

AMC50 Series

50 Watts

- 90-305VAC Input, 47-440Hz
- IEC 62368-1 ITE approval & designed to meet IEC 60335-1 Home Appliance
- Encapsulated PCB mount
- -40 to +70°C Operation
- EN55032 Level B conducted & radiated
- 5 Year warranty



Dimensions:

2.92 x 1.85 x 0.9" (74.2 x 47 x 23.1mm)

The AMC50 series of compact encapsulated AC-DC power modules are PCB mount and have low emissions, meeting EN55032 level B for both conducted and radiated noise. The units are suitable for home appliances designed to meet EN 60335-1, also they are approved to the latest EN 62368-1 safety standard. They provide 50W of power and have a wide temperature range from -40 to +70°C. The series offers low no-load power consumption of <0.1W and outputs are available from 12 to 24V. All models have a FiDUS 5 Year warranty.

Models & Ratings

Model Number	Output Power	Output voltage	Output Current	Efficiency	Capacitive Load	Ripple / Noise ⁽¹⁾
AMC5012	50W	12V	4.16A	89%	3500uF	<120mV
AMC5015	50W	15V	3.33A	88%	3000uF	<150mV
AMC5024	50W	24V	2.08A	88%	2200uF	<240mV

Notes

1. Ripple and noise measured with 20MHz bandwidth and with 0.1uF and 47uF parallel capacitors

Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	90		305	VAC	Derate at 100VAC to 80% at 90VAC
Operating temperature	-40		70	°C	Derate linearly from 100% power at 50°C to 50% power at 70°C. 80% power max at -40°C, full power from -30°C. See derating curve
Efficiency	88		89	%	See model table above. At 230VAC full load
Dimensions	2.92 x 1.85 x 0.9" (74.2 x 47 x 23.1mm)				
EMC	EN55032 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated.				
Safety	UL / IEC / EN 62368-1. Designed to meet IEC / EN 60335-1 CE				

Input

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	90		305	VAC	Derate at 100VAC to 80% at 90VAC
	120		430	VDC	DC fuse required
Input frequency	47		440	Hz	
Power factor					EN61000-3-2 class A compliant
Input current	600		1000	mA rms	1000mA 115VAC and 600mA at 230VAC
Inrush current	45		90	A	45A at 115 and 90A at 230VAC. Cold start at 25°C
No load input power			0.1	W	
Earth leakage current					Class II construction, no earth

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	12		24	VDC	See Model & Ratings table
Set point accuracy			±2	%	
Line regulation		±2		%	Low line to High line.
Load regulation		±2.5		%	0 to 100% load.
Minimum load	0			%	
Ripple & Noise	120	150	240	mV pk-pk	See model table. Noise and ripple measured with 0.1µF ceramic and 47µF electrolytic. 20 MHz bandwidth.
Hold up time		30		mS	At 230VAC. Full load
Overload protection					Trip & restart. Automatic recovery
Short circuit protection					Trip & restart. Automatic recovery
Overvoltage protection					Latch reset

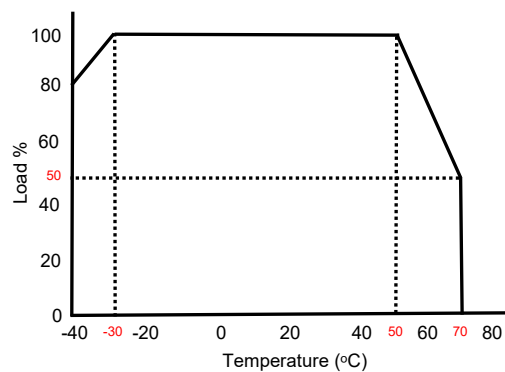
General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	88		89	%	See models & Ratings table. At 230VAC full load
Isolation	4000			VAC	Input to output
Power density			10.29	W/In ³	
MTBF		>400		KHrs	As per MIL-HDBK-217F, 25°C GB
Weight		158		g	

Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		70	°C	Derate linearly from 100% power at 50°C to 50% power at 70°C. 80% power max at -40°C, full power from -30°C. See derating curve
Storage temperature	-40		85	°C	
Cooling					Convection cooled
Temperature coefficient			±0.05	%/°C	
Humidity			95	% RH	

Derating curve



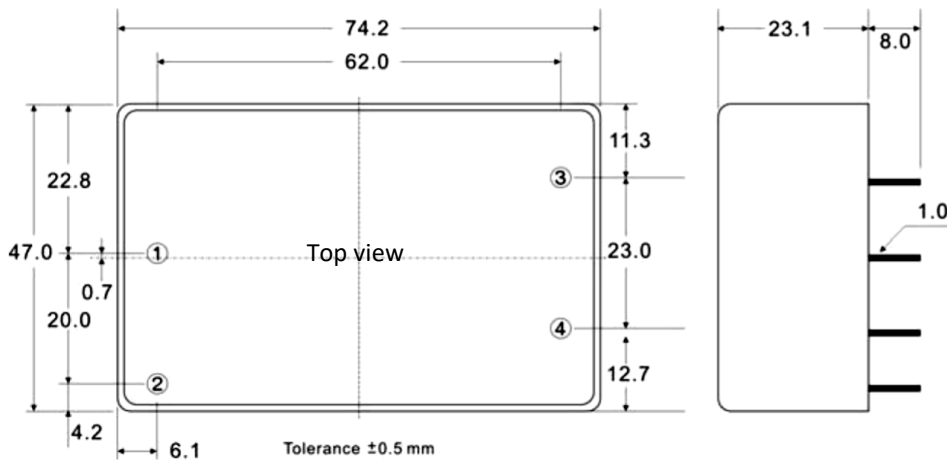
EMC: Emissions

	Standard	Test level	Criteria	Notes & Conditions
Conducted	EN55032	B		
Radiated	EN55032	B		
Harmonic current	EN61000-3-2	Class A		
Voltage flicker	EN61000-3-3			

Safety Approvals

	Safety standard	Notes & Conditions
UL	UL 62368-1	
CB	IEC 62368-1, Designed to meet IEC 60335-1	
TUV	EN 62368-1, Designed to meet EN 60335-1	
CE		2014/35/EU Low voltage directive
Equipment protection class		Class II

Mechanical Details



Pin Connections	
Pin	Function
1	AC IN (N)
2	AC IN (L)
3	-DC OUT
4	+DC OUT

Dimension notes

- All dimensions shown in millimetres