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AME25-VZ



Encapsulated

The new AME25-VZ is a brand-new AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-264VAC and an output voltage range from 3.3-24V, this series will offer many benefits to your new system design.

This new series offers great operating temperatures, from -40°C to 85°C with full power up to 55°C. It also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

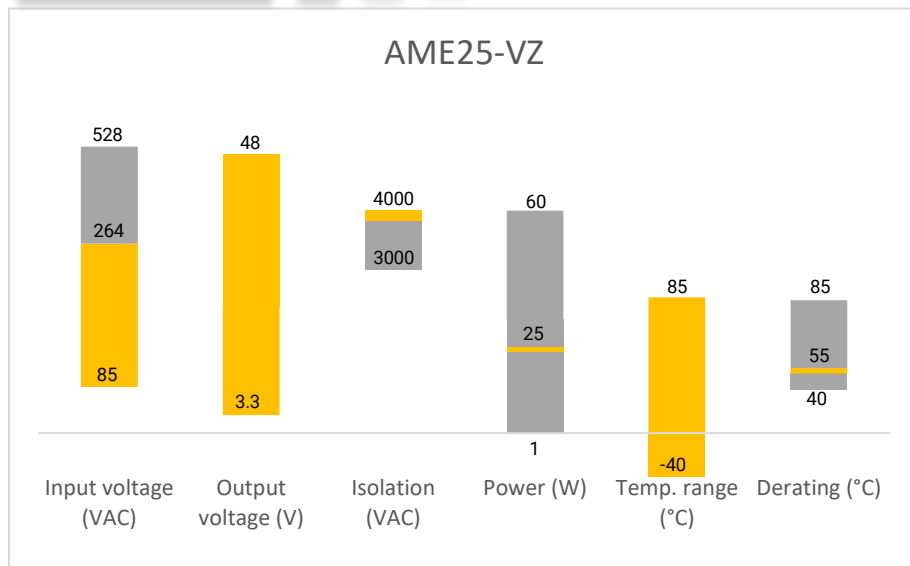
The AME25-VZ is perfect for street lighting controls, grid power, LED, instrumentation, industrial controls, communication and civil applications.

Features

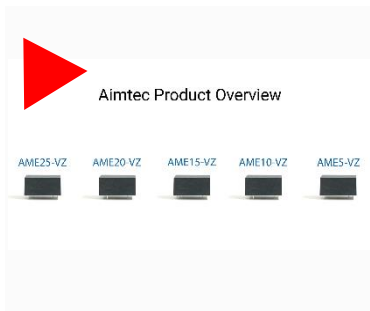


- Universal Input: 85 - 264VAC/120 - 370VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 50mV(p-p), typ.
- Output short circuit, over-current, over-voltage protection
- EMI performance meets CISPR32/EN55032 CLASS B
- Meets IEC62368, UL62368, EN62368 standards

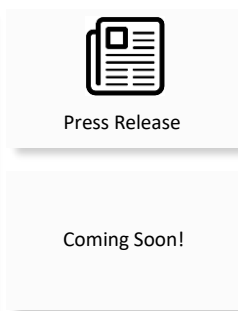
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output						
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (μF)	Efficiency (%) 230 VAC
AME25-3.3SVZ	85-264/47-63	120-370	3.3	4.1	48000	74
AME25-5SVZ	85-264/47-63	120-370	5	4.1	12000	79
AME25-9SVZ	85-264/47-63	120-370	9	2.5	5600	81
AME25-12SVZ	85-264/47-63	120-370	12	2.1	5400	83
AME25-15SVZ	85-264/47-63	120-370	15	1.6	2400	84
AME25-24SVZ	85-264/47-63	120-370	24	1.1	1400	85
AME25-48SVZ	85-264/47-63	120-370	48	0.5	600	87

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

Input Specifications					
Parameters	Conditions	Minimum	Typical	Maximum	Units
Current (full load)	115 VAC			600	mA
	230 VAC			340	mA
Inrush current <2ms (cold start)	115 VAC		20		A
	230 VAC		40		A
External fuse	Recommended slow blow type		3.15		A

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3VDC output	±3		%
	Other output	±2		
Line regulation	Full load, main output	±0.5		%
Load regulation (single output)	0-100% load	±1		%
Minimum load		0		%
Ripple & Noise *		50	100	mV p-p
Hold-up time	115VAC, 20MHz bandwidth	10		ms
	230VAC, 20MHz bandwidth	60		ms

*Ripple and Noise are measured at 20MHz bandwidth & 230VAC with the recommended Application Circuit.

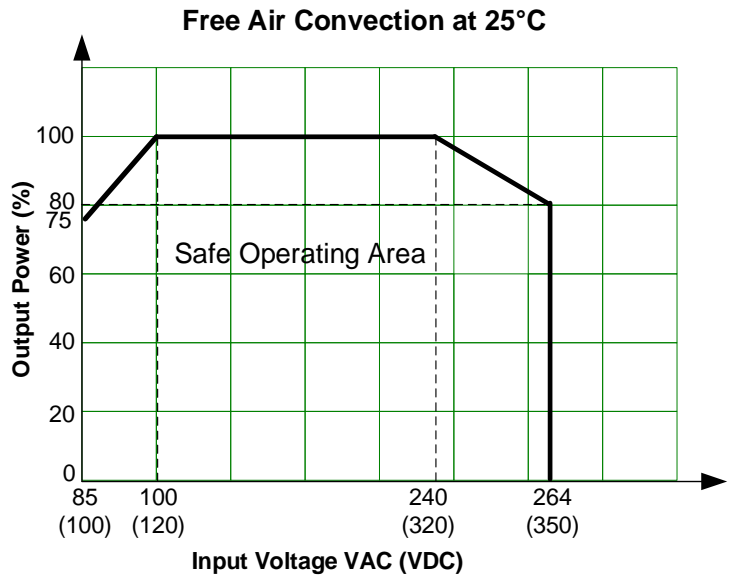
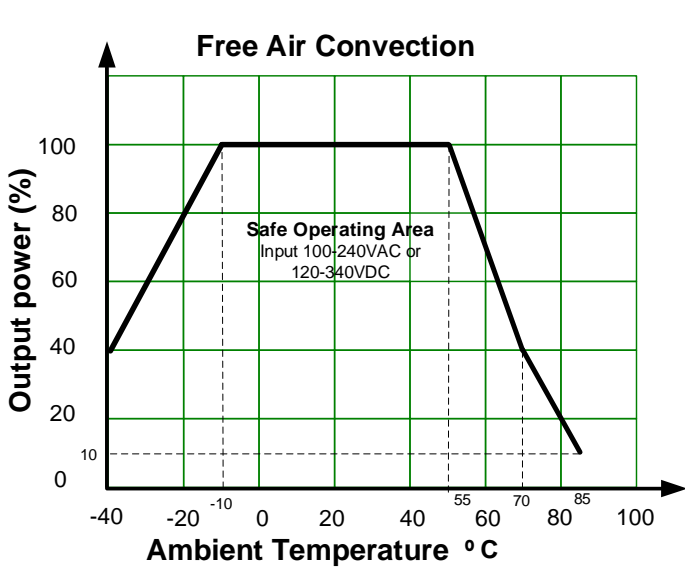
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		4000	VAC

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class I			
Over current protection		≥140		% of I _{out}
Over voltage protection	Zener diode clamp			
Short circuit protection	Continuous, Auto recovery			
Operating temperature	See derating curve	-40 to +85		°C
Switching Frequency		65		kHz
Maximum Case temperature			100	°C
Temperature coefficient		±0.02		% / °C
Cooling	Free air convection			
Humidity	Non condensing		95	% RH
Case material	Plastic (flammability to UL 94V-0)			
Weight	PCB mountable model:		120	
	With optional -ST mounting plate:		170	
	With optional -STD mounting plate:		210	
Dimensions (L x W x H)	PCB mountable model:	2.44 x 1.77 x 0.93 inches (70 x 48 x 23.5mm)		
	With optional -ST mounting plate:	3.78 x 2.13 x 1.26 inches (96.1 x 54 x 32 mm)		
	With optional -STD mounting plate:	3.78 x 2.12 x 1.44 inches (96.1 x 54 x 36.6 mm)		
MTBF	> 300,000 hrs (MIL-HDBK -217F, t _a =+25°C)/Full Load			

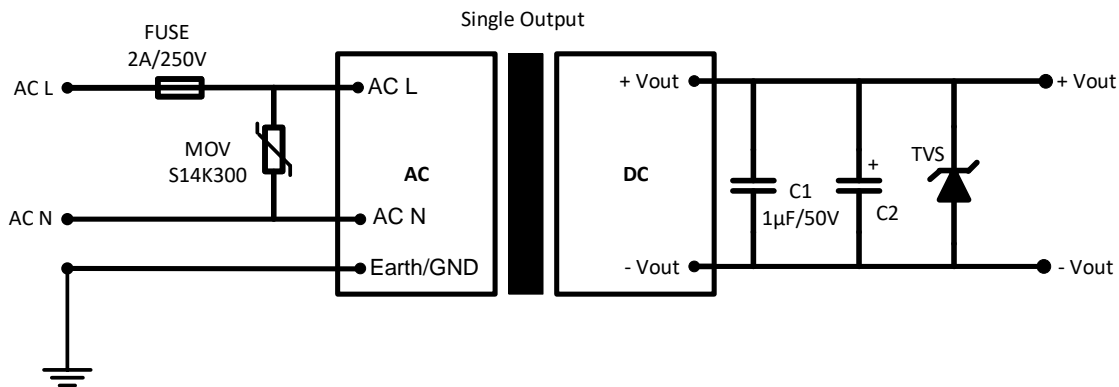
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications		
Parameters		
Agency approvals	cULus (except 3.3V output model)	
Standards	Information technology Equipment	UL 62368
	EMI - Conducted and radiated emission	CISPR32/EN55032, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2, Contact ±6kV/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, ±4kV with external circuit, Criteria B
	Surge Immunity	IEC 61000-4-5 L to L ±1kV/ L to G ±2kV, L to L ±2kV/L to G ±4kV with external circuit, Criteria B
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B	

Derating

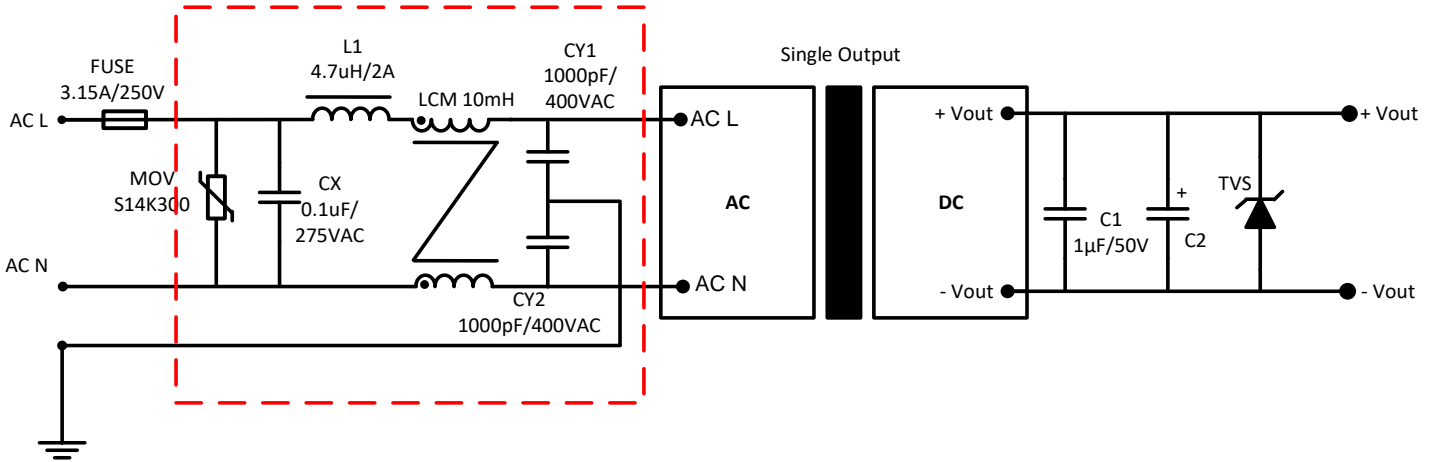


Typical Application Circuit



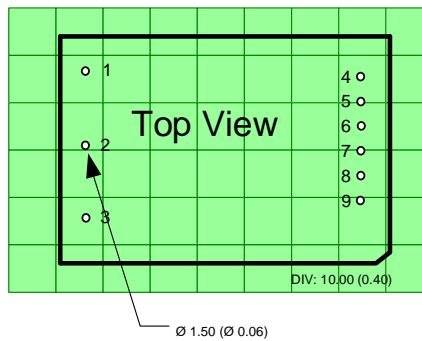
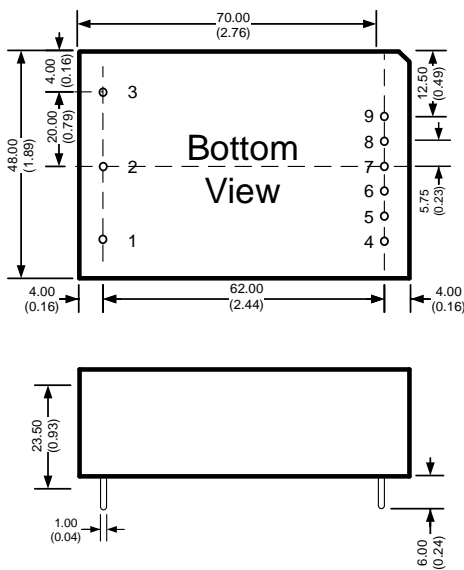
EMC Recommended Circuit

Recommended use AMFE305150-LN22 EMC filter



Model	C2	TVS
3.3 Vout	330 μ F	7V
5 Vout	330 μ F	7V
9 Vout	330 μ F	12V
12 Vout	330 μ F	20V
15 Vout	330 μ F	20V
24 Vout	120 μ F	30V
48 Vout	68 μ F	64V

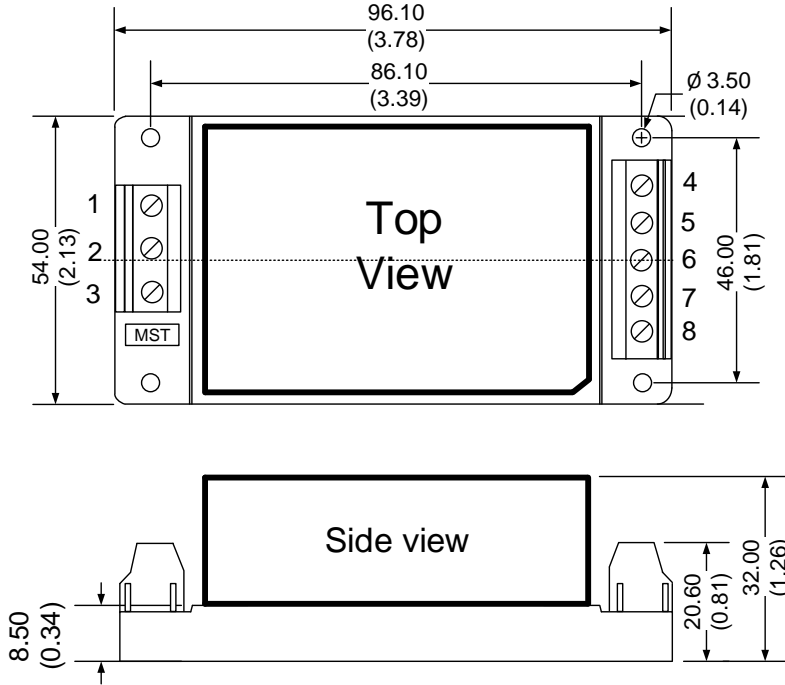
Dimensions



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

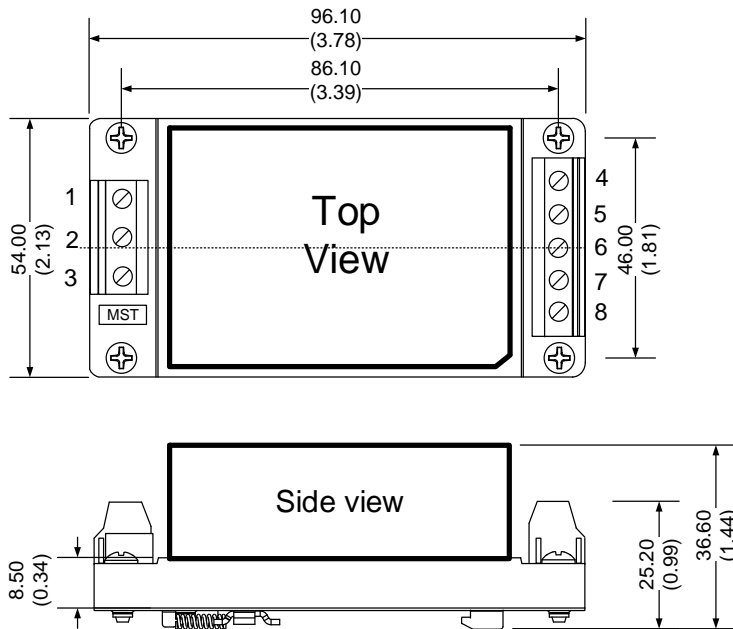
Pin Out Specifications	
Pin	Single
1	Gnd
2	AC Input (N)
3	AC Input (L)
4	Trim
5	-V Output
6	No pin
7	No pin
8	No pin
9	+V Output

With optional -ST bottom plate



Pin Out Specifications	
Pin	Single
1	Gnd
2	AC Input (N)
3	AC Input (L)
4	-V Output
5	No connection
6	Trim
7	No connection
8	+V Output

With optional -STD bottom plate



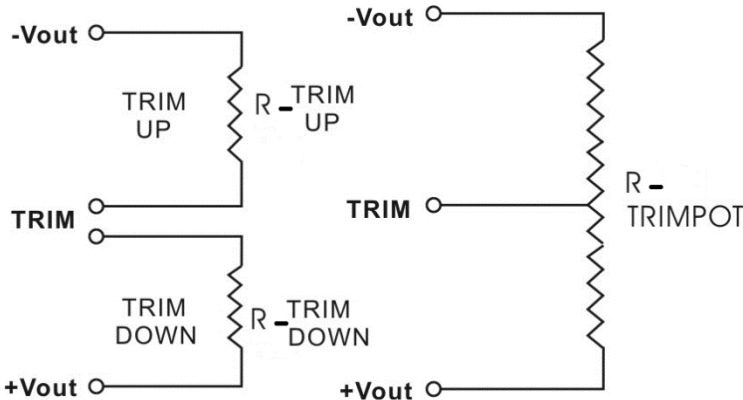
Pin Out Specifications	
Pin	Single
1	Gnd
2	AC Input (N)
3	AC Input (L)
4	-V Output
5	No connection
6	Trim
7	No connection
8	+V Output

Trimming

Output voltage can be externally trimmed by utilizing the methods as shown below

Fixed Resistor

Variable Potentiometer



Leave open if not used.

AME25-3.3SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.267	3.234	3.201	3.168	3.135	3.102	3.069	3.036	3.003	2.97
Rt down (KΩ)	167.633	89.553	60.243	44.883	35.428	29.022	24.396	20.897	18.159	15.957
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.333	3.366	3.399	3.432	3.465	3.498	3.531	3.564	3.597	3.63
Rt up (KΩ)	154.392	67.966	43.318	31.649	24.844	20.387	17.241	14.902	13.094	11.656

AME25-5SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	4.95	4.9	4.85	4.8	4.75	4.7	4.65	4.6	4.55	4.5
Rt down (KΩ)	160.700	78.200	50.700	36.950	28.700	23.200	19.271	16.325	14.033	12.200
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	5.05	5.1	5.15	5.2	5.25	5.3	5.35	5.4	5.45	5.5
Rt up (KΩ)	164.000	81.500	54.000	40.250	32.000	26.500	22.571	19.625	17.333	15.500

AME25-9SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	8.91	8.82	8.73	8.64	8.55	8.46	8.37	8.28	8.19	8.1
Rt down (KΩ)	389.533	221.430	153.157	116.145	92.924	76.997	65.393	56.562	49.617	44.011
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	9.09	9.18	9.27	9.36	9.45	9.54	9.63	9.72	9.81	9.9
Rt up (KΩ)	328.532	126.639	78.148	56.357	43.975	35.990	30.412	26.297	23.134	20.629

AME25-12SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	11.88	11.76	11.64	11.52	11.4	11.28	11.16	11.04	10.92	10.8
Rt down (KΩ)	183.233	111.590	79.474	61.246	49.499	41.299	35.249	30.602	26.921	23.933
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	12.12	12.24	12.36	12.48	12.6	12.72	12.84	12.96	13.08	13.2
Rt up (KΩ)	211.778	57.030	32.596	22.642	17.238	13.845	11.516	9.819	8.527	7.511

AME25-15SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	14.85	14.7	14.55	14.4	14.25	14.1	13.95	13.8	13.65	13.5
Rt down (KΩ)	616.500	304.000	199.833	147.750	116.500	95.667	80.786	69.625	60.944	54.000
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	15.15	15.3	15.45	15.6	15.75	15.9	16.05	16.2	16.35	16.5
Rt up (KΩ)	124.000	61.500	40.667	30.250	24.000	19.833	16.857	14.625	12.889	11.500

AME25-24SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	23.76	23.52	23.28	23.04	22.8	22.56	22.32	22.08	21.84	21.6
Rt down (KΩ)	471.081	287.942	205.845	159.249	129.221	108.258	92.793	80.914	71.504	63.865
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	24.24	24.48	24.72	24.96	25.2	25.44	25.68	25.92	26.16	26.4
Rt up (KΩ)	239.556	64.606	36.982	25.728	19.619	15.783	13.150	11.232	9.771	8.622

AME25-48SVZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	47.52	47.04	46.56	46.08	45.6	45.12	44.64	44.16	43.68	43.2
Rt down (KΩ)	5501.011	2921.325	1974.775	1483.386	1182.489	979.298	832.871	722.336	635.938	566.549
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	48.48	48.96	49.44	49.92	50.4	50.88	51.36	51.84	52.32	52.8
Rt up (KΩ)	420.217	191.396	123.671	91.211	72.163	59.636	50.773	44.170	39.060	34.990

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