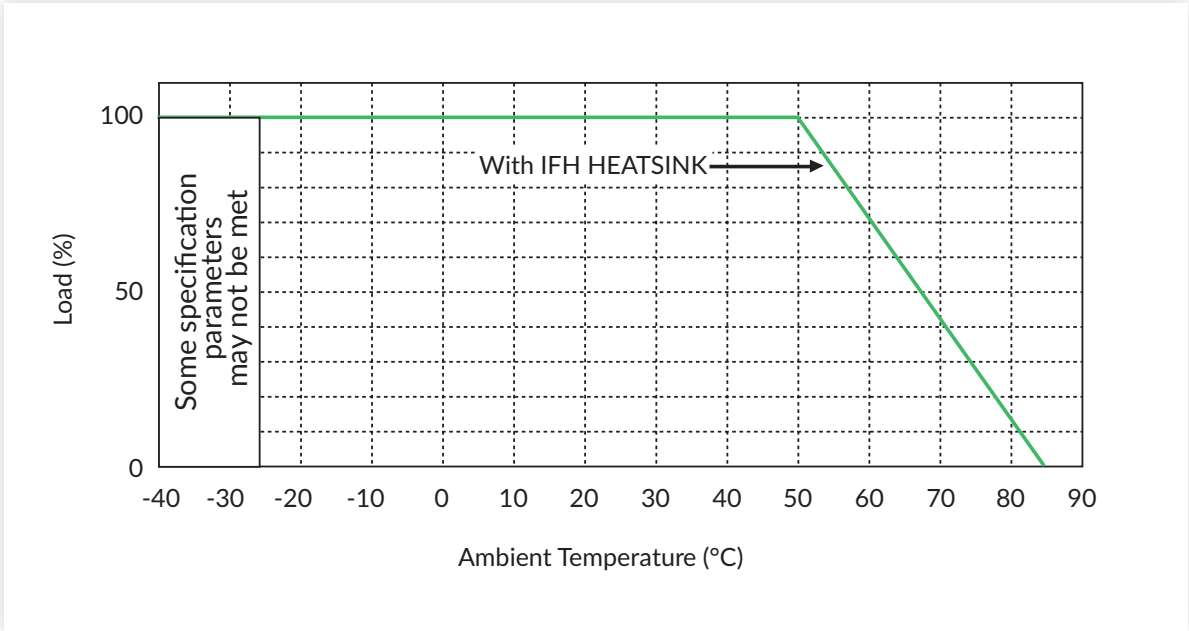
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3/2	A	±8kV air/±4kV contact
Radiated	EN61000-4-3	3V/m	A	
EFT/Burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	Installation class 3	A	
Conducted	EN61000-4-6	3V	A	
Dips and Interruptions	EN61000-4-11	Dip 100% 10ms	A	High Line/Low Line
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

## Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1, UL62368-1	
TUV	EN60950-1, EN62368-1	
CB	IEC60950-1, IEC62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

## Applications Notes

### Derating Curves

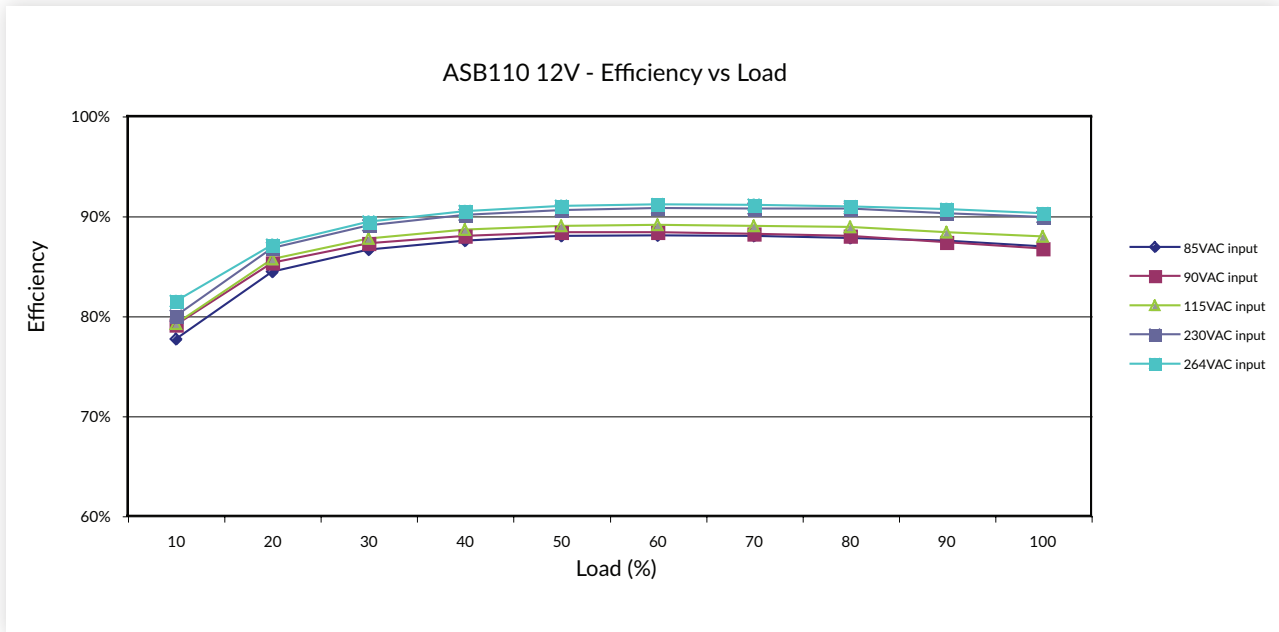


**Notes:**  
When ASB110 is fitted with IFH HEATSINK and mounted in horizontal position with heatsink upper most, the base plate temperature will typically be 85°C in an ambient of 50°C.

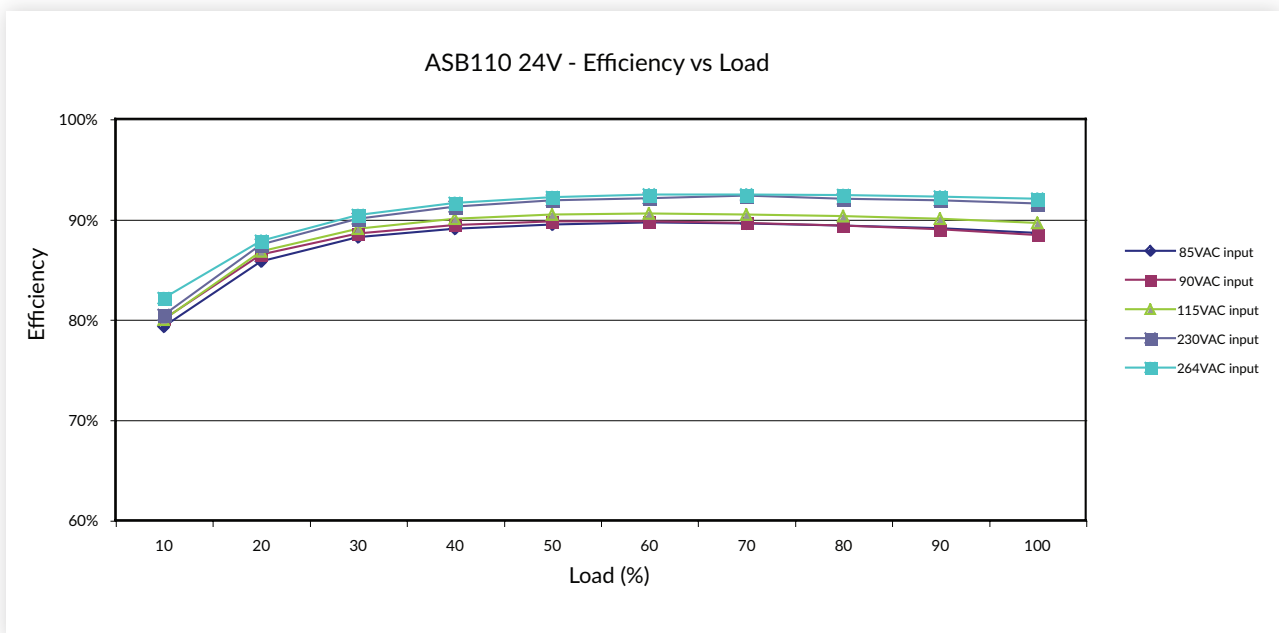
## Applications Notes

### Efficiency Curves

#### ASB110PS12



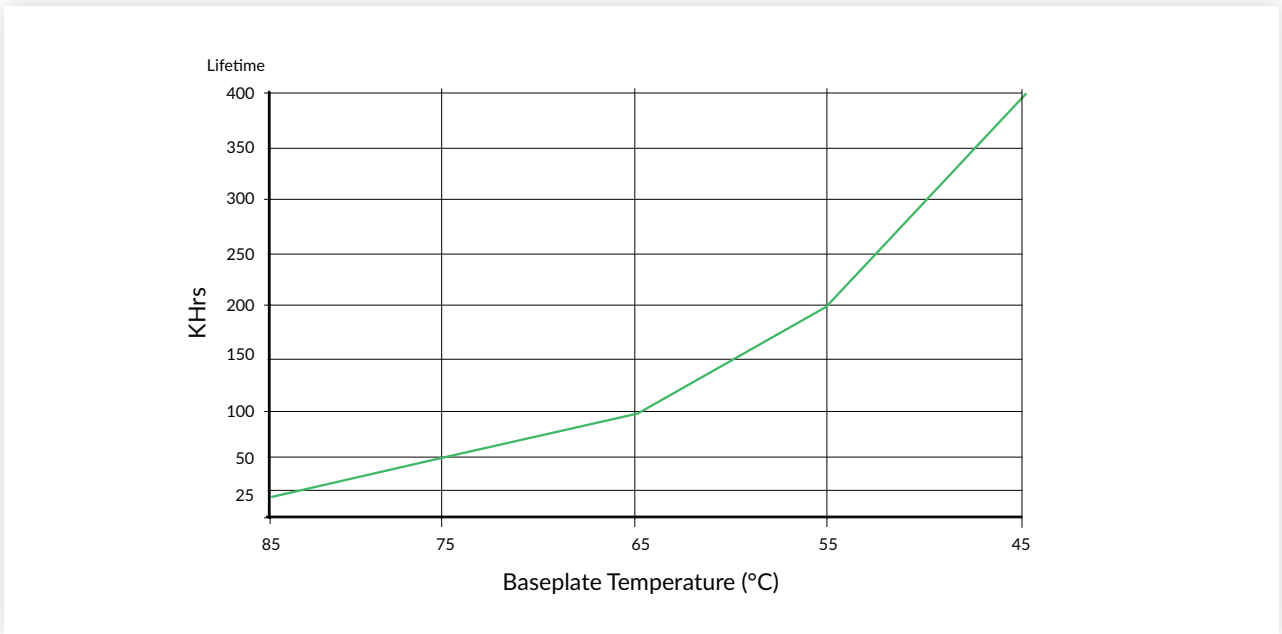
#### ASB110PS24



# ASB110 Series

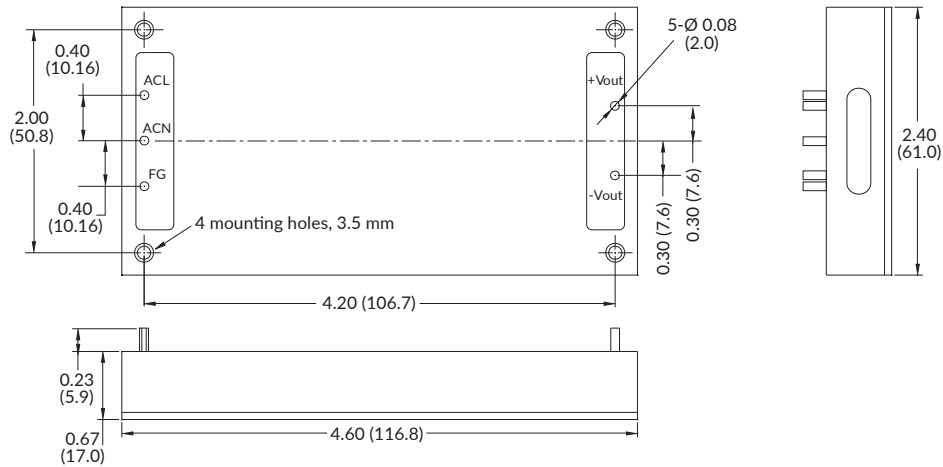
## Applications Notes

### Lifetime

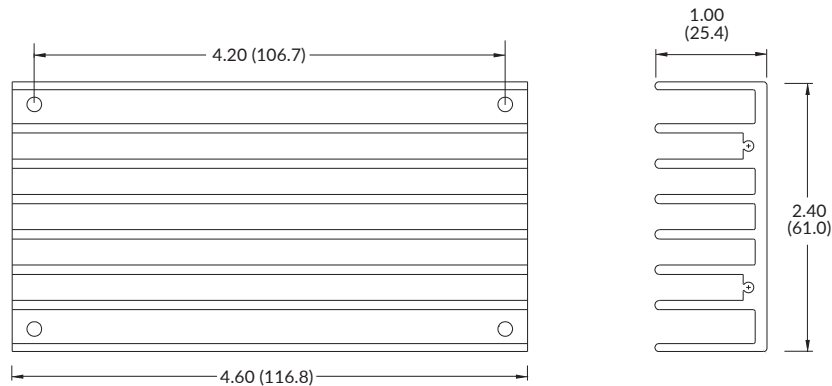


# ASB110 Series

## Mechanical Details



## Optional Heatsink (IFH HEATSINK)



Specification subject to change without notice

### Notes:

1. All dimensions shown in inches (mm)
2. Weight 0.51lb (230g) without heat-sink
3. Pin diameter:  $0.08 \pm 0.002$  ( $2.00 \pm 0.05$ )
4. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
5. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
6. Baseplate is connected to FG