

Series AMEL5-MJZ

5 Watt | AC-DC / DC-DC Converter



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -25 °C to +70 °C
- Input: 85-264VAC, 47-63Hz, or 100-370VDC
- Over current, Over Voltage Protection
- High efficiency up to 81%
- No load consumption $\leq 0.3W$
- IEC/EN/UL60601, 2xMOPP
- Leakage current $< 80\mu A$

Models Single output



Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (μF)	Efficiency (%)
						230 VAC
AMEL5-5SMJZ	85-264/47-63	100-370	5	1	4000	76
AMEL5-12SMJZ	85-264/47-63	100-370	12	0.42	820	80
AMEL5-15SMJZ	85-264/47-63	100-370	15	0.333	820	81
AMEL5-24SMJZ	85-264/47-63	100-370	24	0.23	330	81

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		120	mA
	230 VAC		70	mA
Inrush current <2ms (cold start)	115 VAC	10		A
	230 VAC	20		A
Leakage current	264 VAC		80	μA
External fuse	Recommended slow blow type		2A/250V	
Input Dissipation (No Load)	No load (110/230VAC)		0.3	W

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		± 2		%
Line regulation		± 0.5		%
Load regulation	10-100% load	± 1		%
Ripple & Noise *	20MHz Bandwidth	50	100	mV p-p
Hold-up time	115VAC	10		ms
	230VAC	80		

*Ripple and Noise are measured at 20MHz bandwidth by using the referenced Application circuit.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec	4000		VAC
Isolation Resistance		> 1000		M Ω

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		140		KHz
Protection class		Class II		
Over Current protection	Auto recovery	110 - 280		% of Iout
Over voltage protection		Zener diode clamp		
Short circuit protection		Continuous, hiccup, Auto recovery		
Operating temperature	See derating curve	-25 to 70		°C
Storage temperature		-25 to +105		°C
Maximum Case temperature			95	°C
Temperature coefficient		0.02		% / °C
Cooling	Free air convection			
Humidity	Non condensing		95	% RH

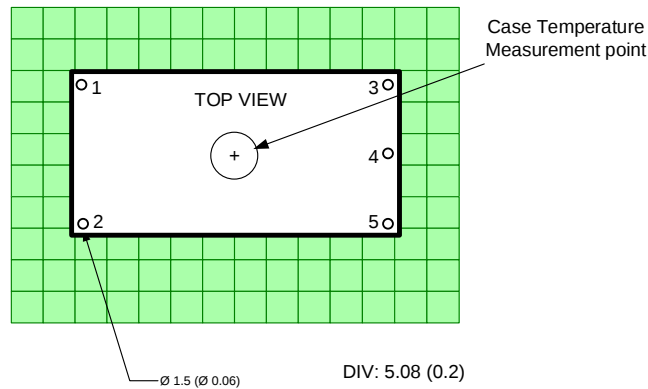
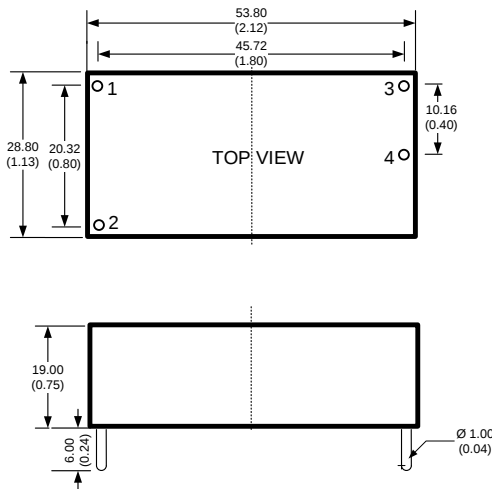
Case material	Plastic (flammability to UL 94V-0)			
Weight		43		g
Dimensions (L x W x H)	2.12 x 1.13 x 0.75 inches	53.80 x 28.80 x 19.00mm		
MTBF	> 300,000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

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.

Safety Specifications

Parameters		
Agency approvals	cULus	
Standards	Medical Electrical Equipment	IEC\ENUL 60601-1, 2 x MOPP, CSA-C22.2 No. 601.1-M90
	EMI - Conducted and radiated emission	EN55011, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2, Contact $\pm 6\text{KV}$ / Air $\pm 8\text{KV}$, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, $\pm 2\text{KV}$, Criteria B, $\pm 4\text{KV}$ with the recommended circuit below
	Surge Immunity	IEC 61000-4-5, $\pm 1\text{KV}$, Criteria B, $\pm 2\text{KV}/4\text{KV}$ with the recommended circuit below
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, 10 Vrms, Criteria A
	Power frequency Magnetic Field Immunity	IEC 61000-4-8, 10 A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11, 0-70%, Criteria B

Dimensions

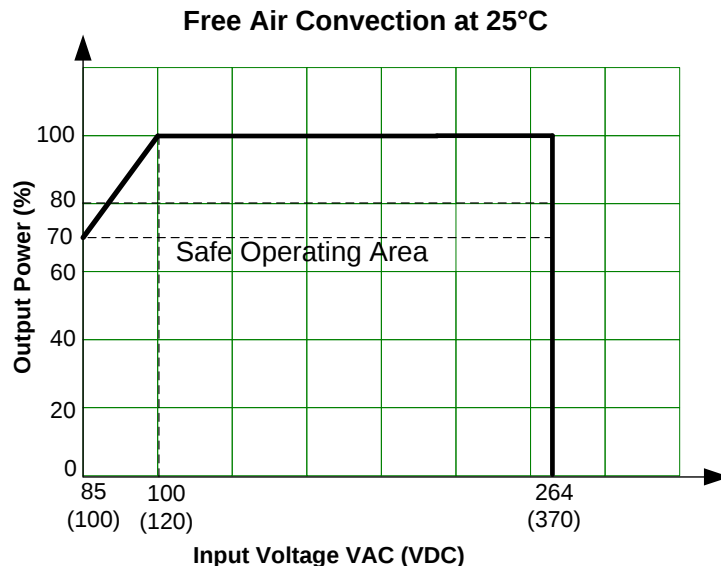
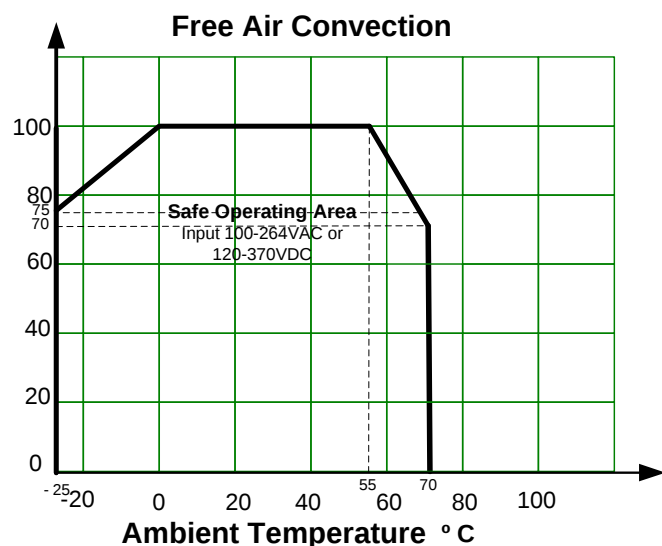


Dimensions mm (inch)
 Case Tolerance ± 0.50 (± 0.02)
 Pin Diameter 1.0 ± 0.10 (0.04 ± 0.004)
 Pin Pitch Tolerance ± 0.35 (± 0.014)

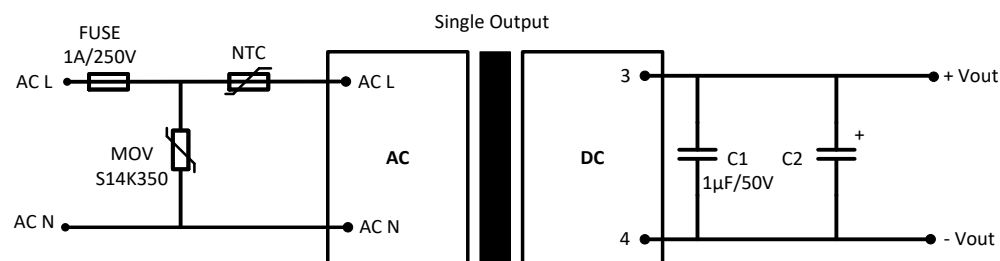
Pin Out Specifications

Pin	Single
1	AC Input (N)
2	AC Input (L)
3	+V Output
4	-V Output

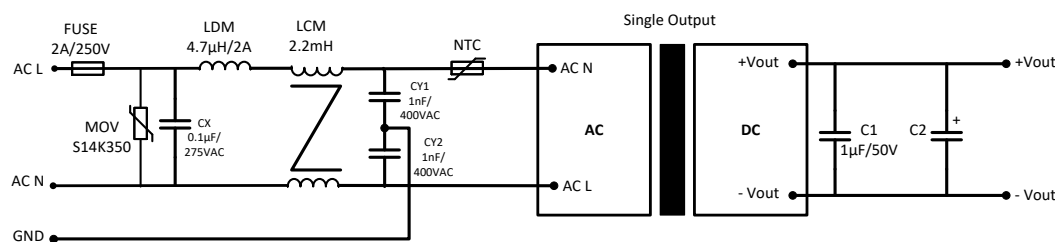
Derating



Typical application circuit



EMC recommended circuit



Model	C2
5 Vout	220 μF / 35V
12 & 15 Vout	100 μF / 35V
24 Vout	47 μF / 35V

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.