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

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

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 drating 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			

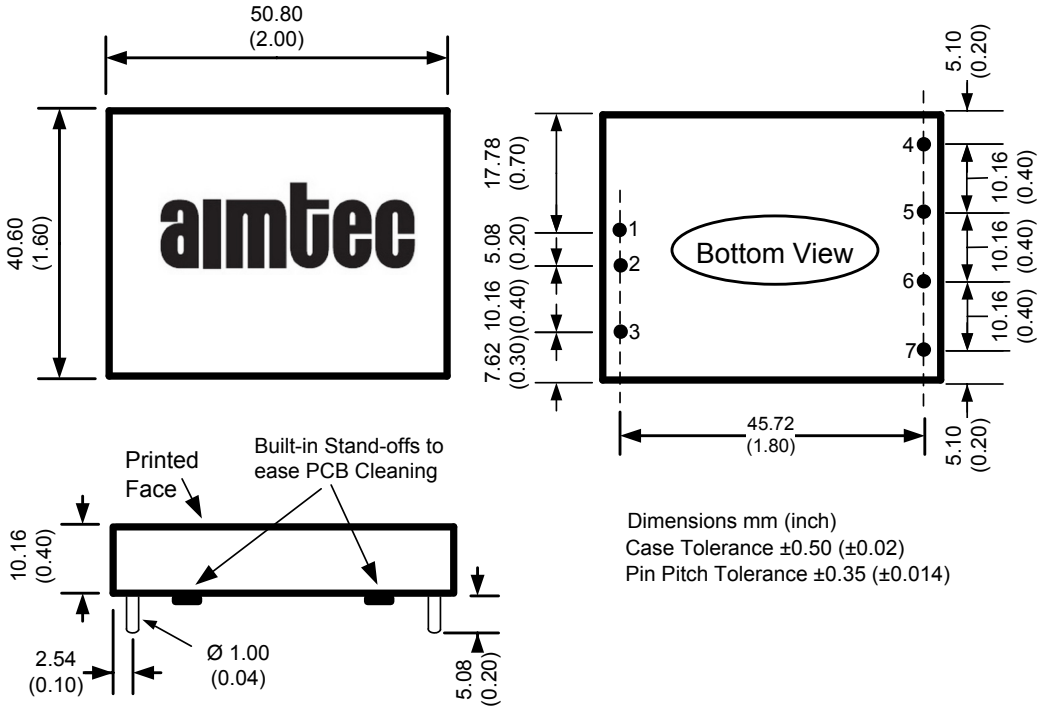
Safety Specifications

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

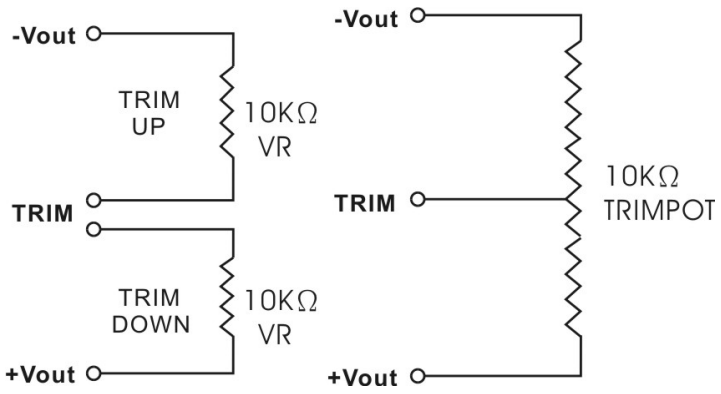
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	On/Off Control	On/Off Control
4	No Pin	+Vout
5	+Vout	Com
6	-Vout	-Vout
7	Trim	Trim

Dimensions

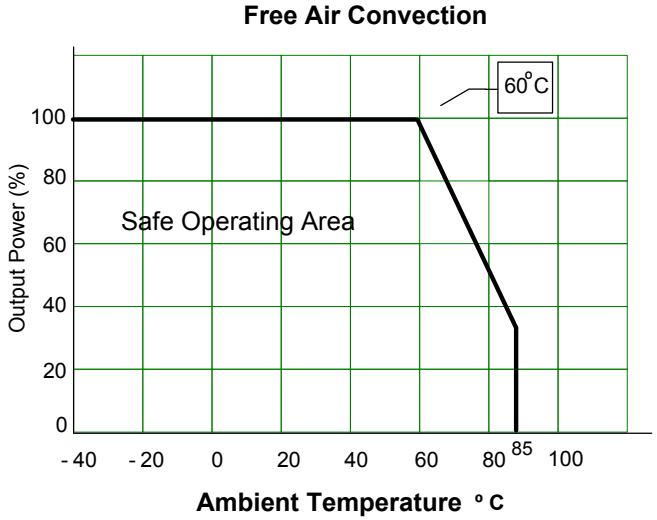


Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Pitch Tolerance ±0.35 (±0.014)

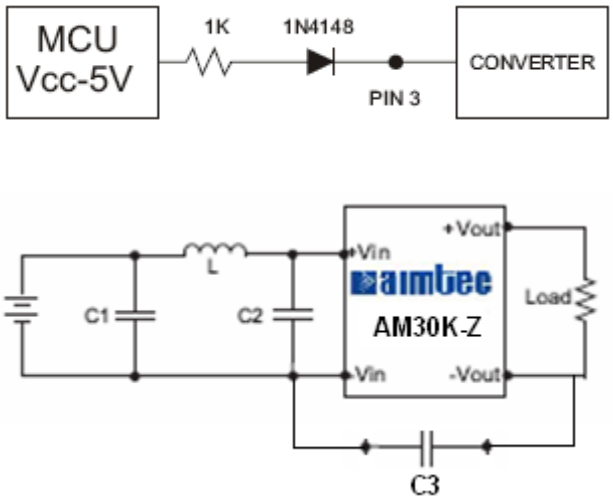
Trimming



Derating



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.