

## Series AMEL5-CJZ

### 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 83%
- No load consumption  $\leq 0.3W$
- Ultra-small package
- Short Circuit Protection



#### Models Single output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load ( $\mu F$ )	Efficiency (%)
						230 VAC
AMEL5-3.3SCJZ	85-264/47-63	100-370	3.3	1.25	4000	74
AMEL5-5SCJZ #	85-264/47-63	100-370	5	1	4000	78
AMEL5-9SCJZ	85-264/47-63	100-370	9	0.55	1000	78
AMEL5-12SCJZ #	85-264/47-63	100-370	12	0.42	820	80
AMEL5-15SCJZ	85-264/47-63	100-370	15	0.333	820	82
AMEL5-24SCJZ	85-264/47-63	100-370	24	0.23	330	83

Add suffix “-ST” for optional screw terminal bottom plate or “-STD” for optional DIN Rail screw terminal bottom plate.

#### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		150	mA
	230 VAC		70	mA
Inrush current <2ms (cold start)	115 VAC	10		A
	230 VAC	20		A
External fuse	Recommended slow blow type	1.5		A
Input Dissipation (No Load)	No load (110/230VAC)		0.3	W

#### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output	$\pm 3$		%
	Others	$\pm 2$		%
Line regulation		$\pm 0.5$		%
Load regulation	10-100% load	$\pm 1$		%
Ripple & Noise *	20MHz Bandwidth, 3.3 / 5V models	60	120	mV p-p
	20MHz Bandwidth, others	50	100	
Hold-up time (minimum)	115VAC	12		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 $\Omega$

#### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		140		KHz
Protection class		Class II		
Over Current protection	Auto recovery	$\geq 110$		% of Iout
Over voltage protection		Zener diode clamp		
Short circuit protection		Continuous, hiccup, Auto recovery		
Operating temperature	See derating curve	-25 to 70°C		°C
Storage temperature		-25 to +105		°C

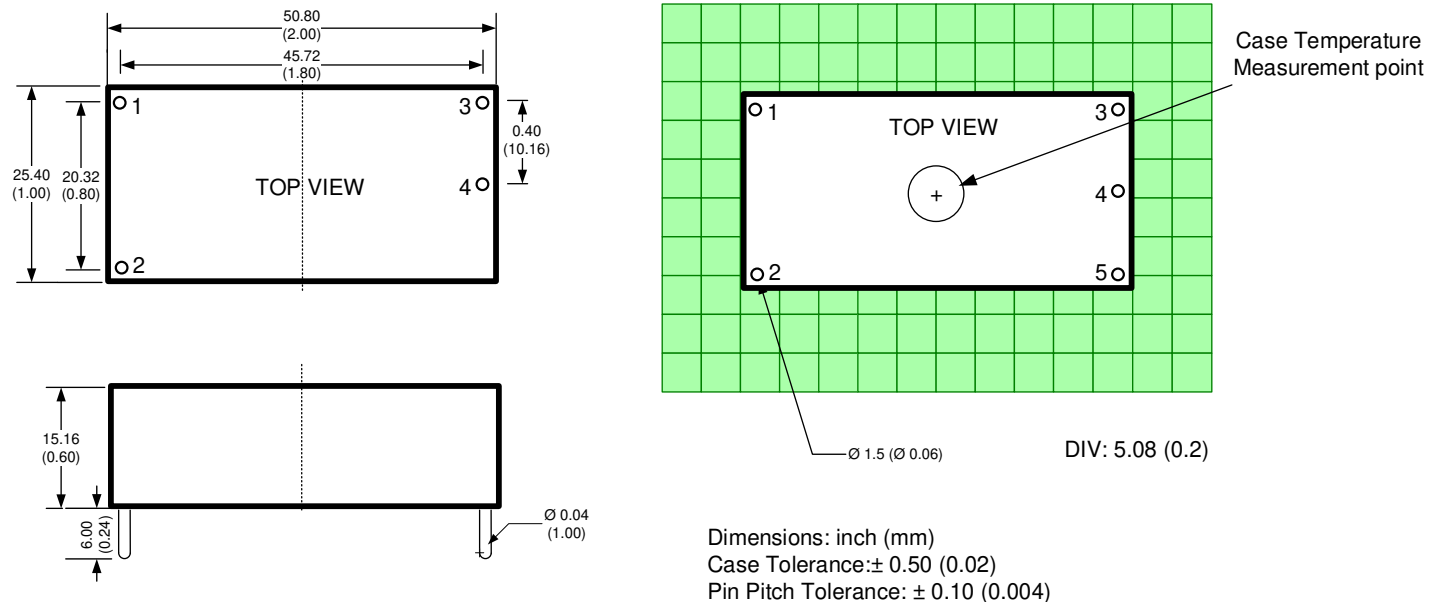
Maximum Case temperature			100	°C
Temperature coefficient		0.02		% /°C
Cooling	Free air convection			
Humidity	Non-condensing			
Case material	Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models	31		g
	With optional -ST mounting plate:	52		
	With optional -STD mounting plate:	70		
Dimensions (L x W x H)	PCB mountable models	2.0 x 1.0 x 0.6 inches	50.80 x 25.40 x 15.16mm	
	With optional -ST mounting plate:	2.99 x 1.24 x 0.94 inches	76.00 x 31.50 x 23.96mm	
	With optional -STD mounting plate:	2.99 x 1.24 x 1.02 inches	76.00 x 31.50 x 25.80mm	
MTBF	> 300,000 hrs (MIL-HDBK -217F, t <sub>a</sub> =+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	UL 60950-1 (except AMEL5-9SCJZ), UL 60601-1, EN/UL 62368-1 (With models marked with # only)	
Standards	Designed to meet IEC/EN/UL 60950-1, IEC/EN 60601-1, IEC 62368-1	
	EMI - Conducted and radiated emission	EN55022, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2, Contact: ±4KV/Air: ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, ±2KV, Criteria B
	Surge Immunity	IEC 61000-4-5, ±1KV/±2KV, Criteria B
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, 10Vrms, Criteria A
	Power frequency Magnetic Field Immunity	IEC 61000-4-8, 10A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11, 0-70%, Criteria B

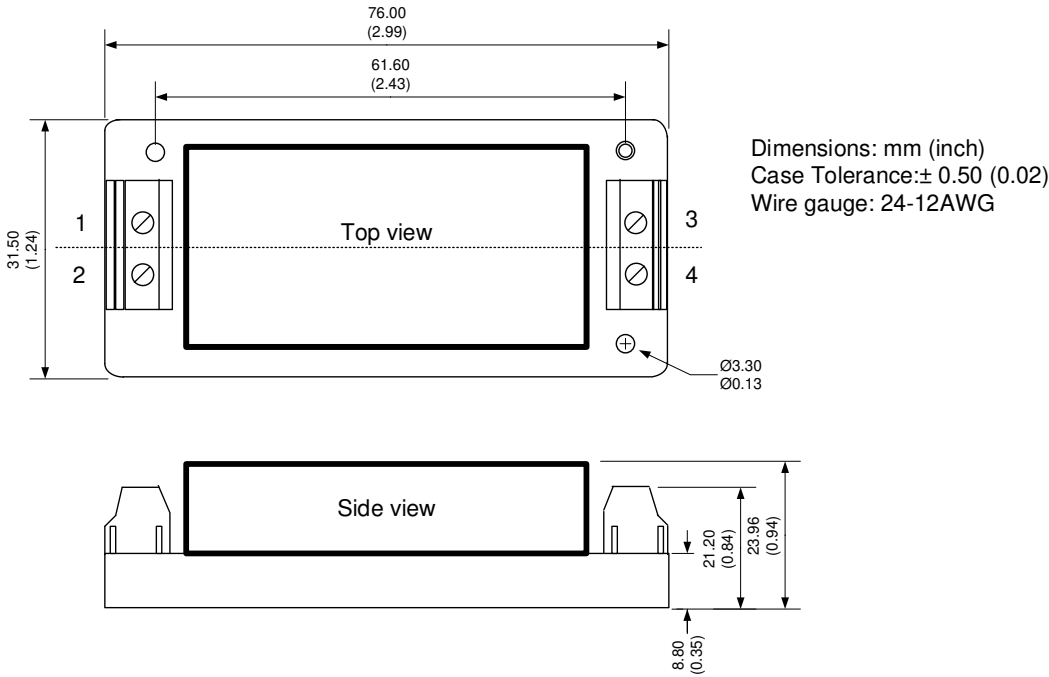
### Dimensions



### Pin Out Specifications

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

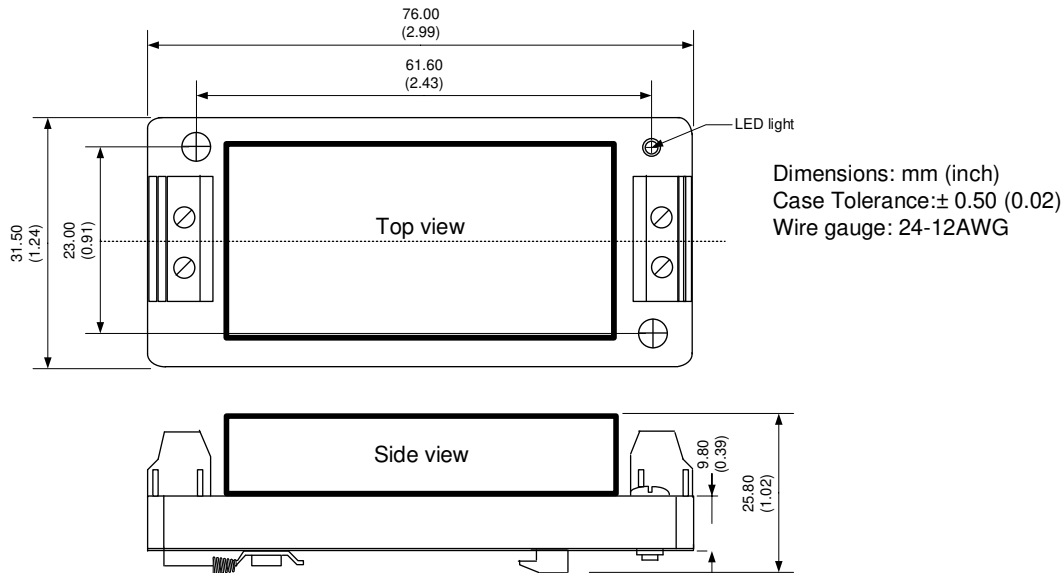
**Dimensions with -ST options**



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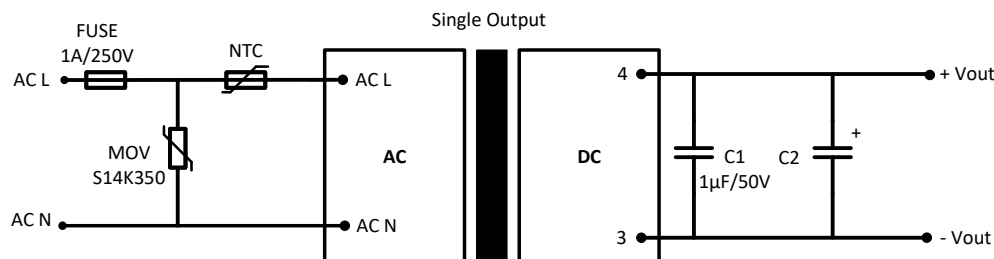
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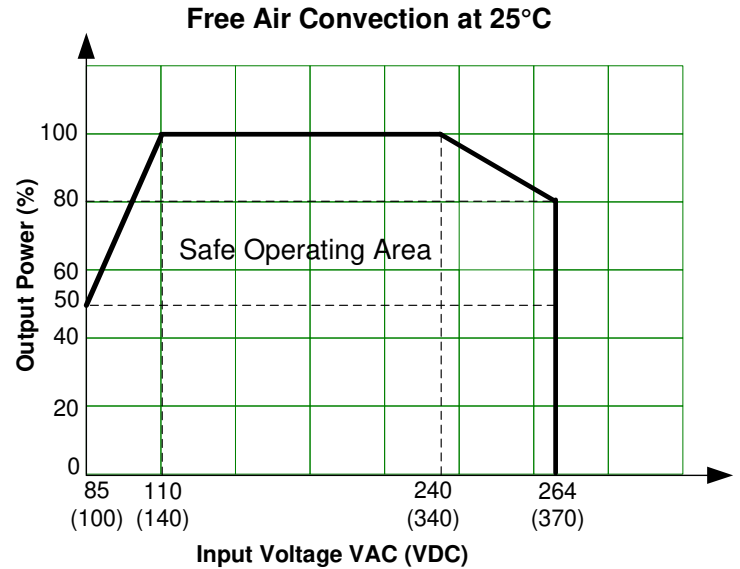
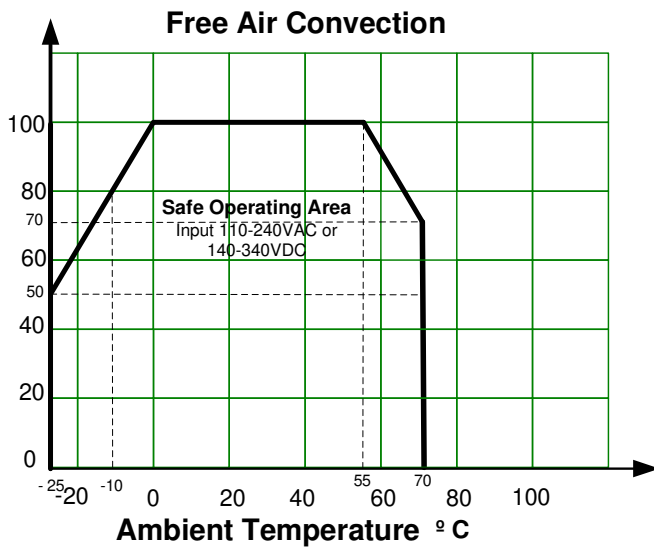
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**Typical application circuit**

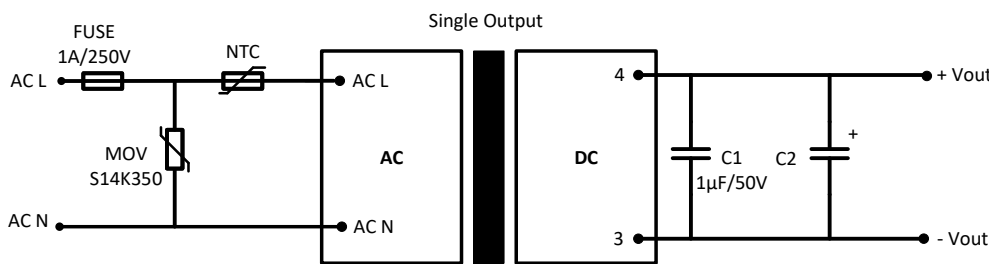


Model	C2
3.3 & 5 Vout	220 µF / 35V
9, 12 & 15 Vout	120 µF / 35V
24 Vout	47 µF / 35V

### Derating

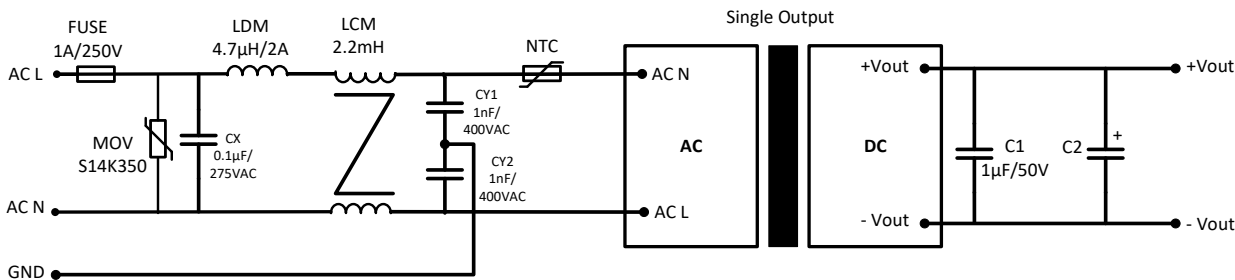


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### EMC recommended circuit to meet IEC 61000-4-4: ±4KV & IEC 61000-4-5: ±2KV/±4KV



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