



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -40 °C to +80 °C or -25 °C to +80 °C
- Input: 90-260VAC, 47-440Hz, or 120-370VDC
- Over load, Over Voltage, Short Circuit Protection
- RoHS compliant
- Energy Star compliant
- Ultra small package
- Soft start

Models
Single output



Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Temperature range (°C)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (µF)	Efficiency (%)
AMEL5-3.3SMAZ	90-264/47-440	120-370	-25 to +80	3.3	1.5	2200	68
AMEL5-5SMAZ	90-264/47-440	120-370	-25 to +80	5	1	1100	70
AMEL5-12SMAZ	90-264/47-440	120-370	-25 to +80	12	0.42	680	73
AMEL5-15SMAZ	90-264/47-440	120-370	-25 to +80	15	0.333	330	73
AMEL5-24SMAZ	90-264/47-440	120-370	-25 to +80	24	0.21	220	75
AMEL5-3.3SEMAZ	90-264/47-440	120-370	-40 to +80	3.3	1.5	2200	68
AMEL5-5SEMAZ	90-264/47-440	120-370	-40 to +80	5	1	1100	70
AMEL5-12SEMAZ	90-264/47-440	120-370	-40 to +80	12	0.42	680	73
AMEL5-15SEMAZ	90-264/47-440	120-370	-40 to +80	15	0.333	330	73
AMEL5-24SEMAZ	90-264/47-440	120-370	-40 to +80	24	0.21	220	75

Models
Dual output

Model	Input Voltage (VAC, Hz)	Input Voltage (VDC)	Temperature range (°C)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency (%)
AMEL5-5DMAZ	90-264/47-440	120-370	-25 to +80	±5	±0.5	±470	72
AMEL5-12DMAZ	90-264/47-440	120-370	-25 to +80	±12	±0.21	±220	73
AMEL5-15DMAZ	90-264/47-440	120-370	-25 to +80	±15	±0.168	±150	75
AMEL5-5DEMAZ	90-264/47-440	120-370	-40 to +80	±5	±0.5	±470	72
AMEL5-12DEMAZ	90-264/47-440	120-370	-40 to +80	±12	±0.21	±220	73
AMEL5-15DEMAZ	90-264/47-440	120-370	-40 to +80	±15	±0.168	±150	75

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			0.2	mA
External fuse	Recommended slow blow type	1.5		A
Input Dissipation (No Load)		<0.3		W
Start up time	Soft Start	15		mS
Under Voltage Protection		89		VAC

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation		±0.5		%
Load regulation (single output)	0-100% load	±0.5		%
Cross Regulation (dual output)	25% load - 1 st out, 100% load – 2 nd out	±5		%
Transient Recovery Time		200		µs
Transient Response Deviation	25% load step	±2		% of Vout
Minimum load		0		%
Ripple & Noise	3.3 & 5V models	50		mV p-p
	12, 15 & 24V models	100		mV p-p
Hold-up time (minimum)		15		ms

Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	3sec	4000		VAC
Isolation Resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		132		KHz
Start up time		900		mS
Over Load protection	Auto recovery, hiccup mode	>116%		
Over voltage protection	Zener diode clamp			
Short circuit protection	Continuous			
Short Circuit restart	Auto recovery			
Operating temperature	With derating above 50°C	Refer to the models table above		°C
Storage temperature		-40 to +95		°C
Maximum Case temperature			100	°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		30		g
Dimensions (L x W x H)	2.03 x 1.03 x 0.62 inches 51.5 x 26.1 x 15.8 mm			
MTBF	> 400 000 hrs (MIL-HDBK -217F, t=+25°C)			

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.

Environment Approval

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

Safety Specifications

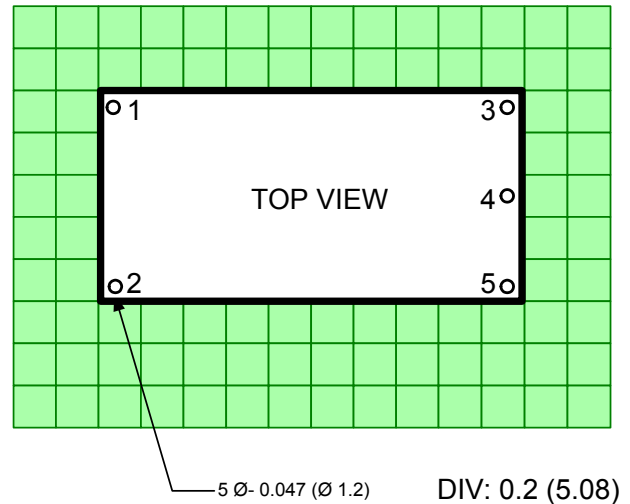
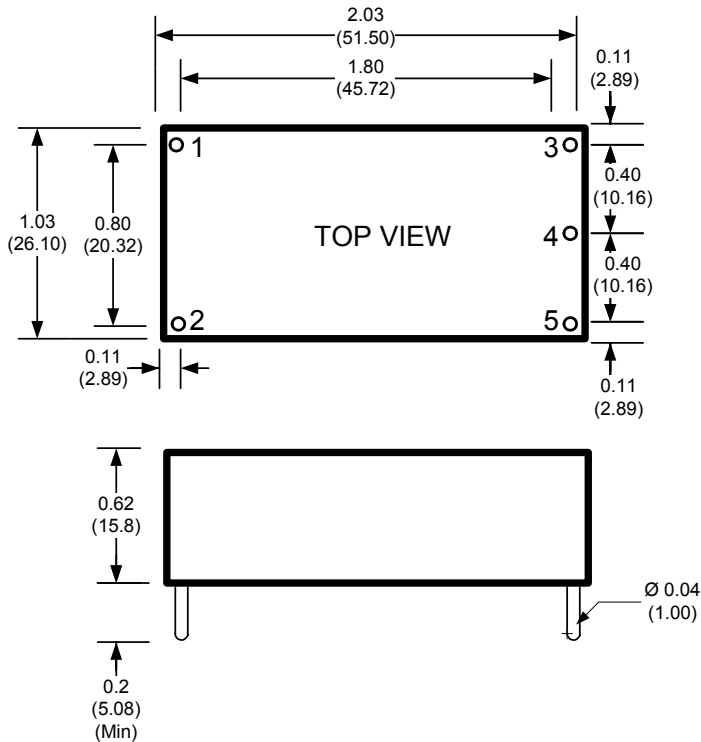
Parameters

Agency approvals	cULus, CE, CB	
Standards	EMI - Conducted and radiated emission	EN55011, class B
	Medical Electrical Equipment	EN 60601-1, CSA-C22.2 No. 601.1-M90
	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

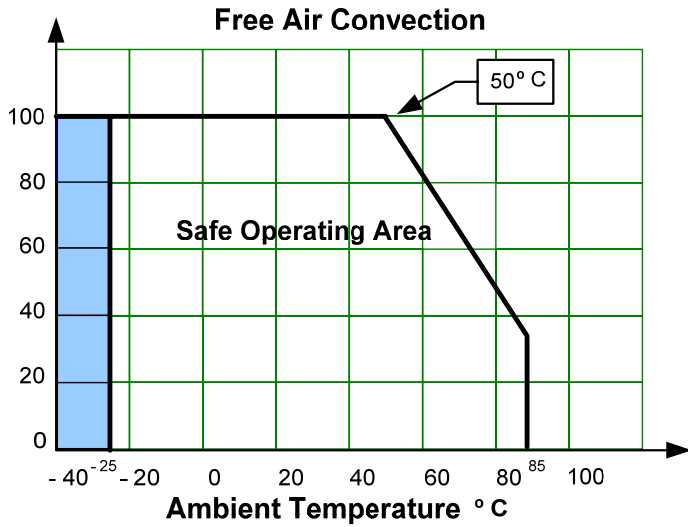
Pin	Single	Dual
1	AC Input (N)	AC Input (N)
2	AC Input (L)	AC Input (L)
3	+V Output	+V Output
4	-V Output	Common
5	No pin	-V Output

Dimensions



Dimensions: inch (mm)
Case Tolerance: ± 0.012 (0.30)
Pin Pitch Tolerance: ± 0.012 (0.30)

Derating



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