aimtec
Your Power Partner

Series AMEL20-CJZ

20 Watt | AC-DC / DC-DC Converter

FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -40˚C to +70˚C
- Over current, Over Voltage Protection
- Input: 85-264VAC, 47-63Hz, or 100-370VDC
- Continuous Short Circuit Protection
- Up to 83% efficiency
- Low ripple and noise

Models

Single output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency (%)
AMEL20-3.3SCJZ	85-264/47-63	100-370	11.8	3.3	3.6	10,000	74
AMEL20-5SCJZ	85-264/47-63	100-370	18	5	3.6	6,600	78
AMEL20-9SCJZ	85-264/47-63	100-370	20	9	2.2	4,400	79
AMEL20-12SCJZ	85-264/47-63	100-370	20	12	1.66	3,000	82
AMEL20-15SCJZ	85-264/47-63	100-370	20	15	1.33	2,000	83
AMEL20-24SCJZ	85-264/47-63	100-370	20	24	0.833	800	83

*Output power must not exceed the listed values.

Note: Add suffix “-ST” for optional screw terminal bottom plate or “-STD” for optional DIN Rail screw terminal bottom plate. (ex. AMEL20-3.3SCJZ-ST, AMEL20-3.3SCJZ-STD).

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.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current	115VAC	0.37	0.44	A
	230VAC	0.24	0.26	A
Inrush current	115VAC	12		A
	230VAC	36		A
External fuse	slow blow type	3.15A/250V		

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output	±3		%
	Others	±2		%
Line regulation	Full load	±0.5		%
Load regulation	0%-100% load	±1		%
Ripple & Noise*	20MHz bandwidth	50	120	mV p-p
Hold up time	115VAC	10		ms
	230VAC	55		ms

* Please refer to the application note for specific details.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, ≤5mA		4000	VAC

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100		KHz
Protection class	Class II			
Over current protection	Auto recovery	≥110		% of Iout
Over voltage protection	3.3V, 5V output		7.5	V
	9V output		15	V
	12V, 15V output		20	V
	24V output		30	V
Short circuit protection	Continuous, hiccup			
Short circuit restart	Auto recovery			

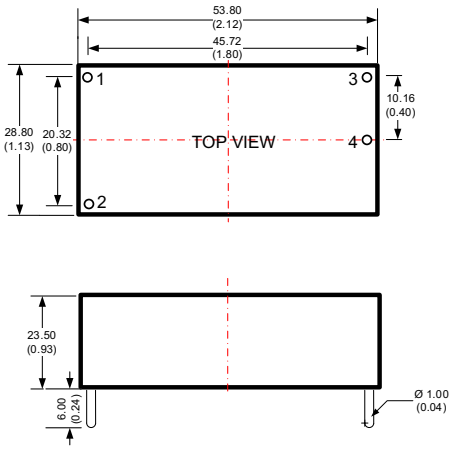
Operating temperature	See derating table	-40 to +70		°C
Storage temperature		-40 to +85		°C
Temperature coefficient		±0.02		% / °C
Power derating	-40 to 0°C	1.67		% / °C
	+40 to +70°C, 3.3/5Vout models	2.66		% / °C
	+40 to +70°C, other models	2.33		% / °C
	85 to 130VAC, -25 to +70°C, 5Vout model	0.66		% / VAC
	85 to 130VAC, -40 to -25°C, 5Vout model	1.33		% / VAC
	85 to 100VAC, -25 to +70°C, other models	2		% / VAC
	85 to 100VAC, -40 to -25°C, other models	4		% / VAC
	240 to 264VAC	0.83		% / VAC
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Black Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models With optional -ST mounting plate With optional -STD mounting plate	60 80 100		g
Dimensions (L x W x H)	PCB mountable models With optional -ST mounting plate With optional -STD mounting plate	2.11 x 1.13 x 0.92inches (53.80 x 28.80 x 23.50mm) 2.99 x 1.24 x 1.27inches (76.00 x 31.50 x 32.30mm) 2.99 x 1.24 x 1.45inches (76.00 x 31.50 x 36.90mm)		
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			
Soldering temperature	Wave soldering, duration 5 to 10s	260		°C
	Manual soldering, duration 3 to 5s	360		°C

Safety Specifications

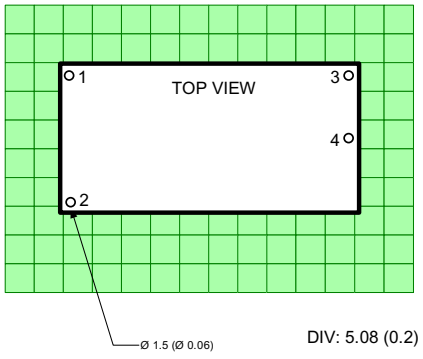
Parameters		
Agency approval	cULus	
Standards	Information technology Equipment	UL60950-1, UL62368-1
	EMI - Conducted and radiated emission	EN55032, class B
	Electrostatic Discharge Immunity	IEC61000-4-2, Contact ±6KV/ Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC61000-4-4, ±4KV, Criteria B
	Surge Immunity	IEC61000-4-5, L-L ±2KV, Criteria B IEC61000-4-5, L-L ±4KV/ L-G ±6KV, Criteria B (With the recommended circuit)
	RF, Conducted Disturbance Immunity	IEC61000-4-6, 10Vrms, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC61000-4-11, 0% 70%, Criteria B

Pin Out Specifications

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

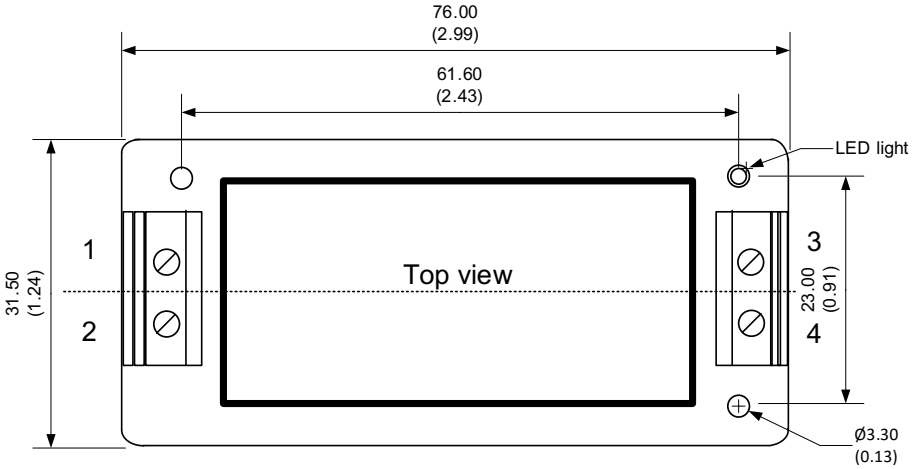


Dimensions



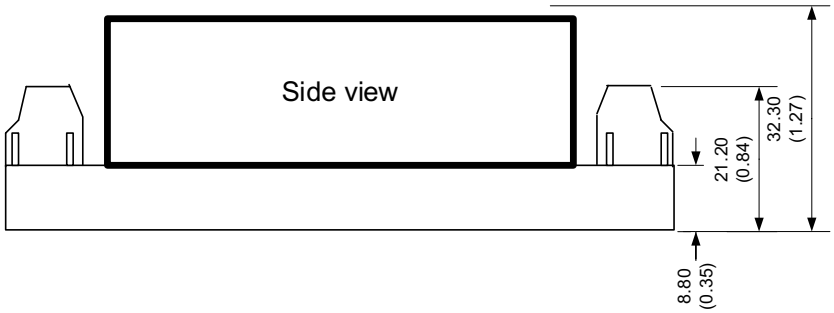
Dimensions mm (inch)
General Tolerance ±0.50 (±0.02)
Pin Diameter 1.0 ± 0.10 (0.04 ± 0.004)

With optional -ST bottom plate



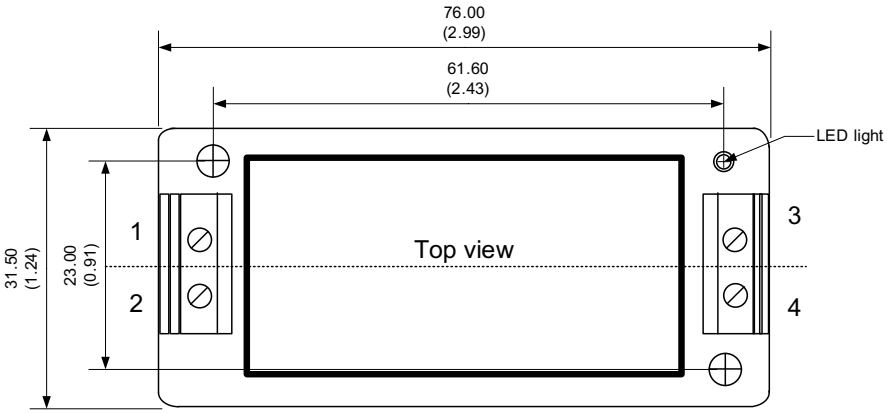
Pin Out Specifications

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



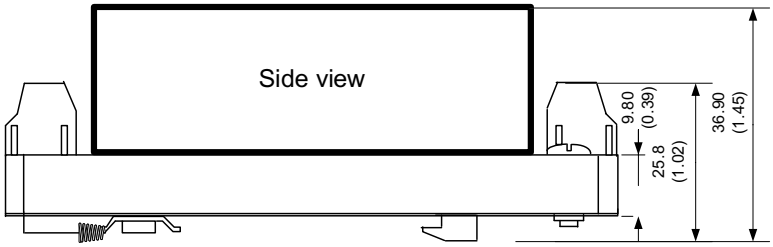
Dimensions: mm (inch)
General tolerance:± 1.00 (0.04)
Wire gauge: 24-12AWG
Tightening torque: 0.4N-m

With optional -STD bottom plate



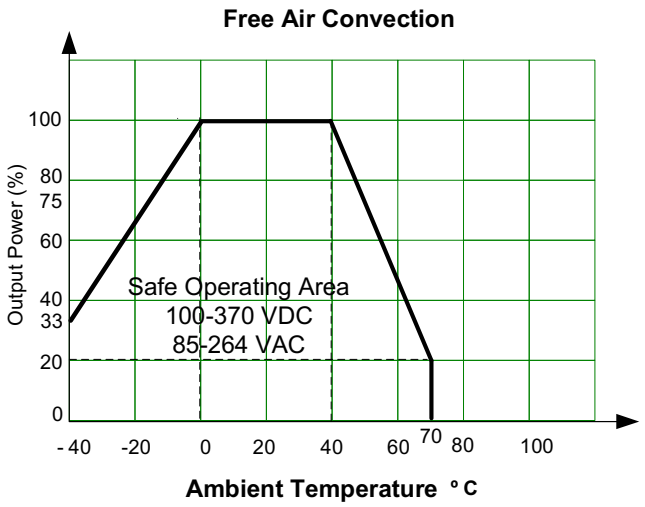
Pin Out Specifications

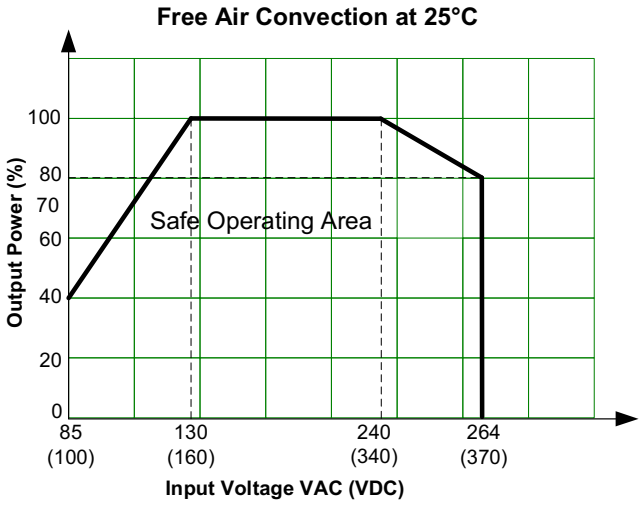
Pin	Single
1	AC Input (N)
2	AC Input (L)
3	+V Output
4	-V Output



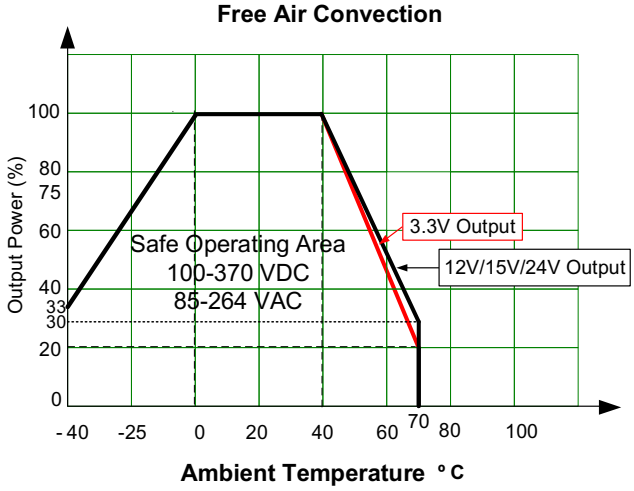
Dimensions: mm (inch)
General tolerance:± 1.00 (0.04)
Wire gauge: 24-12AWG
Tightening torque: 0.4N-m
Rail type: TS35

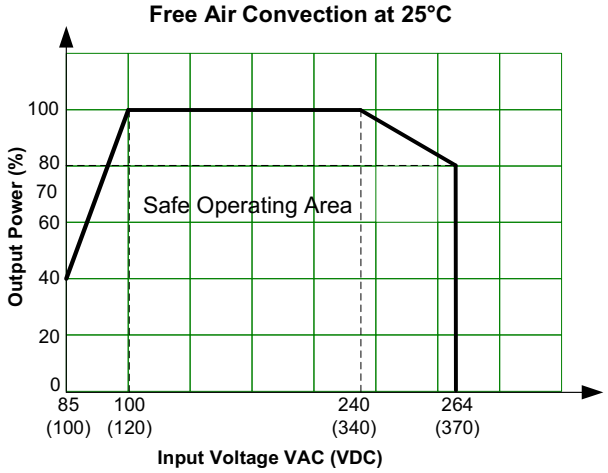
Derating for AMEL20-5SCJZ



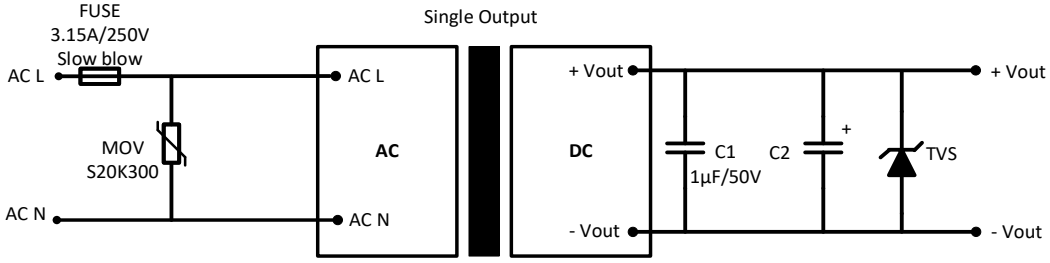


Derating for all other part numbers





Typical application circuit

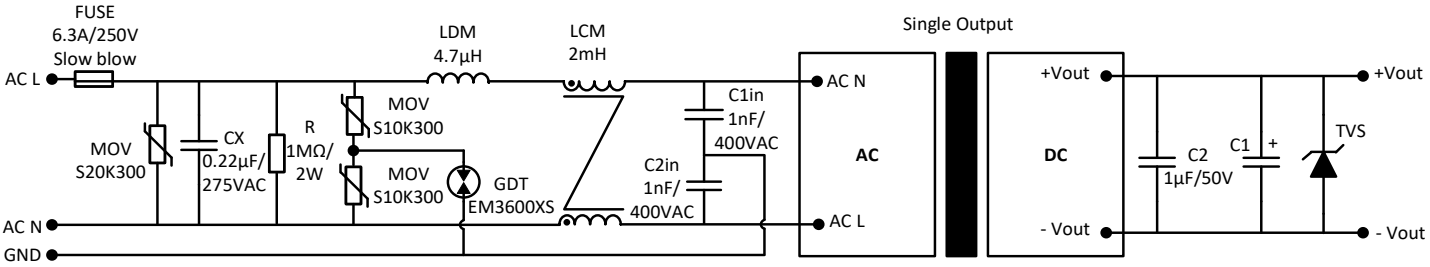


Model	C2	C2 (For high frequency switch type load)	TVS
3.3 & 5 Vout	220 µF / 16V	470 µF / 16V (Solid capacitor)	7V
9 Vout	120 µF / 25V	470 µF / 16V (Solid capacitor)	12V
12 & 15 Vout	120 µF / 25V	390µF / 25V	20V
24 Vout	68 µF / 35V	220µF / 35V	30V

For filtering components:

Choose capacitors with at least 20% voltage margin. The C2 capacitor is recommended to use electrolytic type with high frequency and low ESR rating. The C1 capacitor is recommended to use ceramic type for filtering high-frequency noise.

To meet surge Immunity ±4KV/±6KV recommended circuit



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