

## Series AME40-MJZ

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



#### FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -40 °C to +70 °C
- Input: 85-264VAC/47-440Hz, or 120-370VDC
- Over current, Over Voltage Protection
- Continuous Short circuit protection
- Low no load consumption ≤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 (μF)	Efficiency 230VAC (%)
AME40-12SMJZ	85-264/47-440	120-370	12	3.33	9000	84
AME40-24SMJZ	85-264/47-440	120-370	24	1.66	2000	84
AME40-48SMJZ	85-264/47-440	120-370	48	0.83	1000	84

#### 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	Full load	±2		%
Line regulation	LL-HL, Full Load	±0.5		%
Load regulation	1-100% load	±1		%
Ripple & Noise	20MHz bandwidth	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		4000	VAC
Isolation Resistance		>100		MΩ

#### General Specifications

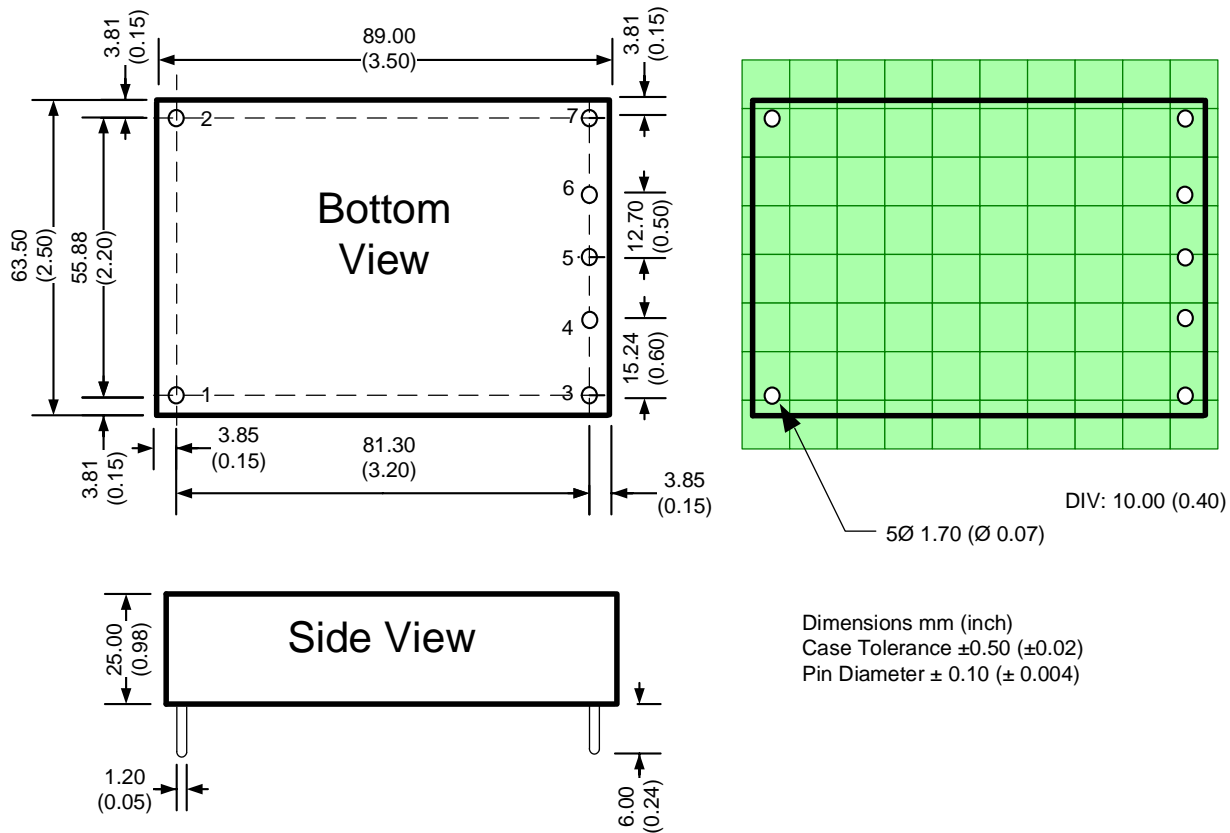
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	65		KHz
Protection class		Class II		
Over current protection		≥110		% of Iout
Over voltage protection		Zener diode clamp		
Short circuit protection		Continuous, Auto recovery		
Operating temperature	See derating curve	-40 to +70		°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		225		g
Dimensions (L x W x H)		3.5 x 2.5 x 0.98 inches	89.0 x 63.5 x 25.0 mm	
MTBF		> 200,000 hrs (MIL-HDBK -217F, t <sub>a</sub> +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	IEC/EN/UL 60950-1
	EMI - Conducted and radiated emission	EN55022, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2 Level 3
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Level 3
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 Level 3
	Surge Immunity	IEC 61000-4-5 Level 3
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Level 3
	Power frequency Magnetic Field Immunity	IEC 61000-4-8 Level 3
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 Class 2

## Dimensions

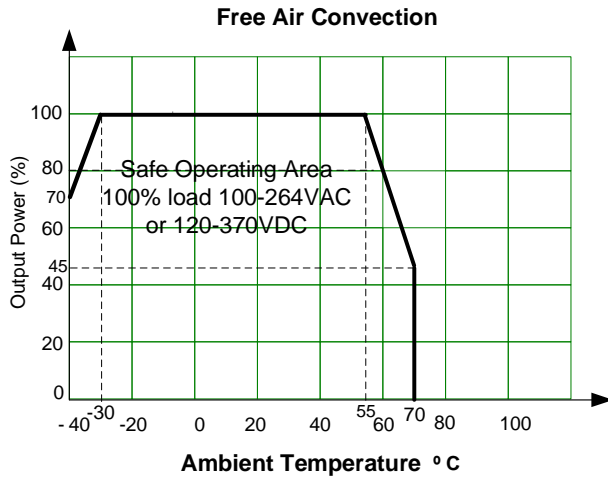


## Pin Out Specifications

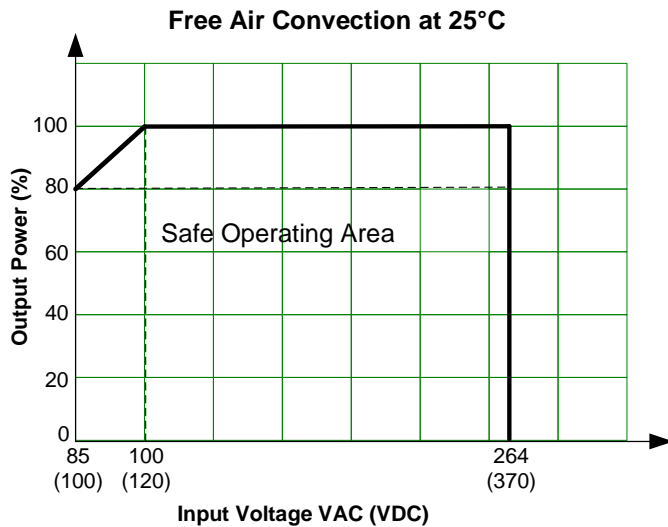
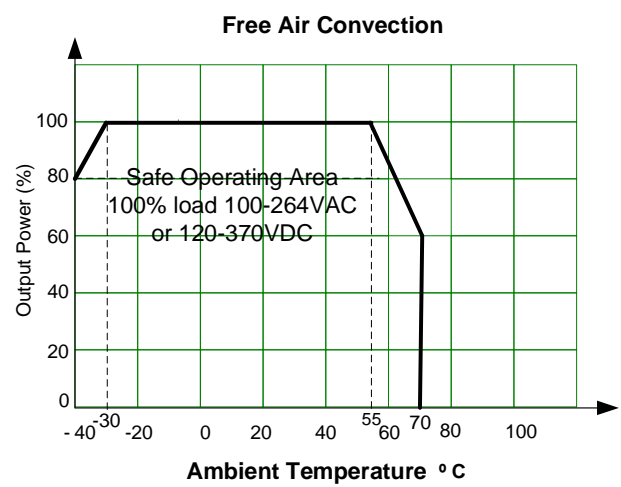
Pin	Single
1	AC Input (L)
2	AC Input (N)
3	+V Output
4	No pin
5	-V Output
6	No pin
7	Trim

## Deratings

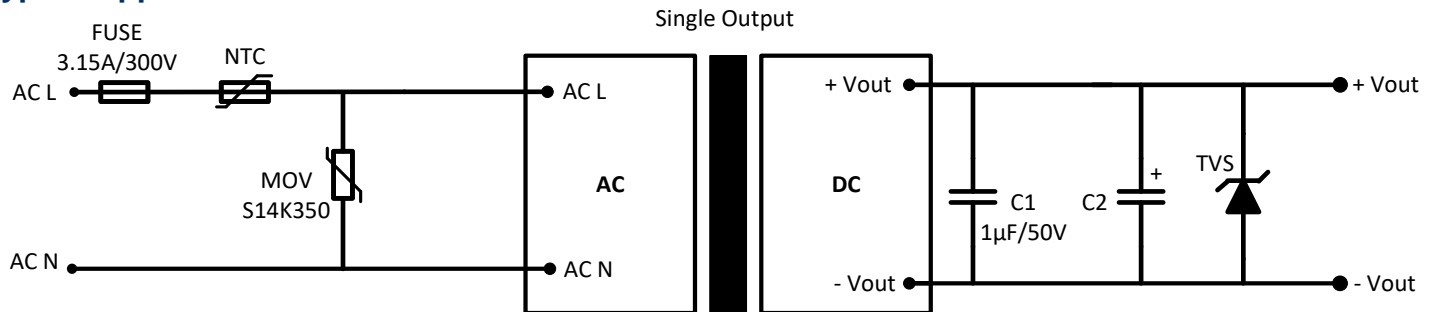
AME40-12SMJZ



AME40-24SMJZ & AME40-48SMJZ



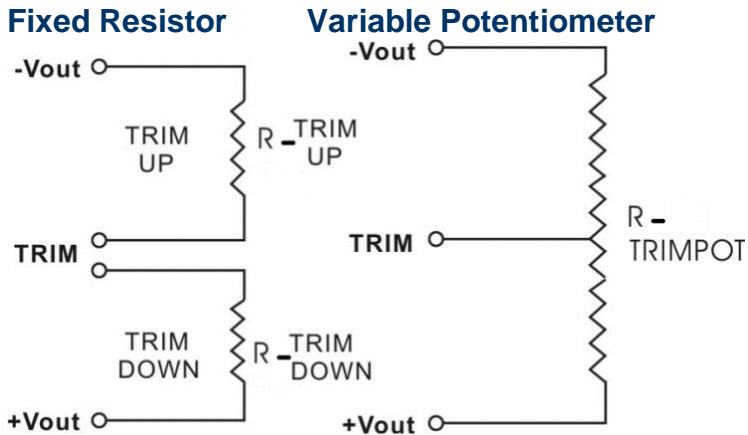
## Typical application circuits



Model	C2	TVS
Single 12 Vout	220 µF	20V
Single 24 Vout	120 µF	30V
Single 48 Vout	100 µF	64V

### Trimming

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



Leave open if not used.

#### AME40-12SMJZ

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

#### AME40-24SMJZ

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

#### AME40-48SMJZ

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)	1216.754	756.639	545.609	424.485	345.902	290.797	250.014	218.613	193.691	173.429
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)	374	86.766	48.699	33.664	25.613	20.597	17.172	14.684	12.796	11.313

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