



**AME25-277VZ**



AME25-277VZ series is an efficient 25W AC-DC power supply module. Offering a commercial input voltage range of 85-305VAC, output voltage ranges from 3.3-48V, low power consumption, high efficiency, high reliability and safer isolation.

This new series offers great operating temperatures, from -40°C to 85°C with full power up to 50°C also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high 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 AME25-277VZ is perfect for grid power, LED, instrumentation, industrial controls, communication and civil applications

Encapsulated

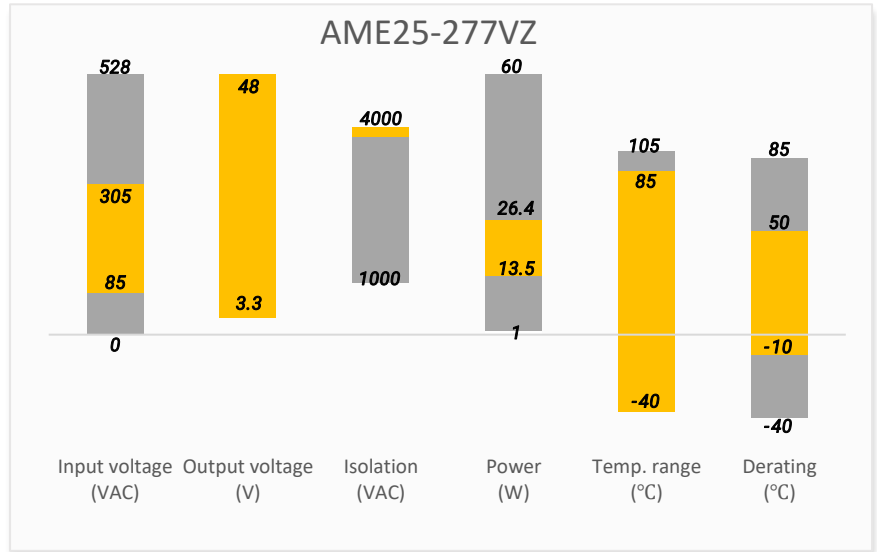
**Features**



**Summary**



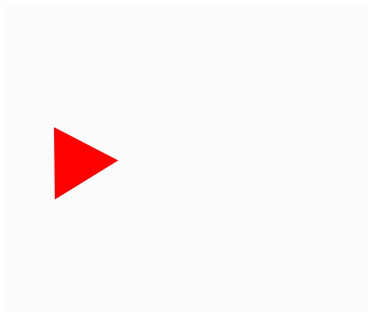
- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 50mV(p-p), Typ.
- Output short circuit, over-current, over-voltage protection
- Regulated Output



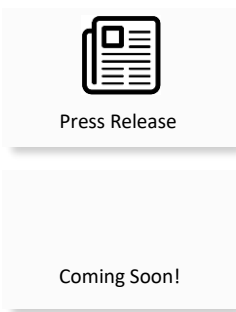
**Training**



**Applications**



Product Training Video  
(click to open)



Application Notes



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

Single Output							
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load ( $\mu$ F)	Efficiency @ 230VAC (%)
AME25-3S277VZ	85-305/47-63	100-430	13.53	3.3	4.1	48000	75
AME25-5S277VZ	85-305/47-63	100-430	20.5	5	4.1	12240	78
AME25-9S277VZ	85-305/47-63	100-430	22.5	9	2.5	5600	80
AME25-12S277VZ	85-305/47-63	100-430	25	12	2.1	5400	82
AME25-15S277VZ	85-305/47-63	100-430	24	15	1.6	2400	83
AME25-24S277VZ	85-305/47-63	100-430	26.4	24	1.1	1440	85
AME25-48S277VZ	85-305/47-63	100-430	24	48	0.5	600	87

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME25-5S277VZ-ST is chassis mounting and AME25-5S277VZ-STD is DIN-Rail mounting version).

Input Specifications					
Parameters	Conditions	Minimum	Typical	Maximum	Units
Current	115VAC			0.6	A
	230VAC			0.34	A
Inrush current	115VAC		20		A
	230VAC		40		A
External fuse	slow blow type,300V		3.15		A

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output	$\pm 3$		%
	Others	$\pm 2$		%
Line regulation	Full load	$\pm 0.5$		%
Load regulation	0-100% load	$\pm 1$		%
Ripple & Noise*	20MHz bandwidth	50	100	mV p-p
Hold up time	115VAC	10		ms
	230VAC	60		ms

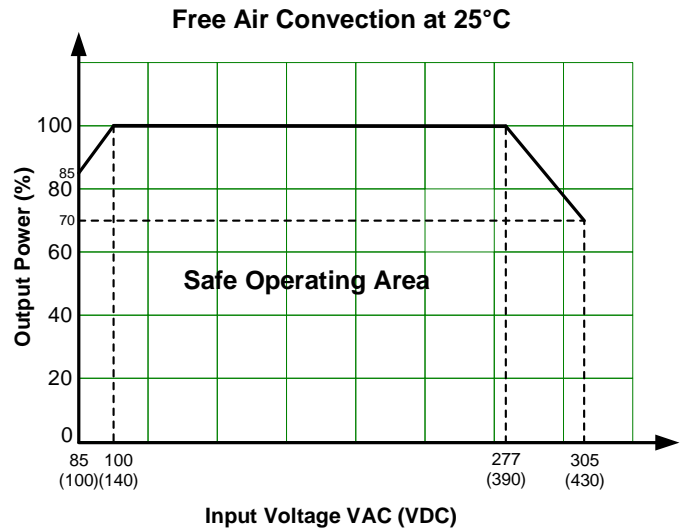
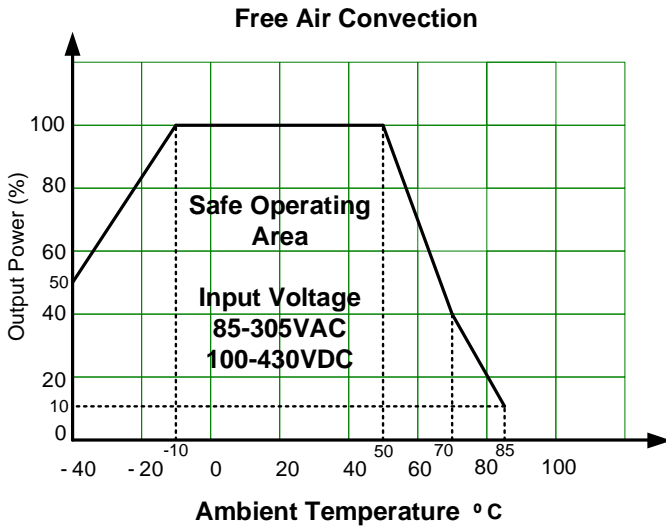
\* Ripple and Noise are measured at 20MHz bandwidth by using the referenced Application circuit.

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 5mA		4000	VAC
Tested Input to ground voltage	60 sec, leakage current < 5mA		2500	VAC

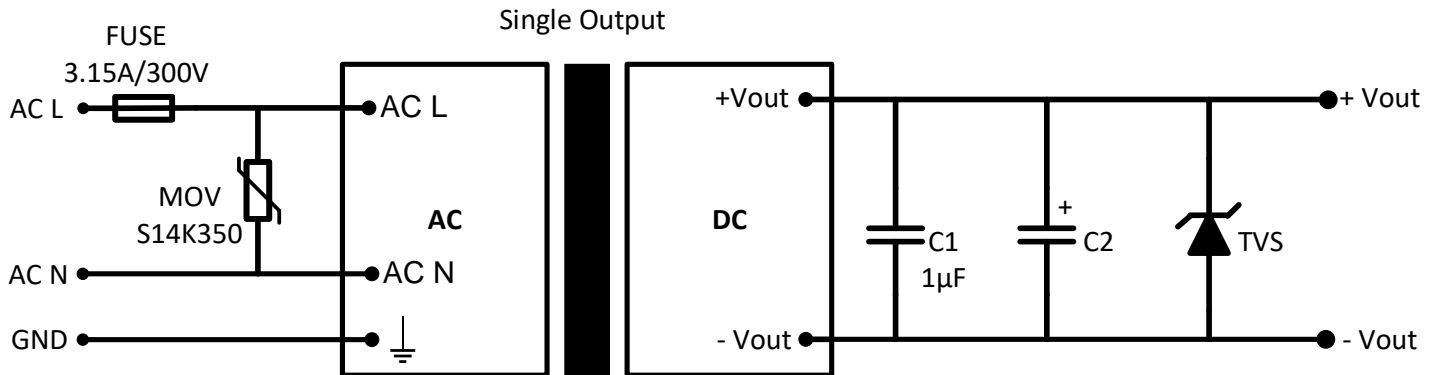
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Over Current protection	Auto recovery	≥ 120	300	% of Iout
Over voltage protection	3.3V/5V Vout		7.5	VDC
	9V Vout		15	VDC
	12V/15V Vout		20	VDC
	24V Vout		30	VDC
	48V Vout		60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-40 to +85		°C
Lead temperature	Wave soldering	260 ± 5 °C; time : 5 - 10s		
	Hand soldering	360 ± 10 °C; time : 3 - 5s		
Power consumption	230VAC		0.5	W
Power derating	-40 °C ~ -10 °C	1.67		% / °C
	55 °C ~ 70 °C	3		% / °C
	70 °C ~ 85 °C	2		% / °C
	85VAC ~ 100VAC	1		% / VAC
	277VAC ~ 305VAC	1		% / VAC
Temperature coefficient		±0.02		% / °C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models	120		g
	With optional -ST mounting plate:	170		
	With optional -STD mounting plate:	210		
Dimensions (L x W x H)	PCB mountable models	2.76 x 1.89 x 0.93 inches (70.0 x 48.0 x 23.5mm)		
	With optional -ST mounting plate:	3.78 x 2.13 x 1.26 inches (96.1 x 54.0 x 32.0mm)		
	With optional -STD mounting plate:	3.78 x 2.13 x 1.40 inches (96.1 x 54.0 x 35.6mm)		
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+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			
Standards	Information technology Equipment	Design to meet IEC/EN/UL 62368	
	EMC - 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, Criteria B	
		IEC 61000-4-4 ±4KV, with EMC recommended circuit, Criteria B	
	Surge Immunity	IEC 61000-4-5 L-L ±1KV/L-G ±2KV, Criteria B	
		IEC 61000-4-5 L-L ±2KV/L-G ±4KV, with EMC recommended 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

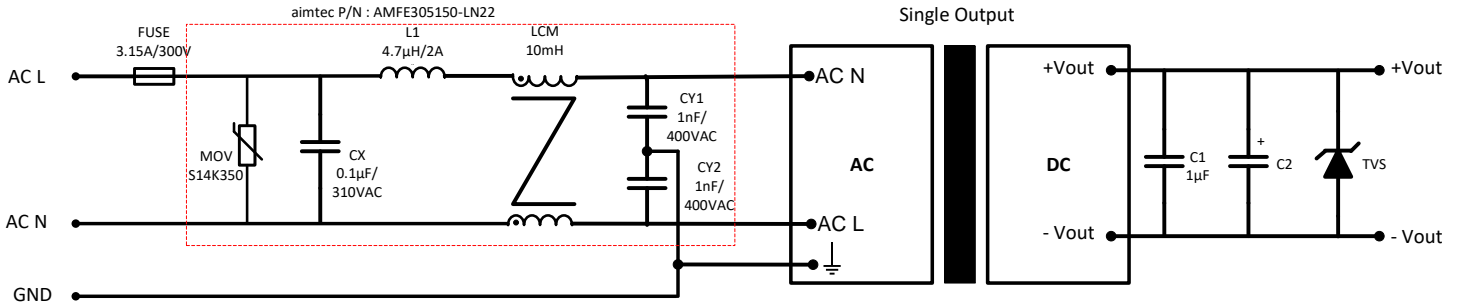


Model	C2	TVS
3.3 / 5 Vout	330 µF / 10V	SMBJ7.0A
9 Vout	330 µF / 16V	SMBJ12A
12 / 15 Vout	330 µF / 25V	SMBJ20A
24 Vout	120 µF / 35V	SMBJ30A
48 Vout	68 µF / 63V	SMBJ64A

### Output Filter Components:

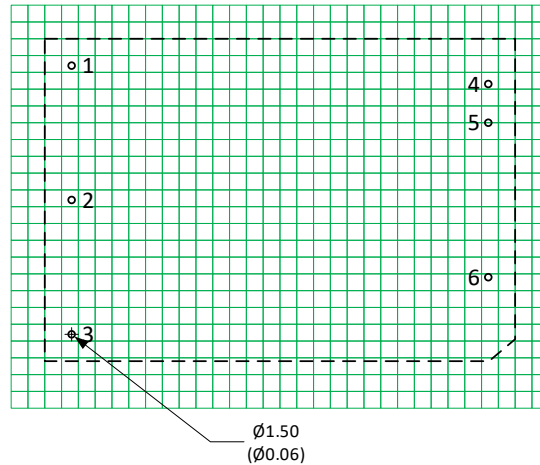
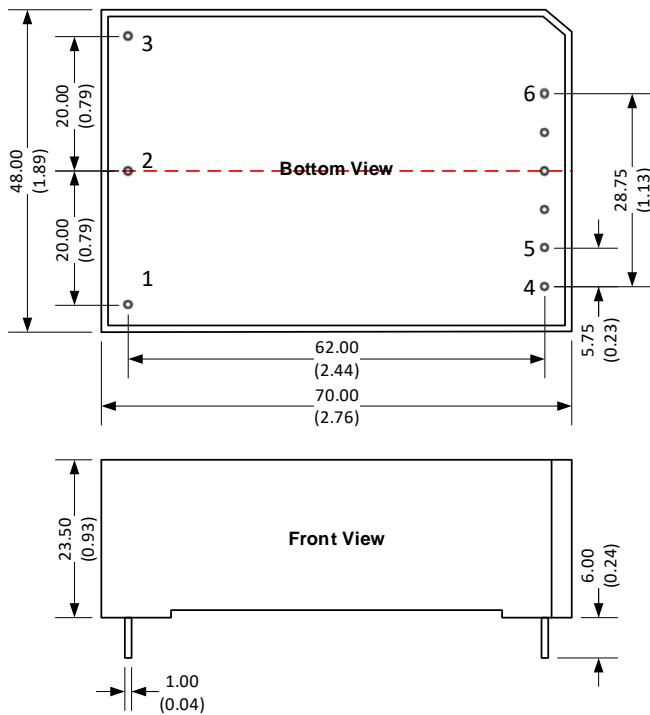
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode.

EMC Recommended Circuit



Note : AMFE305150-LN22 is aimtec 2KV/4KV EMC filter.

Dimensions

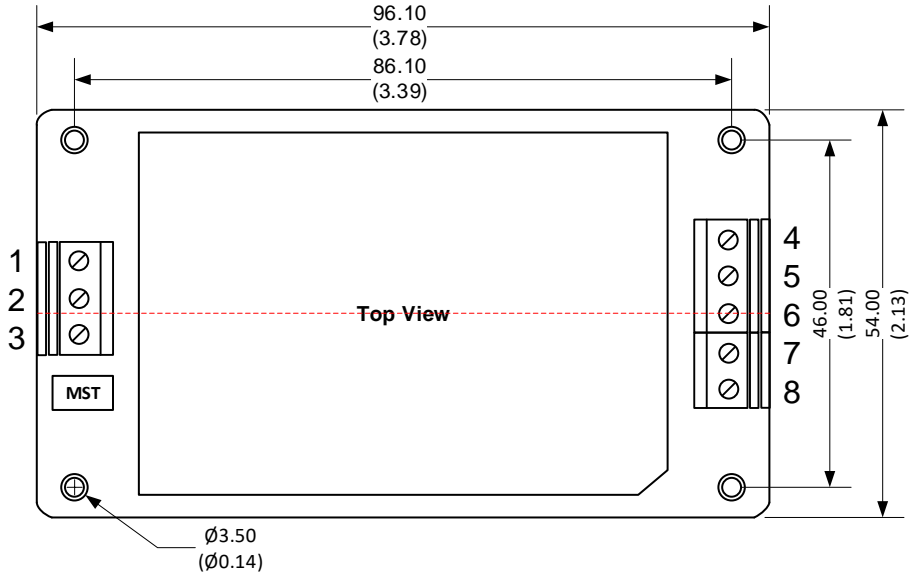
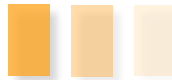


Note : Grid 2.54\*2.54 mm

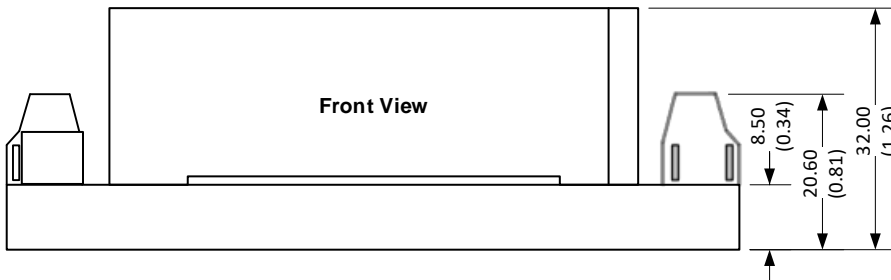
Notes:  
All dimensions are typical in millimeters (inches).  
Pin diameter tolerances :  $\pm 0.10$  ( $\pm 0.004$ )  
General tolerance :  $\pm 0.50$  ( $\pm 0.02$ )

Pin Output Specifications	
Pin	Single
1	GND
2	AC Input (N)
3	AC Input (L)
4	Trim
5	-V Output
6	+V Output

Dimensions with ST Optional

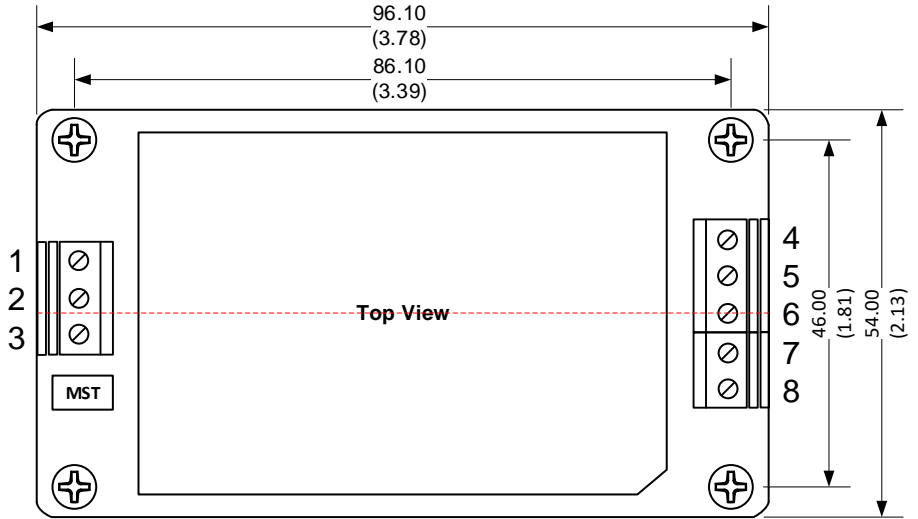


Pin Output Specifications	
Pin	Single
1	GND
2	AC Input (N)
3	AC Input (L)
4	-V Output
5	NC
6	Trim
7	NC
8	+V Output

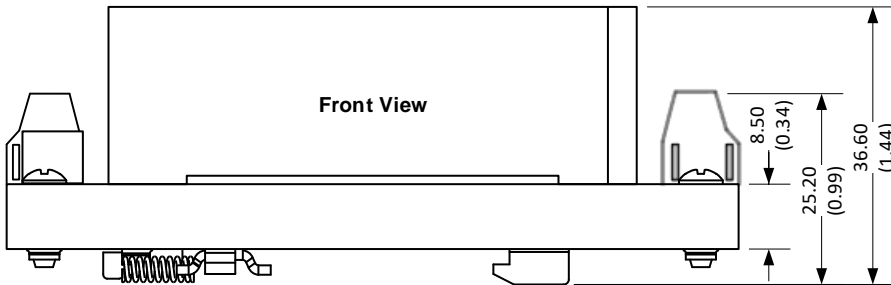


**Notes:**  
 All dimensions are typical in millimeters (inches).  
 Wire range : 24-12 AWG  
 Tightening torque : Max 0.4 N.m  
 General tolerance  $\pm 1.00$  : ( $\pm 0.04$ )

## Dimensions with STD Optional



Pin Output Specifications	
Pin	Single
1	GND
2	AC Input (N)
3	AC Input (L)
4	-V Output
5	NC
6	Trim
7	NC
8	+V Output



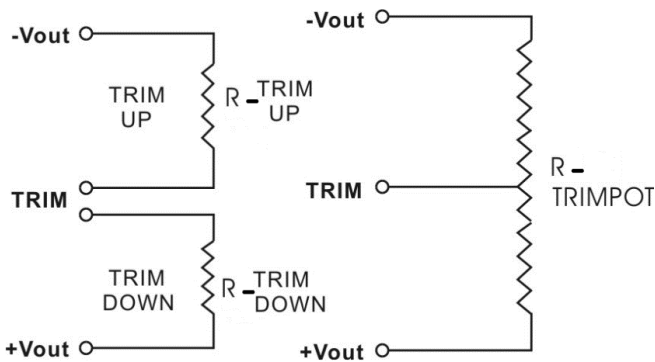
**Notes:**  
 All dimensions are typical in millimeters (inches).  
 Mounting rail : TS35, rail need to connect safety ground  
 Wire range : 24-12 AWG  
 Tightening torque : Max 0.4 N.m  
 General tolerance  $\pm 1.00$  : ( $\pm 0.04$ )

## Trimming

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

**Fixed Resistor**

**Variable Potentiometer**



Leave open if not used.

**AME25-3S277VZ**

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	2.970
Rt down (KΩ)	70.081	43.295	30.877	23.713	19.049	15.772	13.343	11.471	9.983	8.773
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	3.630
Rt up (KΩ)	275.589	58.095	32.081	21.970	16.593	13.256	10.983	9.335	8.085	7.105

**AME25-5S277VZ**

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	4.950	4.900	4.850	4.800	4.750	4.700	4.650	4.600	4.550	4.500
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)	5.050	5.100	5.150	5.200	5.250	5.300	5.350	5.400	5.450	5.500
Rt up (KΩ)	164.000	81.500	54.000	40.250	32.000	26.500	22.571	19.625	17.333	15.500

**AME25-9S277VZ**

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	8.910	8.820	8.730	8.640	8.550	8.460	8.370	8.280	8.190	8.100
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)	9.090	9.180	9.270	9.360	9.450	9.540	9.630	9.720	9.810	9.900
Rt up (KΩ)	328.532	126.639	78.148	56.357	43.975	35.990	30.412	26.297	23.134	20.629



### AME25-12S277VZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	11.880	11.760	11.640	11.520	11.400	11.280	11.160	11.040	10.920	10.800
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)	12.120	12.240	12.360	12.480	12.600	12.720	12.840	12.960	13.080	13.200
Rt up (KΩ)	211.778	57.030	32.596	22.642	17.238	13.845	11.516	9.819	8.527	7.511

### AME25-15S277VZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	14.850	14.700	14.550	14.400	14.250	14.100	13.950	13.800	13.650	13.500
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)	15.150	15.300	15.450	15.600	15.750	15.900	16.050	16.200	16.350	16.500
Rt up (KΩ)	124.000	61.500	40.667	30.250	24.000	19.833	16.857	14.625	12.889	11.500

### AME25-24S277VZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	23.760	23.520	23.280	23.040	22.800	22.560	22.320	22.080	21.840	21.600
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)	24.240	24.480	24.720	24.960	25.200	25.440	25.680	25.920	26.160	26.400
Rt up (KΩ)	239.556	64.606	36.982	25.728	19.619	15.783	13.150	11.232	9.771	8.622

### AME25-48S277VZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	47.520	47.040	46.560	46.080	45.600	45.120	44.640	44.160	43.680	43.200
Rt down (KΩ)	4309.220	1577.161	956.816	682.305	527.471	428.058	358.828	307.846	268.737	237.787
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	48.480	48.960	49.440	49.920	50.400	50.880	51.360	51.840	52.320	52.800
Rt up (KΩ)	98.559	57.291	40.209	30.870	24.982	20.930	17.971	15.716	13.940	12.505

**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](http://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](http://www.aimtec.com).