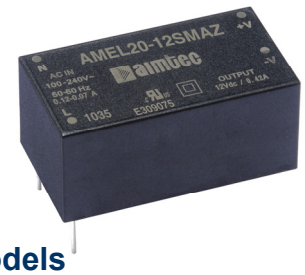
Series AMEL20-MAZ

20 Watt | AC-DC Converter



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -40 °C to +80 °C
- Over load, Over Voltage, Short Circuit Protection
- Up to 82% efficiency
- Energy Star compliant
- Ultra small package
- Soft start

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 (%)
AMEL20-3.3SMAZ	90-264/47-440	120-370	13.2	3.3	4	5600	74
AMEL20-5SMAZ	90-264/47-440	120-370	20	5	4	4700	78
AMEL20-12SMAZ	90-264/47-440	120-370	20	12	1.66	3300	82
AMEL20-15SMAZ	90-264/47-440	120-370	20	15	1.33	2200	82
AMEL20-24SMAZ	90-264/47-440	120-370	20	24	0.84	1000	82

Models
Asymmetric Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Rated Output Current (A)	Maximum capacitive load (µF)	Efficiency (%)
AMEL20-3.35DMAZ	90-264/47-440	120-370	17.5	3.3/5	1.4/2.5	1000	75
AMEL20-3.312DMAZ	90-264/47-440	120-370	18	3.3/12	1.4/1.1	1000	78
AMEL20-3.315DMAZ	90-264/47-440	120-370	18	3.3/15	1.4/0.89	1000	77
AMEL20-3.324DMAZ	90-264/47-440	120-370	18	3.3/24	1.4/0.55	1000	76
AMEL20-512DMAZ	90-264/47-440	120-370	18	5/12	1.6/0. 83	680	76
AMEL20-515DMAZ	90-264/47-440	120-370	18	5/15	1.6/0.66	680	78
AMEL20-524DMAZ	90-264/47-440	120-370	18	5/24	1.6/0.46	680	76
AMEL20-1215DMAZ	90-264/47-440	120-370	18	12/15	0.66/0.66	560	77
AMEL20-1224DMAZ	90-264/47-440	120-370	18	12/24	0.58/0. 42	560	79
AMEL20-1524DMAZ	90-264/47-440	120-370	18	15/24	0.54/0. 42	560	80
AMEL20-3.3N5DMAZ	90-264/47-440	120-370	14.8	-3.3/5	-0.7/2.5	680	75
AMEL20-3.3N12DMAZ	90-264/47-440	120-370	18	-3.3/12	-1.4/1.1	680	76
AMEL20-3.3N15DMAZ	90-264/47-440	120-370	18	-3.3/15	-1.4/0.89	680	76
AMEL20-5N5DMAZ	90-264/47-440	120-370	14	-5/5	-0.8/2	680	75
AMEL20-5N12DMAZ	90-264/47-440	120-370	18	-5/12	-1.6/0. 83	470	75
AMEL20-5N15DMAZ	90-264/47-440	120-370	18	-5/15	-1.6/0.66	470	75
AMEL20-12N12DMAZ	90-264/47-440	120-370	18	-12/12	-0.66/0.83	470	77
AMEL20-12N15DMAZ	90-264/47-440	120-370	18	-12/15	-0.66/0.66	330	76

*Output power must not exceed the listed values.

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.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current	115VAC	0.46		A
	230VAC	0.29		A
Inrush current <2ms (cold start)	115VAC		10	A
	230VAC		20	A
Leakage current			0.25	mA
External fuse	slow blow type	1.5		A

Input Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Input dissipation	No Load	<0.5		W
Start up time	Soft start	500		ms

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation		±1		%
Load regulation (single output)	0-100% load	±2		%
Load regulation (dual output)	Unbalanced (0-100%) load	±3		%
Transient recovery time		500		µs
Transient response deviation	25% load step	±2		% of Vout
Ripple & Noise*	3.3 & 5V models	75		mV p-p
	12, 15 & 24V models	100		
Hold-up time (min)	110VAC	10		ms
	230VAC	25		

*Ripple and Noise are measured at 20MHz bandwidth by using a 0.1µF (M/C) parallel capacitor.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec, 1.2mA		4000	VAC
Isolation resistance		>1000		MΩ
Isolation Capacitance		2200		pF

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	65		KHz
Over load protection	Auto recovery, Foldback	150		%
Over voltage protection	Zener Diode Clamp			
Short circuit protection	Continuous			
Short circuit restart	Auto recovery			
Operating temperature	With derating above 50ºC	-40 to 80		°C
Maximum case temperature			100	°C
Storage temperature		-45 to +95		°C
Temperature coefficient		±0.02		% / °C
Cooling	Free air convection			
Humidity	Non condensing	20 ~ 95		% RH
Case material	Plastic resin + Fiberglass (flammability to UL 94V-0)			
Weight	70			g
Dimensions (L x W x H)	2.22 x 1.21 x 0.99 inches 56.48 x 30.86 x 25.10mm			
MTBF	> 400 000 hrs (MIL-HDBK -217F, t=+25°C)			

Environment Approval

Test	Parameters	Conditions
Shock	Wave form	Half sine wave
	Acceleration amplitude	5gn
	Bump duration	30 ms
	Converter operation	before and after test, body mounted (on chassis)
	Number of bumps	18 (3 in each direction for every axis)
Vibration	Test mode	Sweep sine
	Displacement	1mm
	Acceleration	3g
	Converter operation	10-100Hz, speed 0.05Hz/s

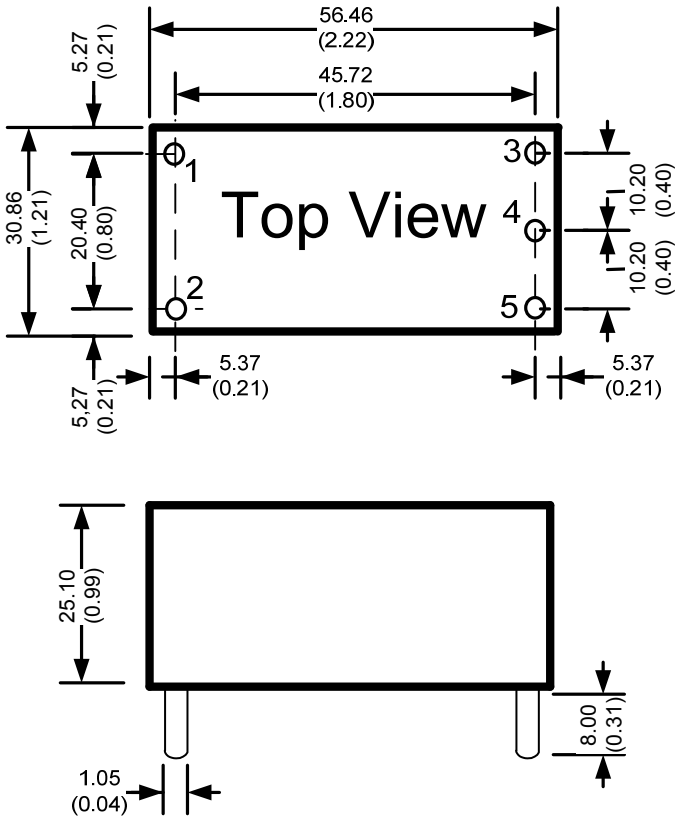
Safety Specifications

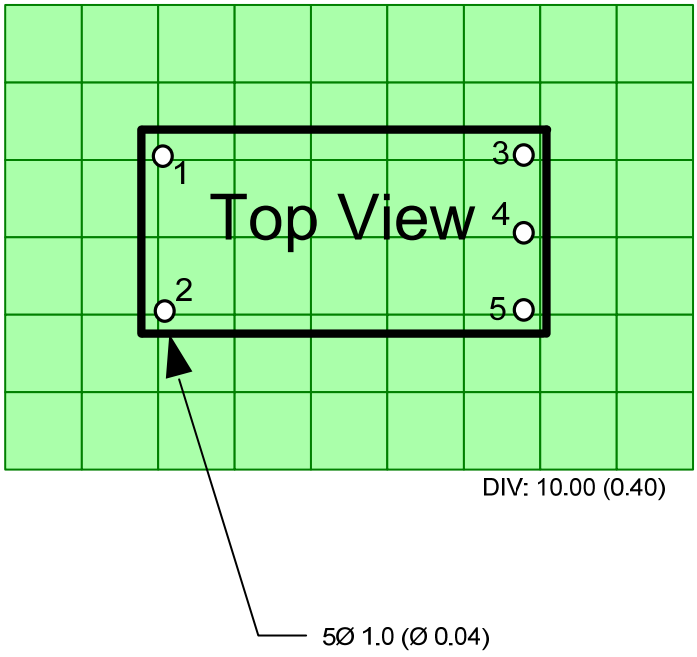
Parameters		
Agency approvals	cULus, CE, CB	
Standards	Medical Electrical Equipment	IEC\EN\UL 60601-1, CSA-C22.2 No. 601.1-M90
	Information technology Equipment	EN 60950-1:2006+A11:2009
	EMI - Conducted and radiated emission	EN55011, class B
	Harmonic Current Emissions	IEC/EN 61000-3-2, (EN60555-2)
	Voltage fluctuations and flicker	IEC/EN 61000-3-3, (EN60555-3)
	Electrostatic Discharge Immunity	IEC 61000-4-2
	RF, Electromagnetic Field Immunity	IEC 61000-4-3
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4
	Surge Immunity	IEC 61000-4-5
	RF, Conducted Disturbance Immunity	IEC 61000-4-6
	Power frequency Magnetic Field Immunity	IEC 61000-4-8
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11

Pin Out Specifications

Pin	Single	Dual positive	Dual negative/positive
1	AC Input (N)	AC Input (N)	AC Input (N)
2	AC Input (L)	AC Input (L)	AC Input (L)
3	+V Output	+V1 Output	+V1 Output
4	-V Output	Common	Common
5	No pin	+V2 Output	-V2 Output

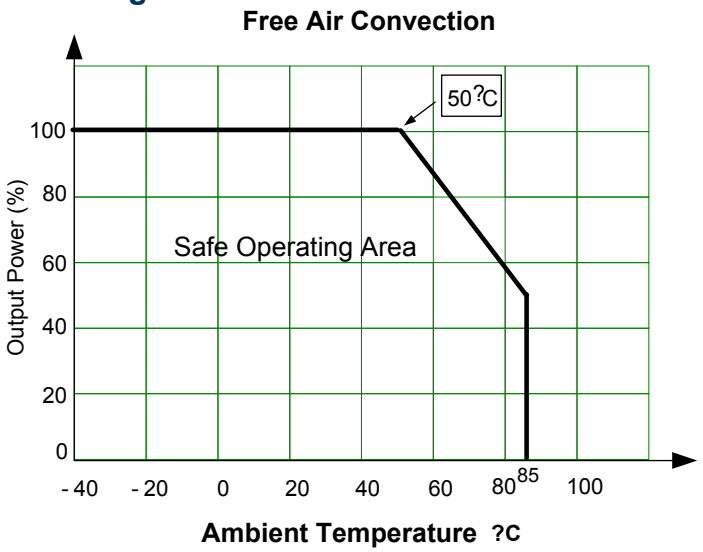
Dimensions





Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Diameter 1.0 ± 0.05 (0.04 ± 0.002)
Pin Pitch Tolerance ±0.35 (±0.014)

Derating



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