Series AM30K-Z

30 Watt | DC-DC Converter



FEATURES:

- Wide Input 2:1 Range
- Full SMD Technology
- 1500 VDC Isolation
- Efficiency up to 91%
- Adjustable Output Voltage
- Remote ON/OFF Function
- Over Current, Voltage, & Temperature Protection
- Soft Start

RoHS CE

Models: Single output

Model	Input – Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM30K-1203SZ	9-18	3.3	5.5	1500	15000	83
AM30K-1205SZ	9-18	5	5.0	1500	10000	86
AM30K-1212SZ	9-18	12	2.5	1500	2200	90
AM30K-1215SZ	9-18	15	2.0	1500	1000	90
AM30K-2403SZ	18-36	3.3	5.5	1500	15000	84
AM30K-2405SZ	18-36	5	5.0	1500	10000	87
AM30K-2412SZ	18-36	12	2.5	1500	2200	91
AM30K-2415SZ	18-36	15	2.0	1500	1000	91
AM30K-4803SZ	36-75	3.3	5.5	1500	15000	84
AM30K-4805SZ	36-75	5	5.0	1500	10000	87
AM30K-4812SZ	36-75	12	2.5	1500	2200	91
AM30K-4815SZ	36-75	15	2.0	1500	1000	91

Add suffix “-K” for optional heat sink

Models: Dual output

Model	Input – Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM30K-1212DZ	9-18	±12	±1.25	1500	±1000	90
AM30K-1215DZ	9-18	±15	±1.0	1500	±680	90
AM30K-2412DZ	18-36	±12	±1.25	1500	±1000	91
AM30K-2415DZ	18-36	±15	±1.0	1500	±680	91
AM30K-4812DZ	36-75	±12	±1.25	1500	±1000	90
AM30K-4815DZ	36-75	±15	±1.0	1500	±680	90

Add suffix “-K” for optional heat sink

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.

Input Specifications

Input Specifications	Nominal	Typical	Maximum	Units
Voltage range	12	9-18		VDC
	24	18-36		
	48	36-75		
Filter	π(Pi) Network			
Start up time		20		ms
Absolute Maximum Rated Input Voltage	12		25	VDC
	24		50	
	48		100	
Peak Input Voltage time			100	ms
On/Off Control	ON – high or open (2.5V TO 5.5V); OFF – low (-0.7V to 0.8V or short circuit between pin 2 & 3)			

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1500	VDC
Resistance		1000		MOhm
Capacitance		1200		pF

Output Specifications

Output Specifications	Conditions	Typical	Maximum	Units
Voltage accuracy		±5		%
Voltage balance (Dual Output model)	Balanced Load	±5		%
Over voltage protection		125		%
Over current protection		120		%
Short Circuit protection	Continuous			
Short circuit restart	Auto Recovery			
Line voltage regulation (Single)	HL-LL	±5		%
Line voltage regulation (Dual)	HL-LL	±5		%
Load voltage regulation (Single)	10% to 100% Load	±0.5		%
Load voltage regulation (Dual)	10% to 100% Load	±0.5		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	75		m Vp-p
Voltage adjustment range		±10		%

General Specifications

Input Specifications	Conditions	Typical	Maximum	Units
Switching frequency	100% load	270		KHz
Operating temperature	With derating above 60 °C (see graph below)	-40 to +85		°C
Storage temperature		-40 to +125		°C
Max Case temperature			100	
Cooling	Free air convection			
Humidity			95	%
Over Temperature Protection		110		
Case material	Nickel-coated Copper and Epoxy (UL94V-0 rated)			
Weight		48		g
Dimensions (L X W X H)	2.00 x1.60 x0.40 inches		50.80 x 40.60 x 10.20 mm	
MTBF	>1000000 hrs Calculated using MIL-HDBK-217 F at +25 °C			

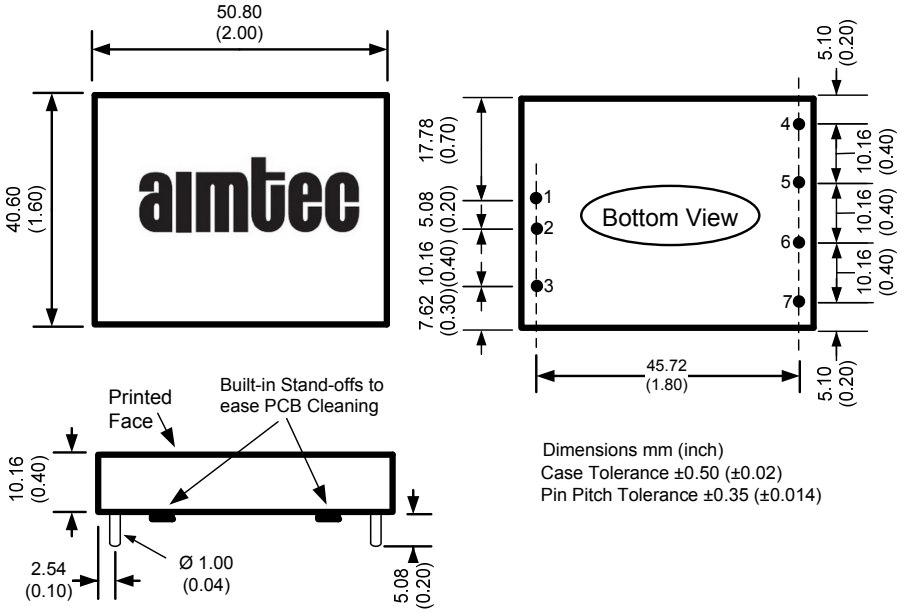
Safety Specifications

Standards	
Agency approvals	CE
Safety	IEC/EN 60950-1
	EN55022 Class A
	EN55022 Class A
	EN61000-4-2 Perf. Criteria B
	EN61000-4-3 Perf. Criteria A
	EN61000-4-4 Perf. Criteria B
	EN61000-4-5 Perf. Criteria B
	EN61000-4-6 Perf. Criteria A
	EN61000-4-8 Perf. Criteria A

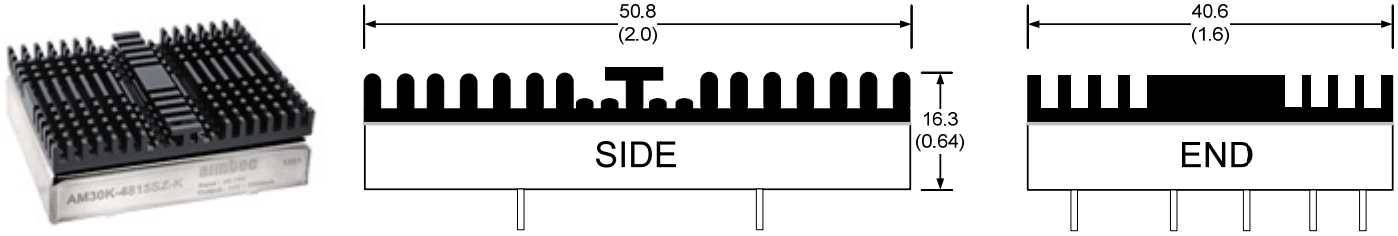
Pin Out Specifications

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	On/Off Control	On/Off Control
4	No Pin	+Vout
5	+Vout	Com
6	-Vout	-Vout
7	Trim	Trim

Dimensions

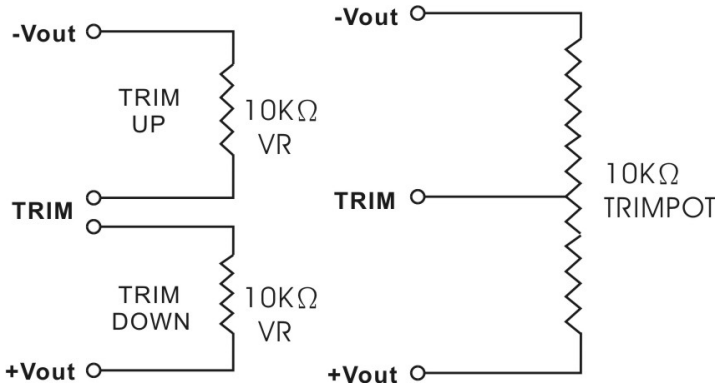


Dimensions with Optional Heat Sink

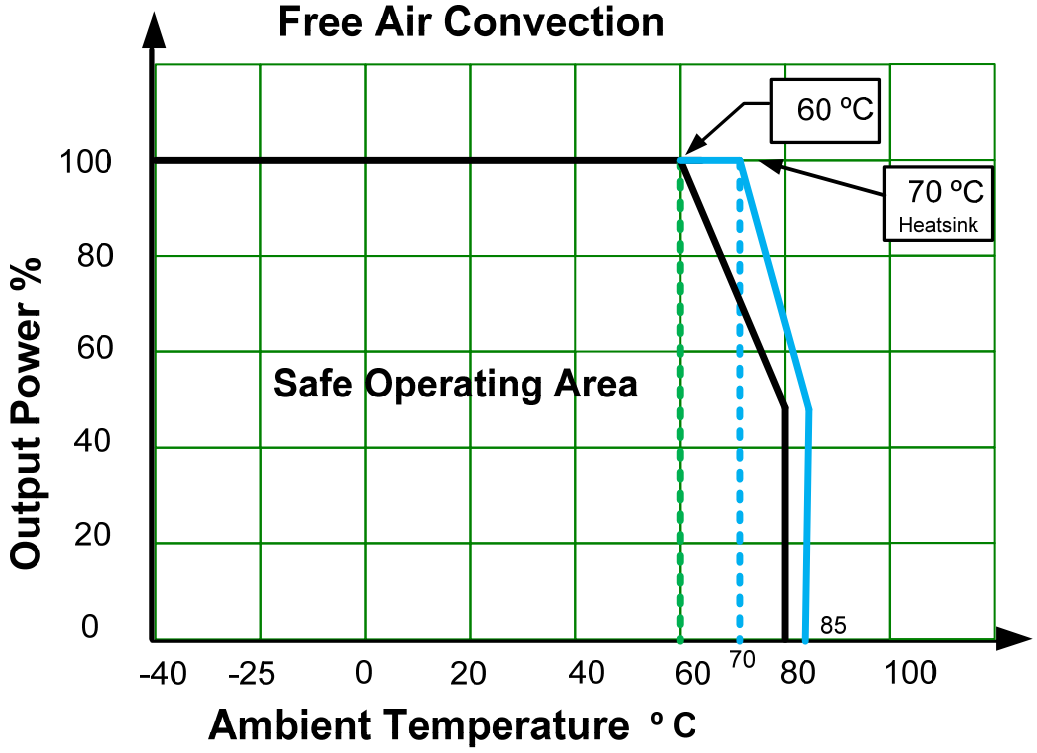


Notes: Add “-K” suffix for ordering, heat sink is affixed with thermally dissipative adhesive tape.
See derating graph for temperature performance. Heat sink material is anodized (black) aluminum, adds weight 17g to total mass (65g). Thermal impedance of converter is: with heatsink 8.7 ℃/W and 10℃/W without heat sink.

Trimming

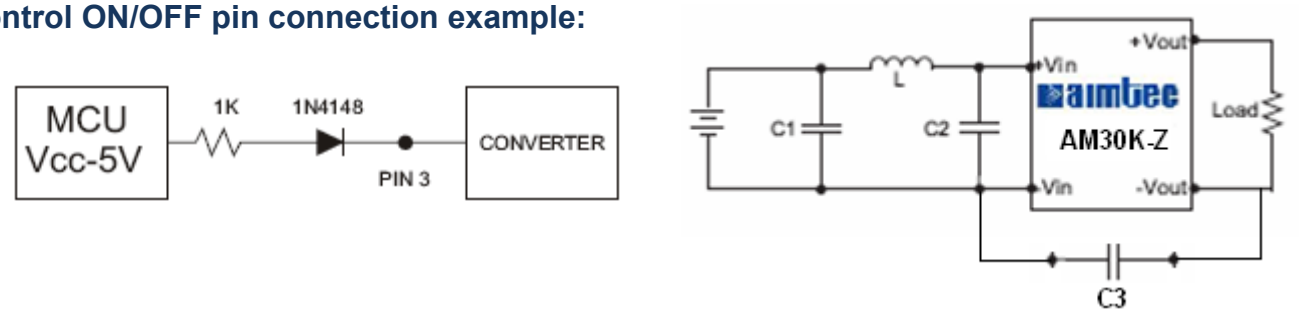


Derating



Extended temperature performance can be achieved with optional heat sink. (add suffix "–K" to part number)

Control ON/OFF pin connection example:



Note A: An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5. The filter capacitor Aimtec suggests: 1000uF, 100V.

Models	C1	L	C2	C3
AM30K-12XXXZ	330 µf, 100V	12µH	100µ, 100V	N/A
AM30K-24XXXZ	330 µf, 100V	12µH	100µ, 100V	N/A
AM30K-48XXXZ	330 µf, 100V	12µH	100µ, 100V	1000Pf, 2000V

Note B: Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

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