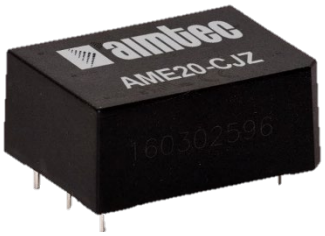
aimtec
Your Power Partner

Series AME20-CJZ

20 Watt | AC-DC / DC-DC Converter



FEATURES:

- I/O Isolation 3000VAC
- Operating Temp: -40 ˚C to +70 ˚C
- Input: 85-264VAC, 47-63Hz, or 100-370VDC
- Over current, Over Voltage Protection
- Continuous Short circuit protection
- Energy Star compliant
- Compact package
- Efficiency up to 85%

CE RoHS

Models
Single output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (µF)	Efficiency 230VAC (%)
AME20-5SCJZ	85-264/47-63	100-370	5	3.5	12240	78
AME20-9SCJZ	85-264/47-63	100-370	9	2.1	7200	80
AME20-12SCJZ	85-264/47-63	100-370	12	1.6	5400	82
AME20-15SCJZ	85-264/47-63	100-370	15	1.3	2720	83
AME20-24SCJZ	85-264/47-63	100-370	24	0.85	1840	85

Models
Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (µF)	Efficiency 230VAC (%)
AME20-5DCJZ #	85-264/47-63	120-370	±5	±2	±8000	75
AME20-12DCJZ #*	85-264/47-63	120-370	±12	±0.83	±960	82
AME20-15DCJZ #*	85-264/47-63	120-370	±15	±0.65	±880	83

Models
Triple output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Auxiliary Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (µF)	Efficiency 230VAC (%)
AME20-505TCJZ	85-264/47-63	120-370	5	±5	2.5/±0.5	11200/±4480	74
AME20-512TCJZ	85-264/47-63	120-370	5	±12	2/±0.4	16000/±1600	75
AME20-515TCJZ	85-264/47-63	120-370	5	±15	2/±0.3	13520/±370	76
AME20-524TCJZ	85-264/47-63	120-370	5	±24	2/±0.2	11200/±370	77

Models
Asymmetric Separated Dual output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (µF)	Efficiency 230VAC (%)
AME20-512DCJZ	85-264/47-63	120-370	5/12	2.5/0.6	32400/3250	75
AME20-515DCJZ	85-264/47-63	120-370	5/15	2.5/0.5	28000/1980	76
AME20-524DCJZ	85-264/47-63	120-370	5/24	2.5/0.3	28000/720	77

Note: Add suffix "-ST" for optional screw terminal bottom plate, for "AME20-515TCJZ-ST" and "AME20-524DCJZ-ST" models only.

*Output power must not exceed the listed values.

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Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		600	mA
	230 VAC		340	mA
Inrush current <2ms (cold start)	115 VAC	16		A
	230 VAC	30		A
Leakage current	230VAC/50Hz		0.3	mA
External fuse	Recommended slow blow type	3.15/250V		A

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation	Full load, main output	±0.5		%
	Full load, auxiliary output	±1.5		%
Load regulation (single output)	0-100% load	±1		%
Load Regulation (dual output)	10-100% Balanced load	±2		%
Load Regulation (triple & asymmetric separated output)	10-100% Balanced load, main output	±3		
	10-100% Balanced load, auxiliary output	±5		
Minimum load	Single output	0		%
	Others	10		%
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 models 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			500	VDC
Isolation voltage Input to Ground			2000	VAC
Isolation Resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	65		KHz
Protection class	Class I			
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	120		g
	With optional -ST mounting plate	170		
Dimensions (L x W x H)	Pin mountable: 2.76 x 1.89 x 0.93 inches 70.0 x 48.0 x 23.5 mm			
	With optional -ST mounting plate: 3.78 x 2.13 x 1.26 inches 96.1 x 54.0 x 32.0 mm			
MTBF	> 300,000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

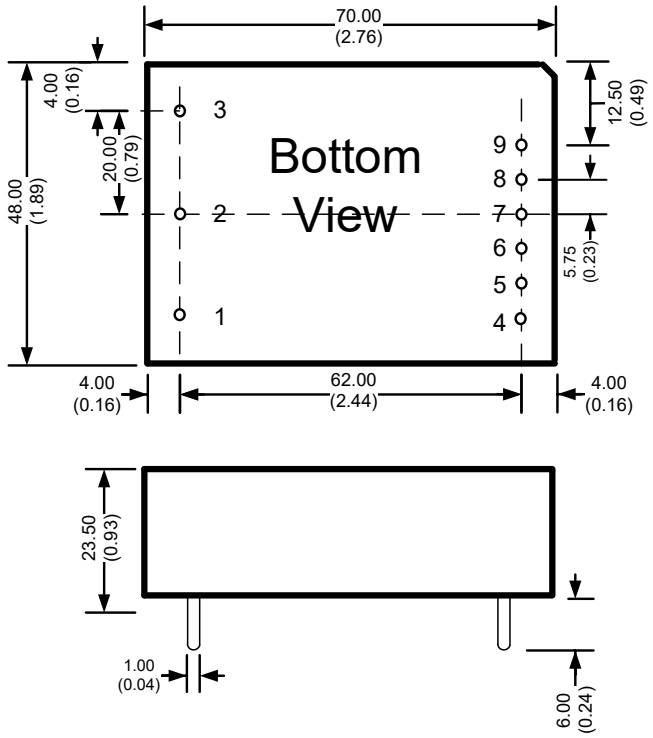
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

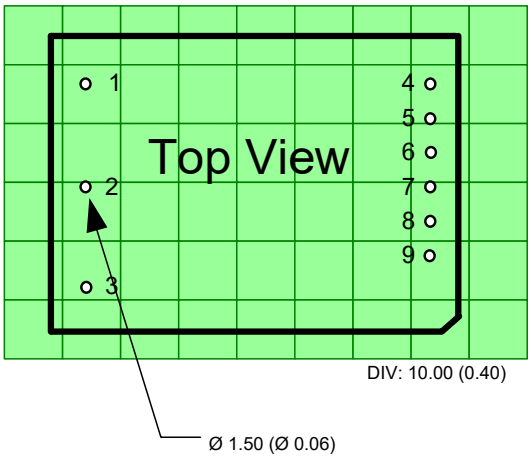
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Safety Specifications

Parameters		
Agency approvals	CE (with exception of the models marked *)	
Standards	Information technology Equipment	IEC/EN 60950-1, design to meet UL60950-1 (with exception of the models marked #)
	EMI - Conducted and radiated emission	EN55022, 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
	Surge Immunity	IEC 61000-4-5: line to line ±1KV, line to GND ±2KV, 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





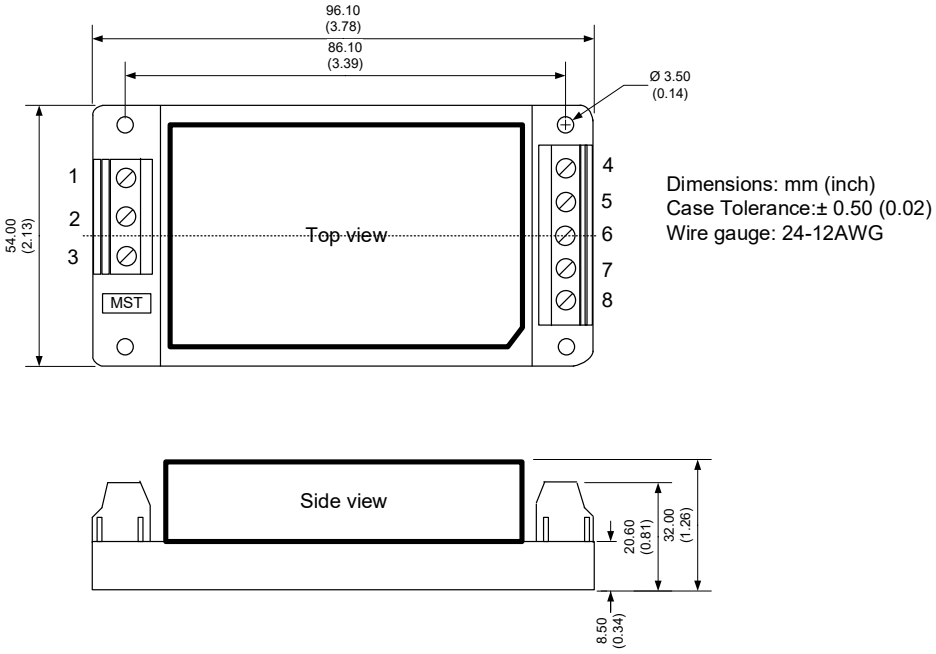
Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Diameter 1.0 ± 0.10 (0.04 ± 0.004)

Pin Out Specifications

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

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Optional -ST bottom plate

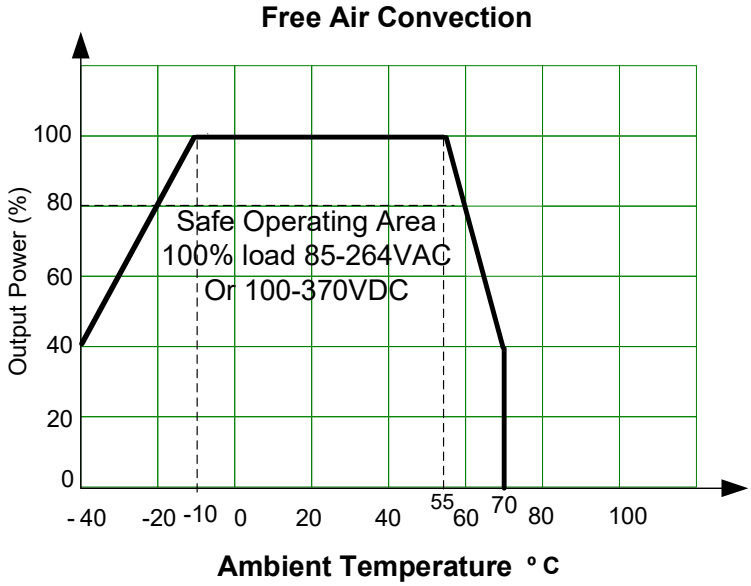


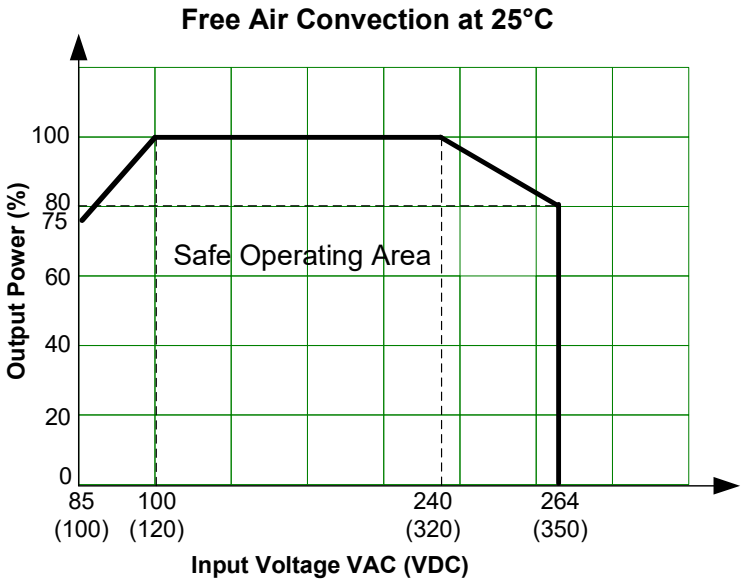
Dimensions: mm (inch)
Case Tolerance:± 0.50 (0.02)
Wire gauge: 24-12AWG

Pin Out Specifications for -ST models

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

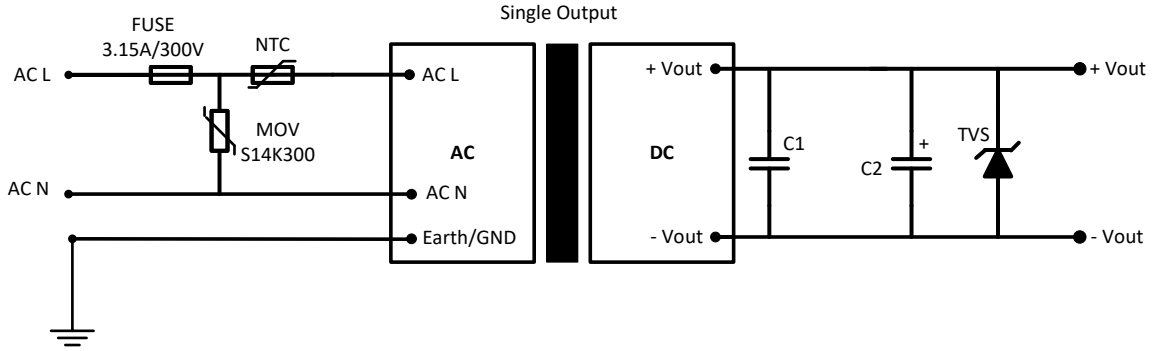
Derating

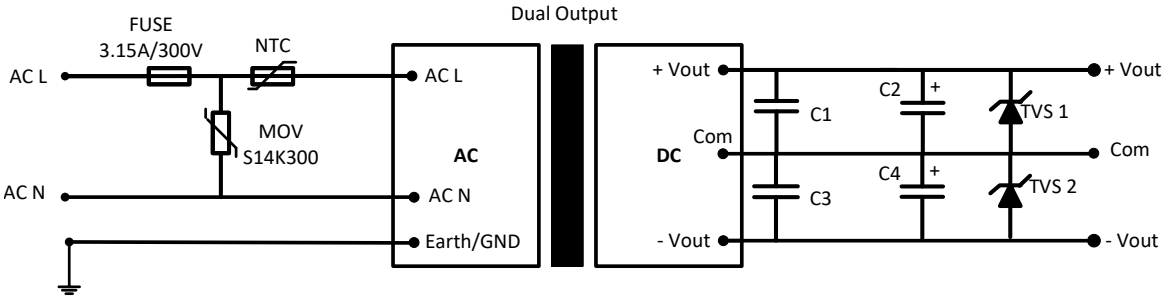


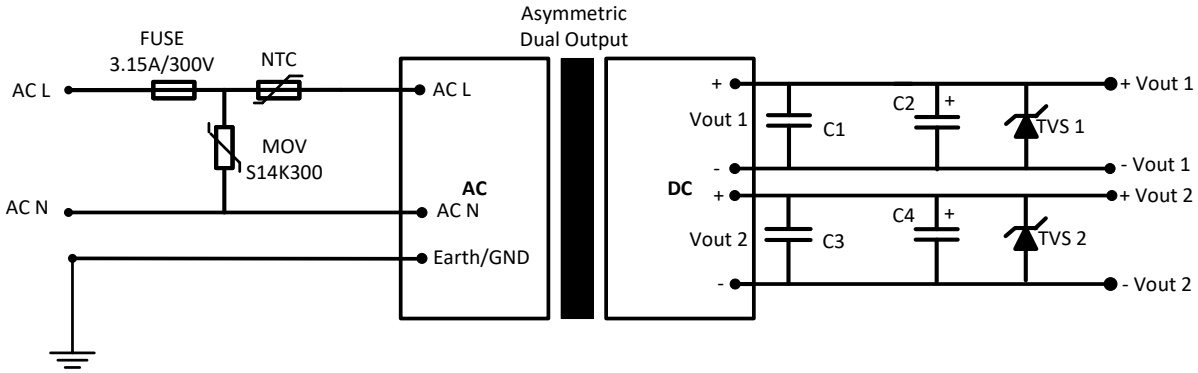


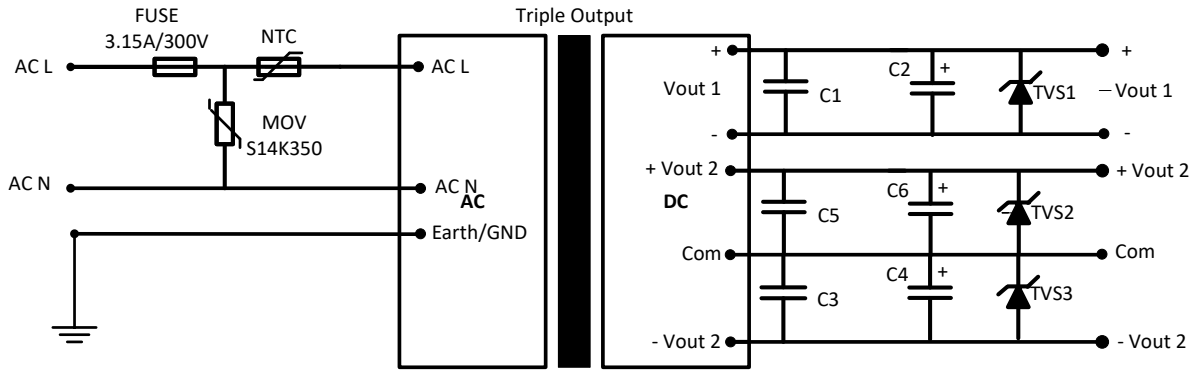
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Typical application circuits









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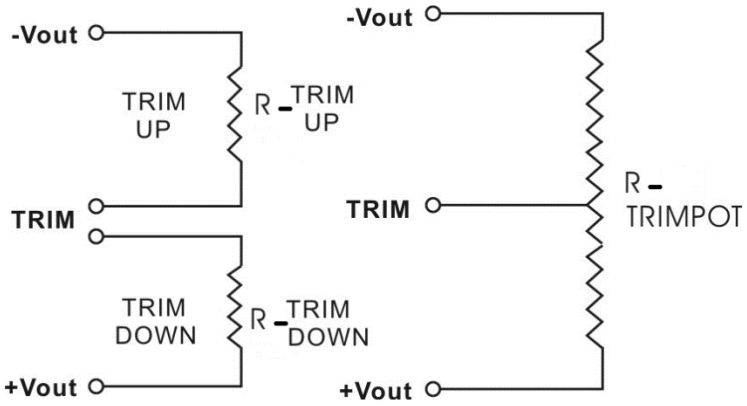
Model	C2	C4	C6	TVS1	TVS2	TVS3
Single 5 Vout	330 µF	-	-	7V	-	-
Single 9 Vout	220 µF	-	-	12V	-	-
Single 12 & 15 Vout	220 µF	-	-	20V	-	-
Single 24 Vout	220 µF	-	-	30V	-	-
Dual ±5 Vout	470 µF	470 µF	-	7V	7V	-
Dual ±12 Vout	120 µF	120 µF	-	20V	20V	-
Dual ±15 Vout	68 µF	68 µF	-	20V	20V	-
Triple 5/±5 Vout	330 µF	120 µF	120 µF	7V	7V	7V
Triple 5/±12 Vout	330 µF	120 µF	120 µF	7V	20V	20V
Triple 5/±15 Vout	330 µF	120 µF	120 µF	7V	20V	20V
Triple 5/±24 Vout	330 µF	47 µF	47 µF	7V	30V	30V
Dual 5/12 Vout	330 µF	220 µF	-	7V	20V	-
Dual 5/15 Vout	330 µF	220 µF	-	7V	20V	-
Dual 5/24 Vout	330 µF	120 µF	-	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.

AME20-5SCJZ

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

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AME20-9SCJZ

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)	389.533	221.43	153.157	116.145	92.925	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	35.99	30.412	26.297	23.134	20.629

AME20-12SCJZ

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

AME20-15SCJZ

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)	616.5	304	199.833	147.75	116.5	95.667	80.786	69.625	60.944	54
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

AME20-24SCJZ

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

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