

75W Baseplate cooled

AC-DC power supplies 

The ASB75 series is a range of low profile, half brick, baseplate cooled AC-DC power supplies which require no external components.

The series includes a 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 ASB75 offers high efficiency to minimise waste heat and heat sinking requirements and operates from -40°C to +85°C on the module baseplate.



Features

- ▶ 75W baseplate cooled
- ▶ Complete AC-DC power supply
- ▶ No external components required
- ▶ Low profile ½ brick package
- ▶ Universal input 90 to 264VAC
- ▶ High efficiency - up to 90%
- ▶ <0.15W no load input power
- ▶ Overcurrent, overvoltage and overtemperature protection
- ▶ Optional heat sink available
- ▶ -40 to +85°C baseplate temperature
- ▶ 3 year warranty

Applications



COTS



Industrial electronics



IoT



Technology

Dimensions

61.0 x 57.9 x 17.0 mm (2.40" x 2.28" x 0.67")
½ Brick

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number ^(2,3)	Output power	Output voltage	Output current	Noise and ripple	Efficiency ⁽¹⁾
ASB75US12	75W	12.0V	6.25A	120mV	88%
ASB75US15		15.0V	5.00A	150mV	88%
ASB75US24		24.0V	3.12A	240mV	89%
ASB75US36		36.0V	2.05A	360mV	89%
ASB75US48		48.0V	1.56A	480mV	90%

Notes:

1. Typical efficiency with 230VAC input and full load.
2. Add suffix '-HK' to receive with optional heat-sink fitted, e.g. ASB75US24-HK.
3. Heat-sink is available separately, order part number ASB75 HEATSINK.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	Derate linearly from 75W load at 100VAC to 70W load at 90VAC
Input frequency	47		63	Hz	
Input current		1.27/0.8		A	Measured at 115/230VAC
Inrush current			100	A	230 VAC, cold start at +25°C
Earth leakage current			500	μA	264 VAC, 60Hz
No load input power			0.15	W	
Input protection	Internal T2.0A/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
Output voltage trim	90		110	%	Of nominal output voltage. See application note
Minimum load	No minimum load required				
Start up delay			1.3	s	
Start up rise time			40	ms	
Hold up time	6			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 & noise			1	% pk-pk	20MHz bandwidth, measured with 20MHz Bandwidth and 10μF electrolytic in parallel with 0.1μF ceramic capacitor
Overload protection	110		140	%	
Overvoltage protection	110		140	%	Auto recovery
Short circuit protection	Trip & 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		65		kHz	
Power density		20		W/in ³	
Mean time between failure	160			khls	MIL-HDBK-217F at +25°C GB
Weight		125 (0.26)		g (lb)	

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	Class B	Conducted and radiated
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

EMC: immunity

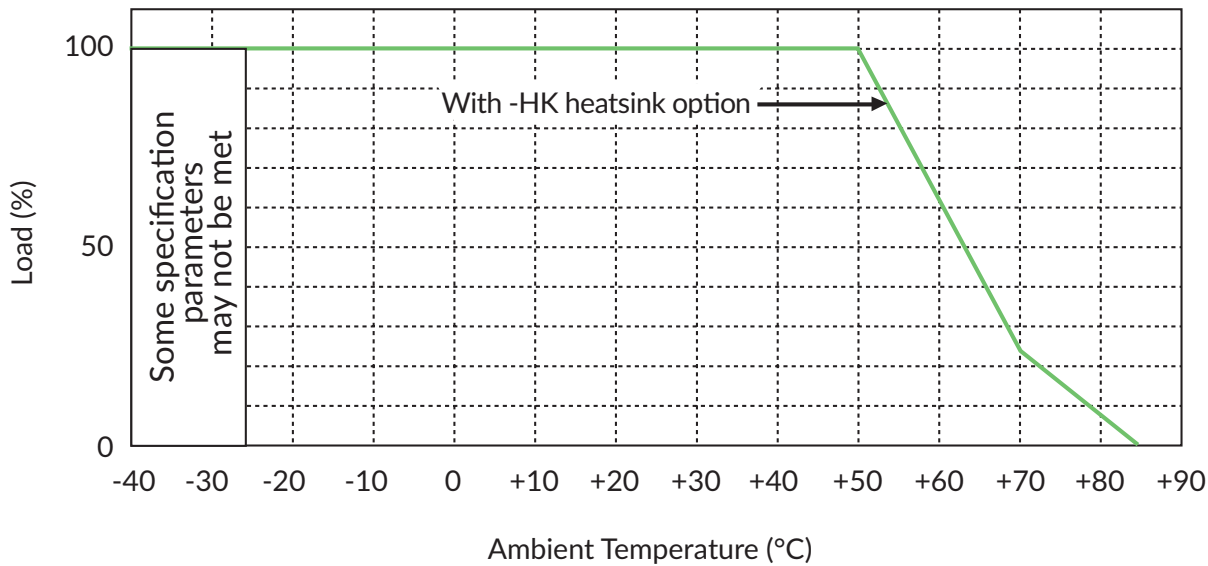
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD	EN61000-4-2	3/2	A	±8kV air / ±4kV contact
Radiated	EN61000-4-3	3V/m	A	
EFT/burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	Installation class 3	A	±2kV line to line, ±4kV line to earth
Conducted	EN61000-4-6	3V	A	
Dips and interruptions	EN61000-4-11	Dip: 100% 10ms	A/B	High line/Low line
		Dip: 30% 500ms	A/B	High line/Low line
		Int: 100% 5000ms	B	

Safety approvals

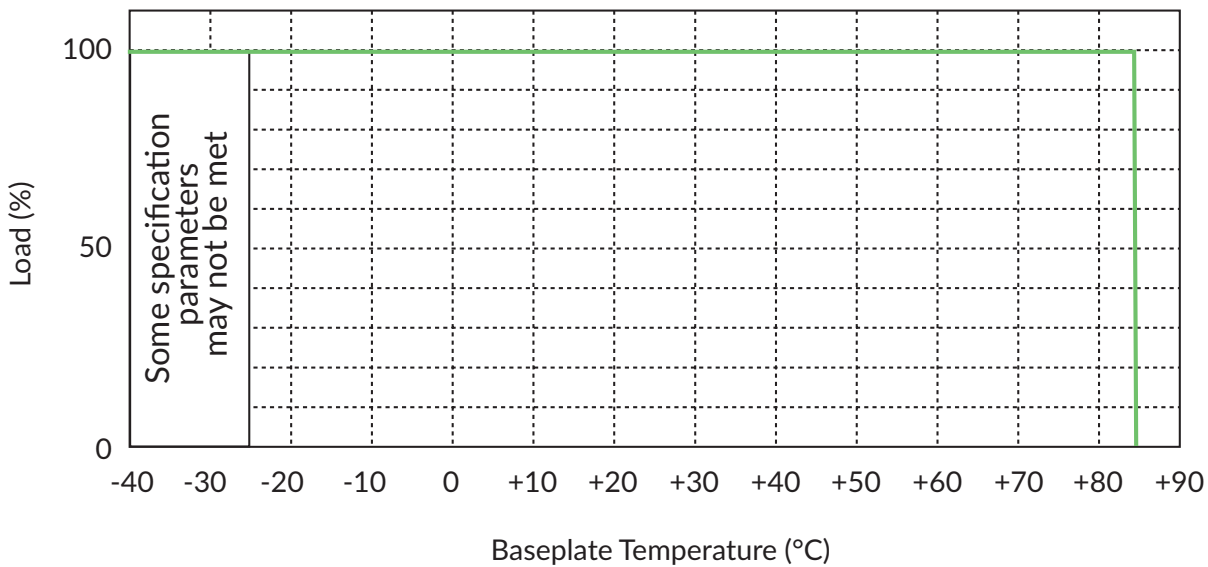
Safety agency	Standard	Notes & conditions
UL	UL62368-1	
TUV	EN62368-1	
CB	IEC62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Application notes

Derating curves



When fitted to a heatsink with thermal resistance of 2.91°C/W in natural convection)



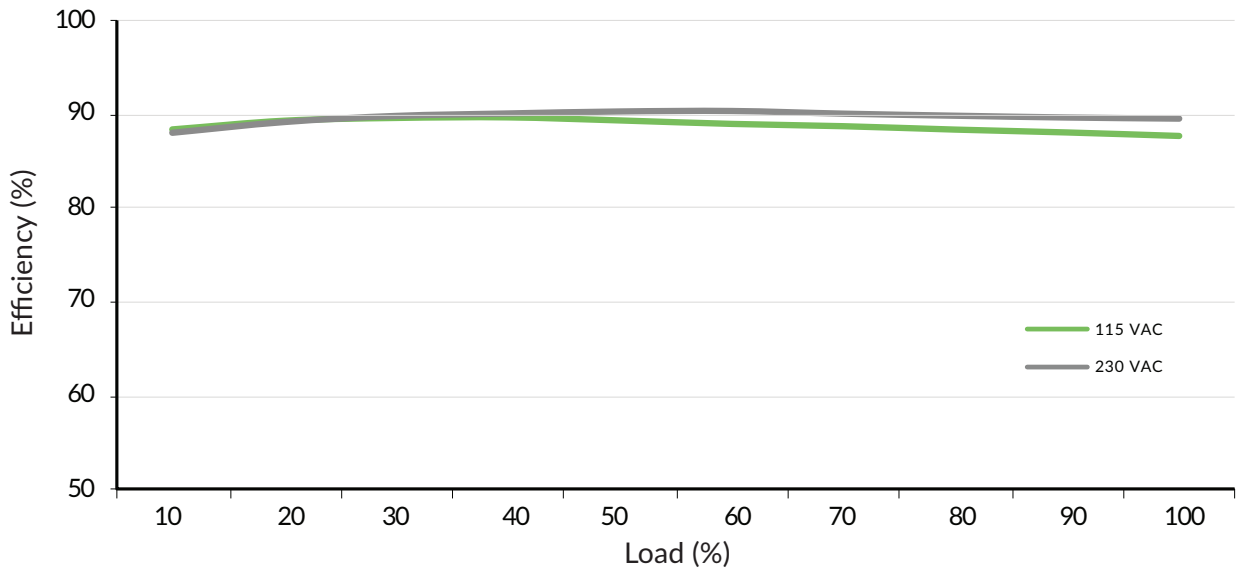
Notes:
When ASB75 is fitted with -HK heatsink option and mounted in horizontal position with heatsink upper most, the baseplate temperature will typically be +85°C in an ambient of +50°C.



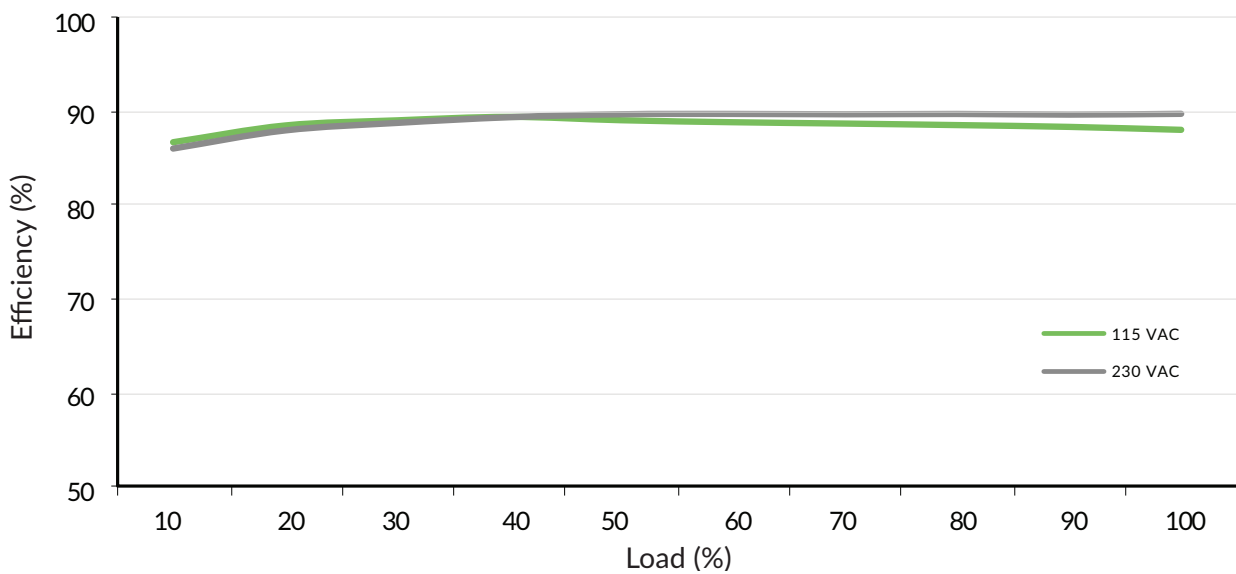
Application notes

Efficiency curves

ASB75US12



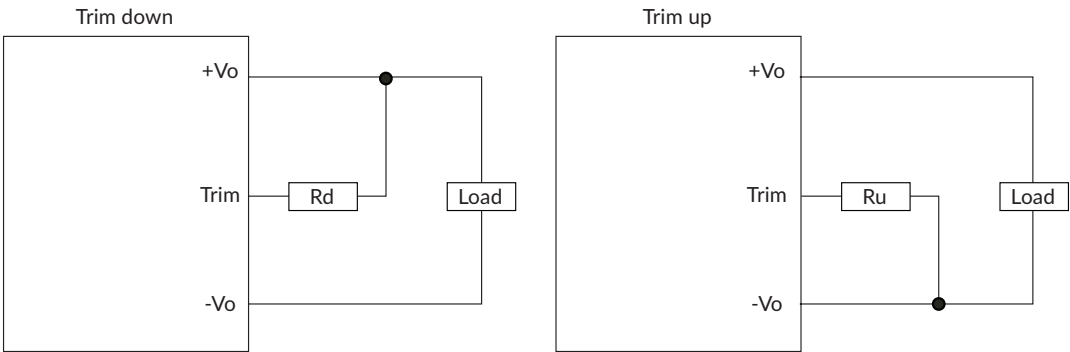
ASB75US24



Application notes

Output voltage adjustment

The Trim input permits the user to adjust the output voltage up or down by 10%. This is accomplished by connecting an external resistor between the Trim pin and either the +Vo pin or the -Vo pin.



To Trim Down

Connecting an external resistor (R_d) between the Trim pin and the +Vo pin decreases the output voltage. The following table can be used to determine the required external resistor value to obtain a percentage output voltage change of $\Delta\%$.

Trim down (%)	12V	15V	24V	36V	48V
	Rd (kΩ)				
5	82	130	180	330	390
10	9.1	30	20	30	39

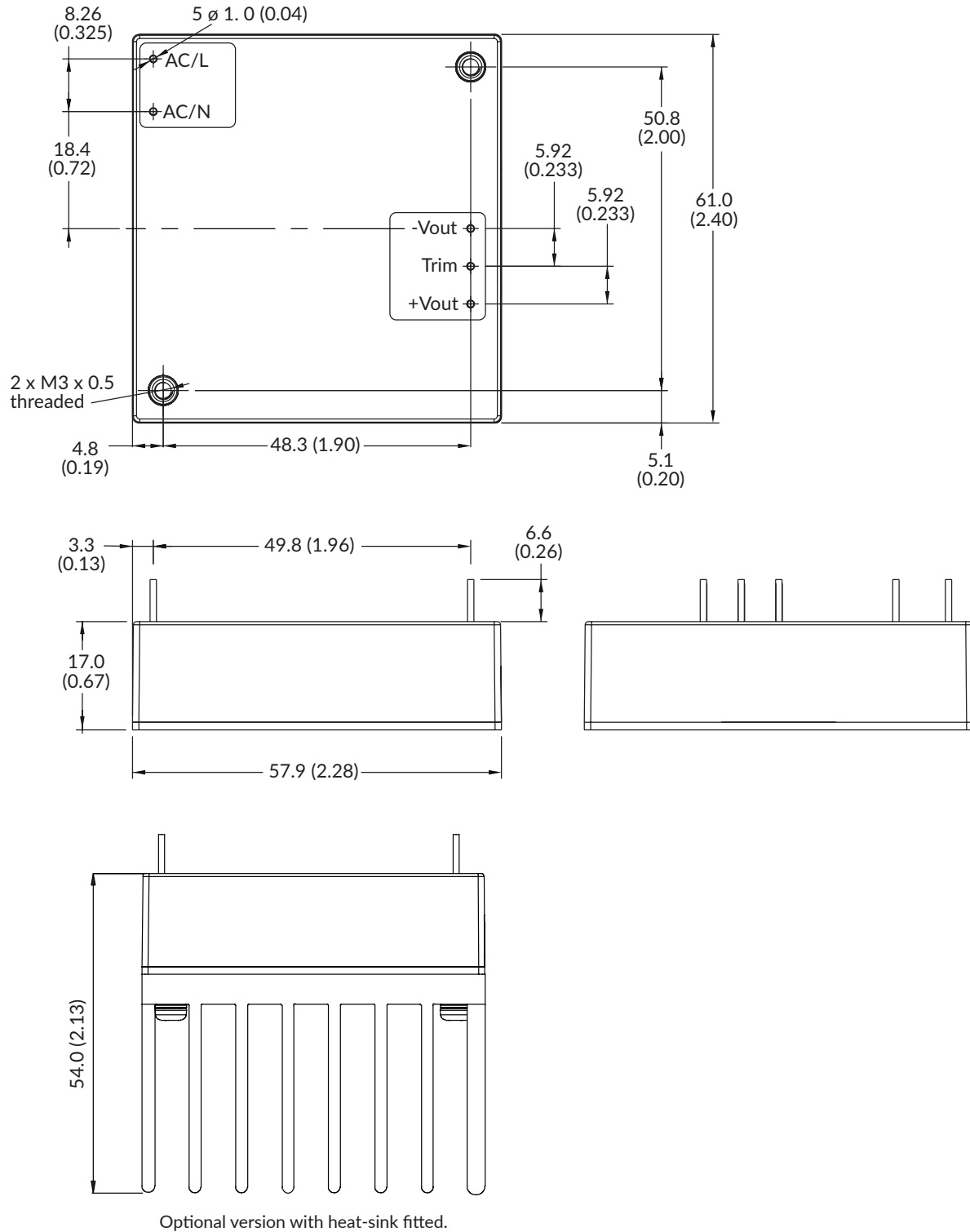
To Trim Up

Connecting an external resistor (R_u) between the Trim pin and the -Vo pin increases the output voltage. The following table can be used to determine the required external resistor value to obtain a percentage output voltage change of 5%.

Trim up (%)	12V	15V	24V	36V	48V
	Ru (kΩ)				
5	130	150	249	280	412
10	33	50	47	39	91



Mechanical details



Notes:

1. All dimensions shown in mm (inches)
2. Weight 125g (0.26lb) without heat-sink, 260g (0.57lb) with heat-sink fitted
3. Pin diameter: 1.0 $\pm$ 0.05 (0.04 $\pm$ 0.002)
4. Pin pitch tolerance: $\pm$ 0.35 ($\pm$ 0.014)
5. Case tolerance: $\pm$ 0.5 ($\pm$ 0.02)
6. Baseplate is connected to FG