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AMEM5-Y



1 x 1" package

The AMEM5-Y high power density AC/DC converters are available in the small 1x1 inch PCB mountable package, boasting the lowest height profile in the 4000VAC isolation range and a large MTBF.

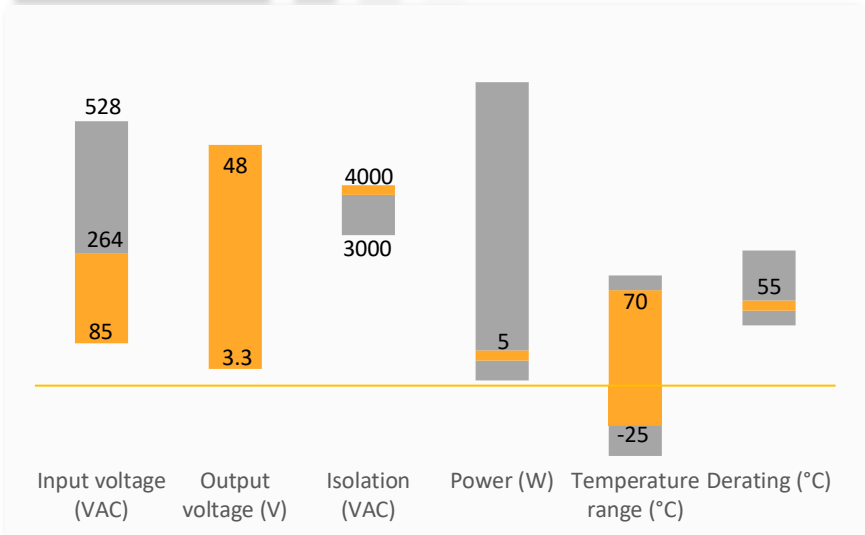
The AMEM5-Y series features a 10,000µF Maximum Capacitance load and many protective features such as over load, over voltage and continuous short circuit protection. Additionally, it offers a no-load power consumption below 0.2W and no minimum load is required for operation within the specified range. These new power converters will simplify industrial and commercial product designs, while increasing their affordability.

Features



- I/O Isolation 4000VAC
- Continuous Short circuit protection
- Operating Temp: -25 °C to +70 °C
- No load power consumption below 0.2W
- Input: 85-264VAC, 47-63Hz, or 120-370VDC
- Compact 1x1 inch package
- Over Load, Over Voltage Protection
- Efficiency up to 77%

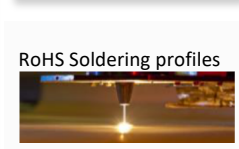
Summary



Training



Product Training Video  
(click to open)



Application Notes

Applications



Industrial



Automation



Security Systems



Test Equipment

## Models & Specifications

Single Output						
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (230VAC) ( $\mu$ F)	Efficiency 230VAC (%)
AMEM5-3.3SY	85-264/47-63	120-370	3.3	1.51	10000	73.6
AMEM5-5SY	85-264/47-63	120-370	5	1.00	7200	73.6
AMEM5-9SY	85-264/47-63	120-370	9	0.55	2200	77.6
AMEM5-12SY	85-264/47-63	120-370	12	0.41	1000	77.6
AMEM5-15SY	85-264/47-63	120-370	15	0.33	820	77.6
AMEM5-24SY	85-264/47-63	120-370	24	0.20	300	77.5
AMEM5-36SY	85-264/47-63	120-370	36	0.135	120	77.5
AMEM5-48SY	85-264/47-63	120-370	48	0.10	100	77.5

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		110	mA
	230 VAC		60	mA
Inrush current <2ms	115 VAC, cold start		30	A
	230 VAC, cold start		60	A
Leakage current	230VAC/50Hz		0.25	mA
External fuse	Slow blow type	1		A
Startup time	115VAC		3	s

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		$\pm$ 2		%
Line regulation	Full load, main input range	$\pm$ 1		%
Load regulation	0-100% load	$\pm$ 1		%
Minimum load	Single output	0		A
Ripple & Noise*	3.3,5,9,12V Output		150	mV p-p
	15,24V Output		250	mV p-p
	36V Output		360	mV p-p
	48V Output		480	mV p-p
Hold-up time	115VAC, 20MHz bandwidth	10		ms

\* 20MHz bandwidth with a 0.1 $\mu$ F CC and a 10 $\mu$ F EC

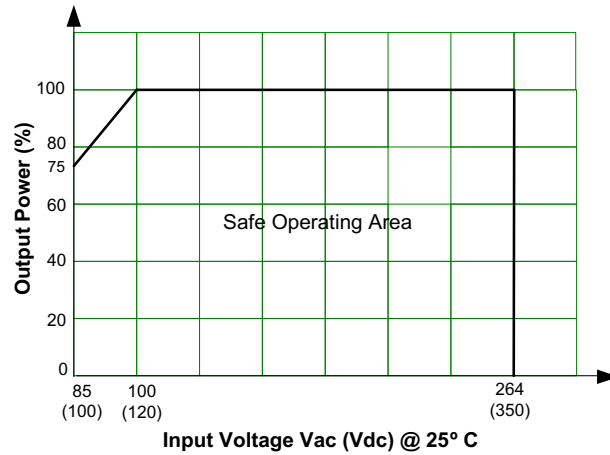
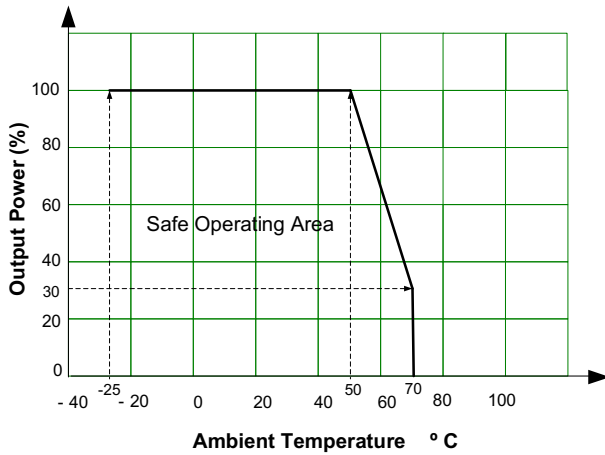
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Single output		125	KHz
Over Load protection		≥110		% of Iout
Over voltage protection	120-190% rated Vout			
Short circuit protection	Continuous, Auto recovery			
Operating temperature	See derating curve	-25 to +70		°C
Altitude			3000	m
Storage temperature		-40 to +85		°C
Storage altitude			5000	m
Maximum Case temperature			100	°C
Temperature coefficient		±0.05		% / °C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Plastic (flammability to UL 94V-0)			
Weight		18.5		g
Dimensions (L x W x H)	1.00 x 1.00 x 0.60 inches 25.4 x 25.4 x 15.2 mm			
MTBF	> 860,000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.				

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 5mA		4000	VAC

Environmental Specifications		
Vibration	Test mode	10-500Hz
	Acceleration	2G, 10min one cycle, every axis tested, 60min total duration

Safety Specifications		
Parameters		
Agency approvals	CE, cULus	
	Information technology Equipment	IEC/EN/UL 62368-1
Standards	EMI - Conducted and radiated emission	EN55032, CISPR 32 class B, FCC Part 15
	Electrostatic Discharge Immunity	IEC 61000-4-2: Contact: 4KV; Air: 8KV
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Level 2, Criterion A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 Level 2, Criterion A
	Surge Immunity	IEC 61000-4-5: 2KV
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Level 2, Criterion A
	Power frequency Magnetic Field Immunity	IEC 61000-4-8 Level 1, Criterion A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 Level C, Criterion A
	Harmonic Current Emission	IEC 61000-3-2
	Voltage Fluctuation and Flicker Emission	IEC 61000-3-3

## Derating



## Ripple & noise reduction circuit

There is an LC filter in-built on the output end. Adding an external capacitor that can build a Pi filter and greatly optimize the ripple & noise performance. The electrolytic capacitor 100uF to 220uF is recommended. If there is PCB space limitation, the 22uF MLCC is recommended a replacement. The external capacitor must be as close as to the output as possible.

