

Series AMEL3-AZ

3Watt | AC-DC Converter



Models Single output

FEATURES:

- I/O Isolation 3000VAC
- Operating Temp: -40°C to +80°C
- Over Load, Short Circuit Protection
- Input: 90-305VAC, 47-440Hz, or 130-430 VDC
- Optional 90-528Vac, 47-440Hz, or 130-745 VDC
- RoHS compliant
- Energy Star compliant
- Ultra small package



Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Temperature range (°C)	Output Voltage (V)	Output Current max (mA)	Maximum capacitive Load (µF)	Efficiency (%)			
							115 VAC	230 VAC	277 VAC	480 VAC
AMEL3-3.3SAZ	90-305/47-440	130-430	-40 to +80	3.3	900	2200	70	68	66	/
AMEL3-5SAZ	90-305/47-440	130-430	-40 to +80	5	600	1100	70	69	66	/
AMEL3-12SAZ	90-305/47-440	130-430	-40 to +80	12	250	680	76	74	72	/
AMEL3-15SAZ	90-305/47-440	130-430	-40 to +80	15	200	560	77	74	70	/
AMEL3-24SAZ	90-305/47-440	130-430	-40 to +80	24	125	470	79	78	76	/
AMEL3-3.3SBAZ	90-528/47-440	130-745	-40 to +80	3.3	700	2200	62	61	61	56
AMEL3-5SBAZ	90-528/47-440	130-745	-40 to +80	5	600	1100	70	71	70	63
AMEL3-12SBAZ	90-528/47-440	130-745	-40 to +80	12	250	680	75	75	74	66
AMEL3-15SBAZ	90-528/47-440	130-745	-40 to +80	15	200	560	76	77	76	69
AMEL3-24SBAZ	90-528/47-440	130-745	-40 to +80	24	125	470	73	73	73	65

Models Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Temperature range (°C)	Output Voltage (V)	Output Current max (mA)	Maximum capacitive Load (µF)	Efficiency (%)			
							115 VAC	230 VAC	277 VAC	480 VAC
AMEL3-5DAZ	90-305/47-440	130-430	-40 to +80	±5	300	1100	71	72	71	/
AMEL3-12DAZ	90-305/47-440	130-430	-40 to +80	±12	125	680	74	74	73	/
AMEL3-15DAZ	90-305/47-440	130-430	-40 to +80	±15	100	330	75	75	74	/
AMEL3-5DBAZ	90-528/47-440	130-745	-40 to +80	±5	300	1100	70	71	70	64
AMEL3-12DBAZ	90-528/47-440	130-745	-40 to +80	±12	125	680	73	73	72	65
AMEL3-15DBAZ	90-528/47-440	130-745	-40 to +80	±15	100	330	74	74	73	65

Models Dual Asymmetrical output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Temperature range (°C)	Output Voltage (V)	Output Current max (mA)	Maximum capacitive Load (µF)	Efficiency (%)			
							115 VAC	230 VAC	277 VAC	480 VAC
AMEL3-512DAZ	90-305/47-440	130-430	-40 to +80	5/12	200/83	1100	69	69	65	/
AMEL3-512DBAZ	90-528/47-440	130-745	-40 to +80	5/12	200/83	1100	68	68	64	60

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		80	mA
	230 VAC		45	mA
	277 VAC		40	mA
	480VAC		15	mA
Inrush current <2ms (cold start)	115 VAC		10	A
	230 VAC		15	A
	277 VAC		20	A
	480 VAC		30	A
Leakage current			0.15	mA
External fuse	Recommended slow blow type	1		A
Input Dissipation (No Load)		≤0.5		W

Single Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load (typical)*	±5		%
Line regulation	LL-HL, Full Load	±5		%
Load regulation (single output)	0-100% load (typical)*	±5		%
Transient Recovery Time		100		µs
Transient Response Deviation	25% load step	±2		% of Vout
Minimum load		0		%
Ripple & Noise	3.3V&5V with 680 µF (E/C) + 0.1µF M/C	300		mV p-p
	12V&15V with 220 uF (E/C) + 0.1µF M/C	300		mV p-p
	24V with 470 uF (E/C) + 0.1µF M/C	200		mV p-p

* Ripple & Noise measured at 20MHz bandwidth with 115/230/277/480VAC (typical input) with Full Load.

Dual Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load	±5		%
Line regulation	LL-HL	±5		%
Load regulation	0-100% load	±5		%
Cross regulation	25% load change	±5		%
Transient Recovery Time		200		µs
Transient Response Deviation	25% load step	±2		% of Vout
Minimum load		0		%
Ripple & Noise	5D/12D/15D with 220uF (E/C) + 0.1µF M/C	200		mV p-p
	512D with 220uF (E/C) + 0.1µF M/C	300		mV p-p

*Ripple & Noisemeasuredat20MHz bandwidth and 115/230/277/480VAC (typical input) with Full Load.

*5D/12D/15D Model with symmetric load change and 512D Model with asymmetric load change.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		3000	VAC
Isolation Resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100		KHz
Over Load protection	Fold back	>125%		
Short circuit protection		Auto recovery		
Operating temperature	See de-rating chart	-40 to +80		°C
Storage temperature		-40 to +85		°C
Maximum Case temperature			100	°C
Humidity	Non condensing	20~95		% RH
Case material	Plastic resin + Fiberglass (flammability to UL 94V-0)			
Weight		21		g
Dimensions (L x W x H)	90-305VAC	1.10 x 0.90 x 0.57 inches (28.00 x 23.00 x 14.50 mm)		
	90-528VAC	1.10 x 0.90 x 0.67 inches (28.00 x 23.00 x 17.00 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.

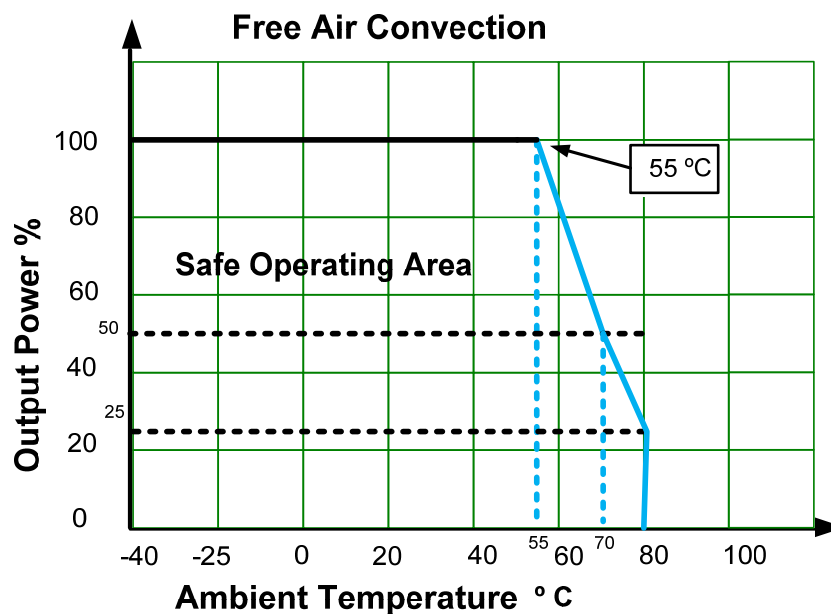
Environment Approval

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 (pending certification)	cULus, CE, CB	
	Information technology Equipment	IEC/EN/UL 60950-1:2006+A11:2009
	EMI - Conducted and radiated emission	EN55022, 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 (1KV)	IEC 61000-4-5(SAZ &DAZ:Level2,SBAZ&DBAZ:Level 1)
	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
	Canadian Safety Agency	CAN/CSA-C22.2 NO. 60950-1-07

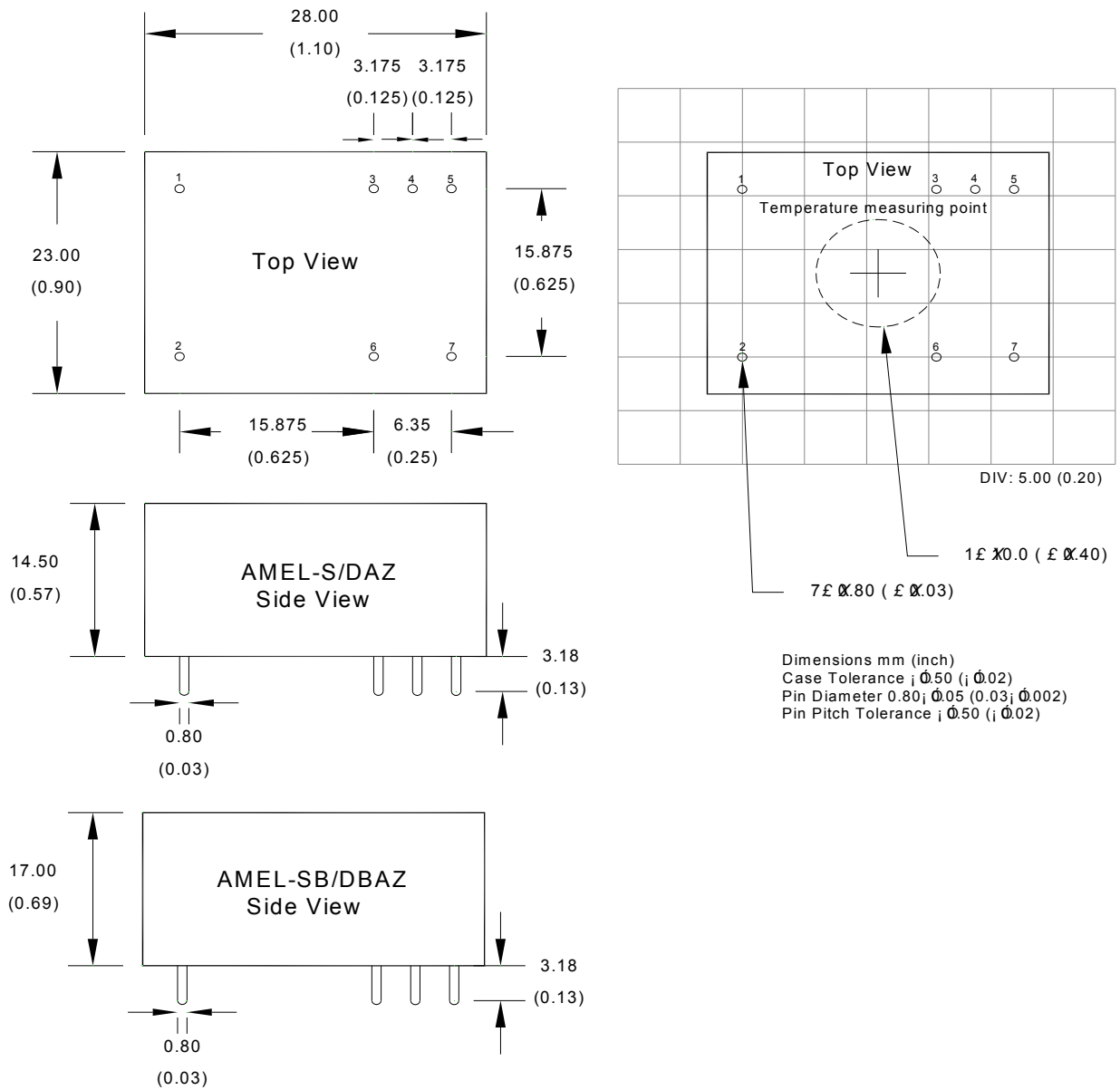
Derating



Pin Out Specifications

Pin	Single	Dual
1	NC	NC
2	NC	NC
3	+V Output	+V Output
4	GND	GND
5	No Pin	-V Output
6	AC Input (L)	AC Input (L)
7	AC Input (N)	AC Input (N)

Dimensions



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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.