

## Series AME40-CJZ

### 40 Watt | AC-DC / DC-DC Converter



#### FEATURES:

- I/O Isolation 3000VAC
- Operating Temp: -40 °C to +70 °C
- Input: 85-264VAC/47-440Hz, or 100-370VDC
- Over current, Over Voltage Protection
- Continuous Short circuit protection
- Low no load consumption  $\leq 0.5W$
- Efficiency up to 84%
- Output Voltage adjustment

#### Models Single output



Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load ( $\mu F$ )	Efficiency 230VAC (%)
AME40-3.3SCJZ*	85-264/47-440	100-370	3.3	8	60,000	78
AME40-5SCJZ*	85-264/47-440	100-370	5	8	40,000	82
AME40-9SCJZ*	85-264/47-440	100-370	9	4.44	12,000	84
AME40-12SCJZ*	85-264/47-440	100-370	12	3.33	9000	84
AME40-15SCJZ*	85-264/47-440	100-370	15	2.66	7000	84
AME40-24SCJZ*	85-264/47-440	100-370	24	1.66	2000	84

#### Models Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load ( $\mu F$ )	Efficiency 230VAC (%)
AME40-5DCJZ	85-264/47-440	100-370	$\pm 5$	$\pm 4$	$\pm 12,000$	82
AME40-12DCJZ	85-264/47-440	100-370	$\pm 12$	$\pm 1.66$	$\pm 4400$	84
AME40-15DCJZ	85-264/47-440	100-370	$\pm 15$	$\pm 1.33$	$\pm 1000$	84

#### Models Asymmetric Separated Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load ( $\mu F$ )	Efficiency 230VAC (%)
AME40-524DCJZ	85-264/47-440	100-370	5/24	5/0.625	10,000/400	82

**Note:** Add suffix "-ST" for optional screw terminal bottom plate, excluding "AME40-5DCJZ", "AME40-15DCJZ" and "AME40-524DCJZ" models.

\*Output power must not exceed the listed values.

#### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		1	A
	230 VAC		0.6	A
Inrush current <2ms (cold start)	115 VAC	30		A
	230 VAC	50		A

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Single, Dual and Main Dual Asymmetrical output	±2		%
	Auxiliary Dual Asymmetrical output	±5		%
Line regulation	Single, Dual and Main Dual Asymmetrical output	±0.5		%
	Auxiliary Dual Asymmetrical output	±1.5		%
Load regulation (single output)	0-100% load	±1		
Load Regulation (dual output)	10-100% Balanced load	±2		%
Load Regulation (asymmetric separated output)	25-100% Balanced load, main output	±2		%
	25-100% Balanced load, auxiliary output	±5		%
Cross regulation (dual output)		±5	±8	%
Cross regulation (asymmetric separated output)	Main output	±1		
	Auxiliary output	±7		
Ripple & Noise		50	100	mV p-p
Hold-up time	115VAC, 20MHz bandwidth	15		ms
	230VAC, 20MHz bandwidth	80		ms
Voltage adjustment range	Single output only		±10	% of Vout

### Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		3000	VAC
Isolation voltage between Main and Auxiliary output	60 sec		500	VAC
Isolation Resistance		>1000		MΩ

### General Specifications

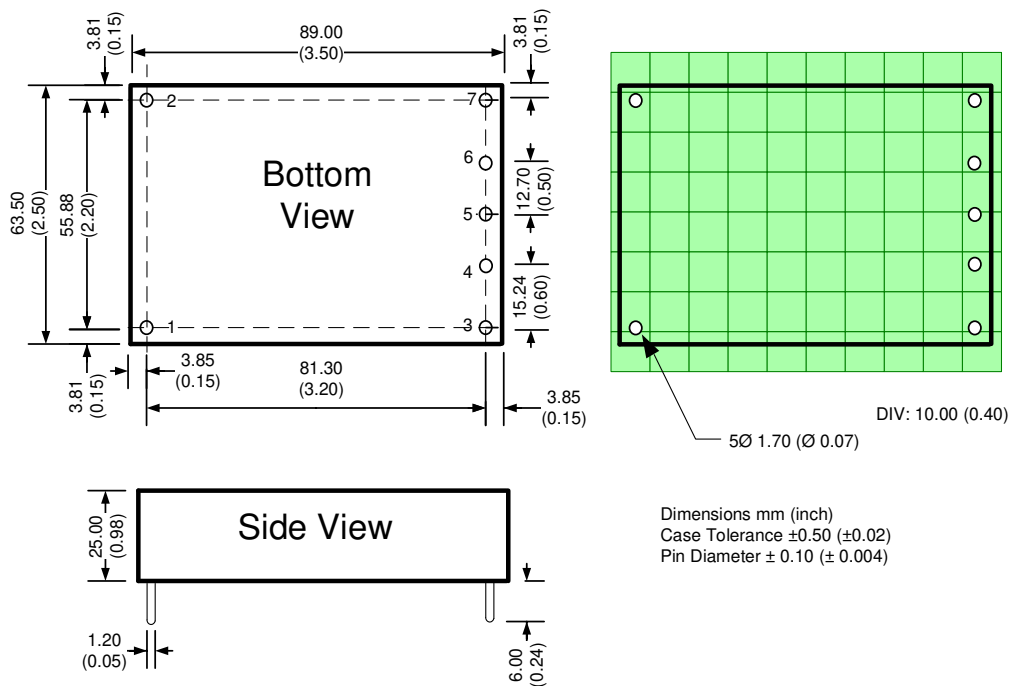
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	65		KHz
Protection class		Class II		
Over current protection		≥110		% of Iout
Over voltage protection		Zener diode clamp		
Short circuit protection		Continuous, Auto recovery		
Operating temperature	See derating curve	-40 to +70		°C
Storage temperature		-40 to +85		°C
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	Pin mountable	225		g
	With optional -ST mounting plate	310		
Dimensions (L x W x H)	Pin mountable: 3.5 x 2.5 x 0.98 inches	89.0 x 63.5 x 25.0 mm		
	With optional -ST mounting plate: 5.31 x 2.76 x 1.32 inches	135.0 x 70.0 x 33.5 mm		
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		
Agency approvals	cULus (except for models marked with *), CE (except for models marked with *)	
Standards	Information technology Equipment	IEC/EN/UL 60950-1
	EMI - Conducted and radiated emission	EN55022, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2: Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$ , Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3: 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4: $\pm 2\text{KV}$ , Criteria B
	Surge Immunity	IEC 61000-4-5: line to line $\pm 1\text{KV}$ , line to GND $\pm 2\text{KV}$ , Criteria B
	RF, Conducted Disturbance Immunity	IEC 61000-4-6: 10Vrms, Criteria A
	Power frequency Magnetic Field Immunity	IEC 61000-4-8: 10A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11: 0-70%, Criteria B

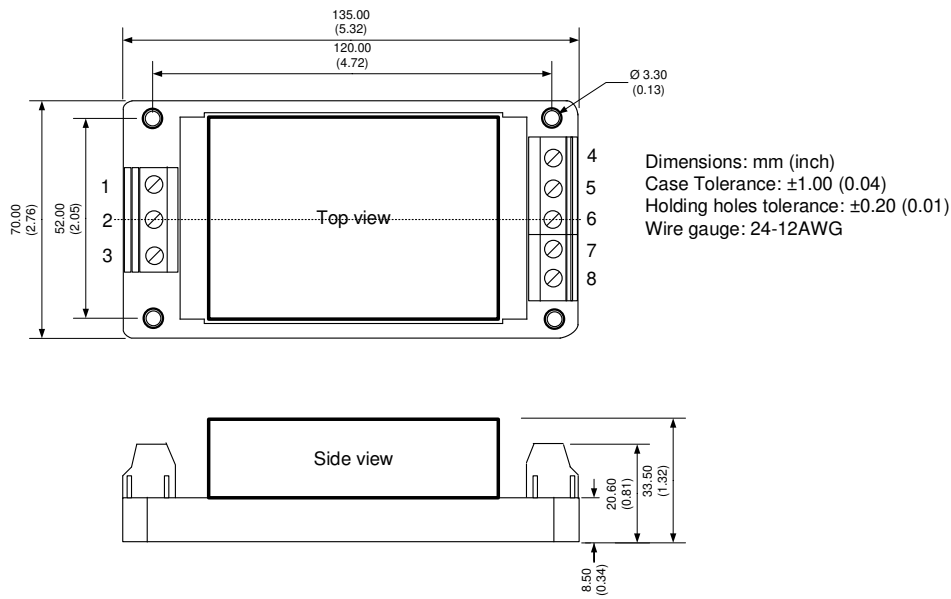
## Dimensions



## Pin Out Specifications

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

**Optional -ST bottom plate**

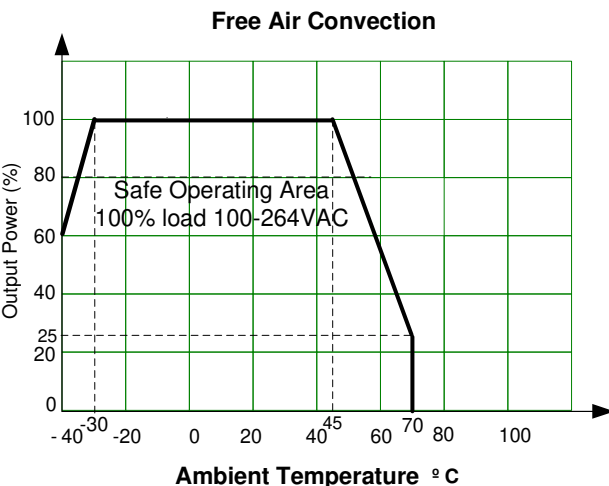


**Pin Out Specifications for -ST models**

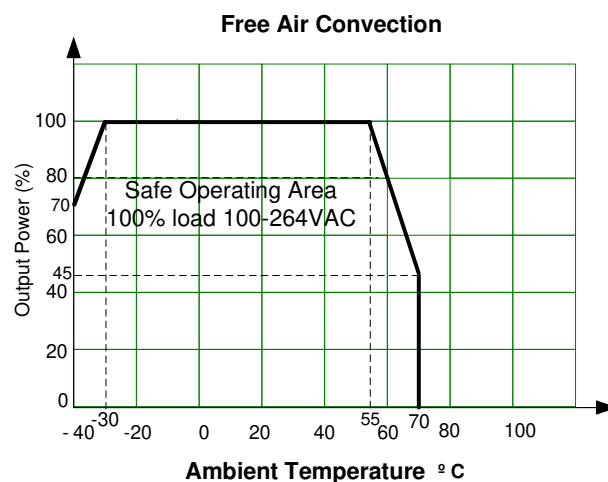
Pin	Single	Dual	Asymmetric Dual
1	AC Input (L)	AC Input (L)	AC Input (L)
2	AC Input (N)	AC Input (N)	AC Input (N)
3	N.C.	N.C.	N.C.
4	+V Output	+V Output	+V Output 2
5	N.C.	N.C.	+V Output 1
6	-V Output	Common	-V Output 2
7	N.C.	N.C.	-V Output 1
8	Trim	-V Output	N.C.

**Deratings**

AME40-3.3SCJZ & AME40-5SCJZ

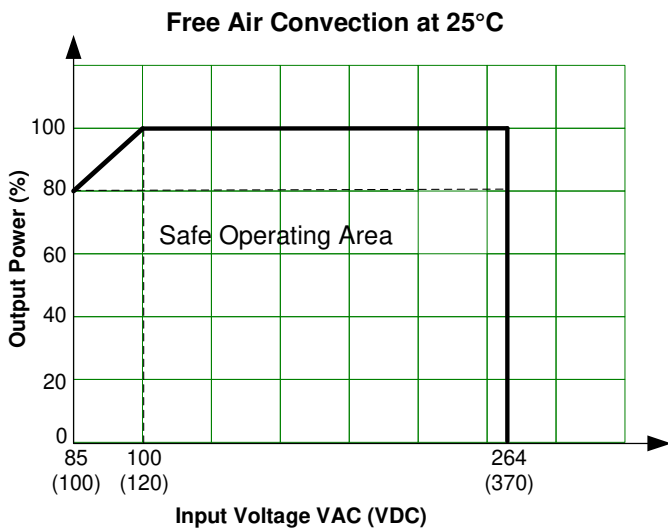
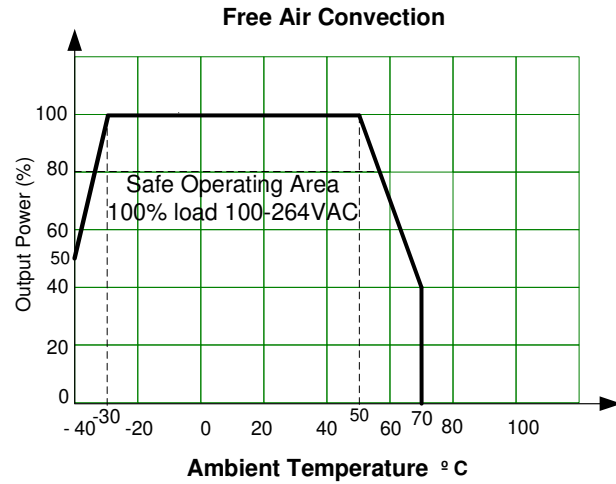
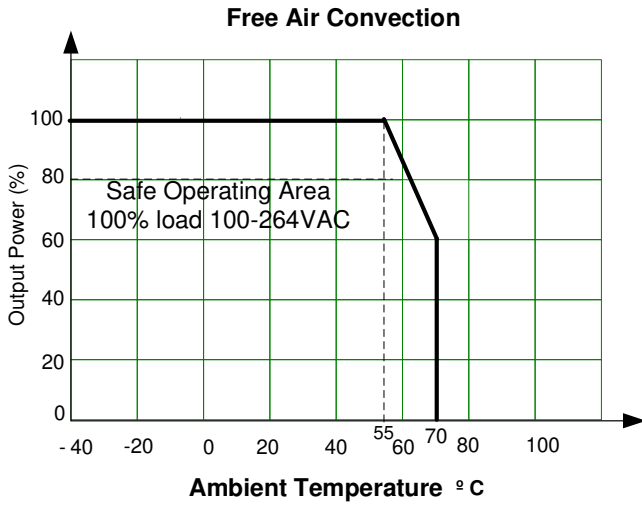


AME40-9SCJZ, AME40-12SCJZ & AME40-15SCJZ

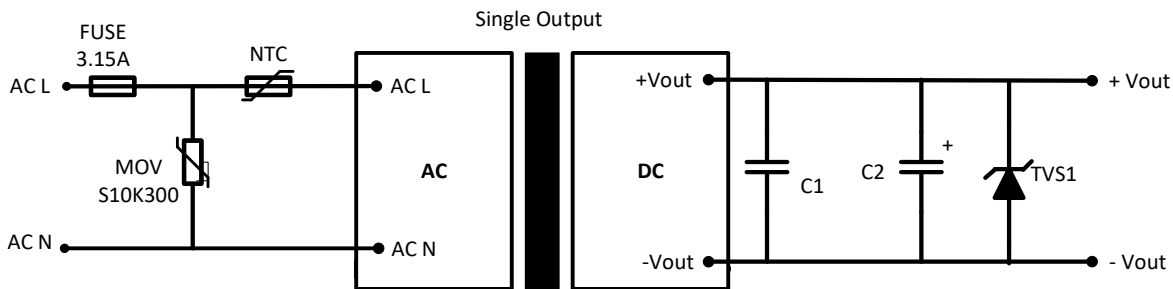


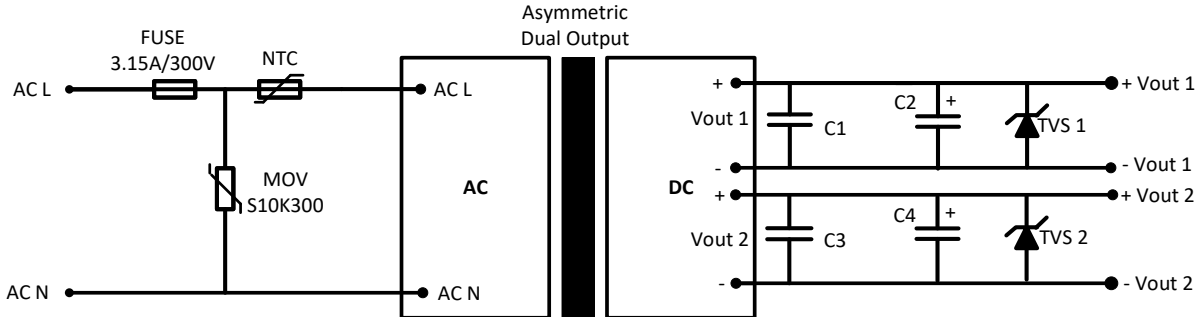
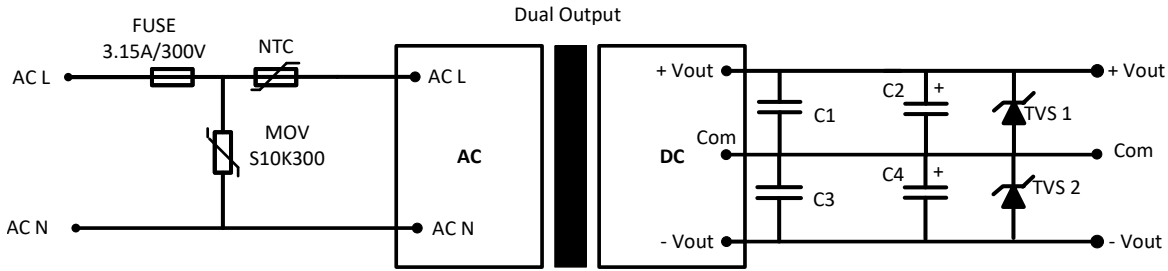
AME40-24SCJZ

All dual output models



**Typical application circuits**





Model	C2	C4	TVS1	TVS2
Single 3.3 & 5 Vout	680 $\mu$ F	-	7V	-
Single 9 Vout	330 $\mu$ F	-	12V	-
Single 12 & 15 Vout	220 $\mu$ F	-	20V	-
Single 24 Vout	120 $\mu$ F	-	30V	-
Dual $\pm$ 5 Vout	680 $\mu$ F	680 $\mu$ F	7V	7V
Dual $\pm$ 12 & $\pm$ 15 Vout	220 $\mu$ F	220 $\mu$ F	20V	20V
Dual 5/12 Vout	680 $\mu$ F	220 $\mu$ F	7V	20V
Dual 5/24 Vout	680 $\mu$ F	120 $\mu$ F	7V	30V

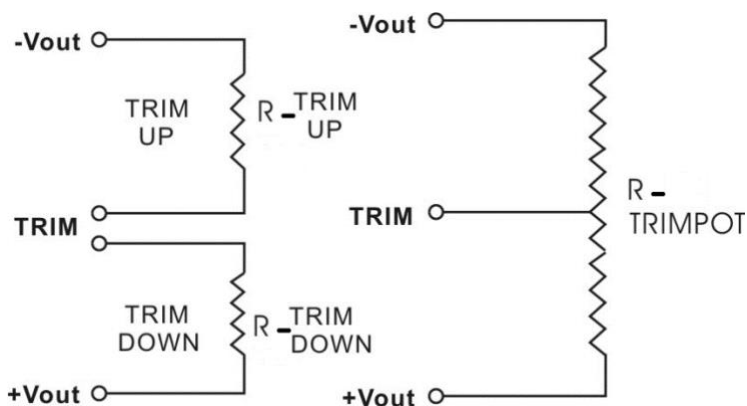
\*C1, C3, C5 are C/C used for high frequency noise filtering.

## Trimming

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

### Fixed Resistor

### Variable Potentiometer



Leave open if not used.

AME40-3.3SCJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.27	3.23	3.2	3.17	3.14	3.1	3.07	3.04	3	2.97
Rt down (KΩ)	109.727	50.913	35.75	27.244	21.8	17	14.465	12.5	10.478	9.277
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.33	3.37	3.4	3.43	3.47	3.5	3.53	3.56	3.6	3.63
Rt up (KΩ)	105.286	38.158	25.571	19.108	14.184	11.828	10.104	8.789	7.455	6.67

AME40-5SCJZ

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)	160.7	78.2	50.7	36.95	28.7	23.2	19.271	16.325	14.033	12.2
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	81.5	54	40.25	32	26.5	22.571	19.625	17.333	15.5

AME40-9SCJZ

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)	254.795	141.96	97.332	73.419	58.515	48.336	40.943	35.329	30.921	27.369
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)	187.839	76.19	47.509	34.368	26.829	21.939	18.511	15.974	14.021	12.471

AME40-12SCJZ

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	111.59	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	57.03	32.596	22.642	17.238	13.845	11.516	9.819	8.527	7.511

AME40-15SCJZ

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)	492.012	220.375	140.481	102.271	79.872	65.153	54.742	46.989	40.991	36.214
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	61.5	40.667	30.25	24	19.833	16.857	14.625	12.889	11.5

AME40-24SCJZ

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	13.15	11.232	9.771	8.622

**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).