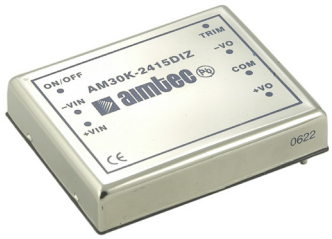
Series AM30K-IZ

30 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- Power modules for PCB mounting
- Capacitive loading up to 5500 µF (36-75V Input)
- Remote On/Off control
- Operating temperature range: -40 to +85ºC
- Soft start
- High efficiency
- Standard package
- UVLO / OVLO Shutdown
- Thermal shutdown

RoHS CE

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Ripple & Noise Typ.	Isolation (VDC)	Efficiency (%)
AM30K-1203SIZ	9-18	3.3	5.5	80 mV p-p	1500	81
AM30K-1205SIZ	9-18	5	5	80 mV p-p	1500	83
AM30K-1212SIZ	9-18	12	2.5	120 mV p-p	1500	86
AM30K-1215SIZ	9-18	15	2	150 mV p-p	1500	87
AM30K-1224SIZ	9-18	24	1.25	240 mV p-p	1500	86
AM30K-2403SIZ	18-36	3.3	5.5	80 mV p-p	1500	82
AM30K-2405SIZ	18-36	5	5	80 mV p-p	1500	86
AM30K-2412SIZ	18-36	12	2.5	120 mV p-p	1500	88
AM30K-2415SIZ	18-36	15	2	150 mV p-p	1500	88
AM30K-2424SIZ	18-36	24	1.25	240 mV p-p	1500	86
AM30K-4803SIZ	36-75	3.3	5.5	80 mV p-p	1500	82
AM30K-4805SIZ	36-75	5	5	80 mV p-p	1500	86
AM30K-4812SIZ	36-75	12	2.5	120 mV p-p	1500	88
AM30K-4815SIZ	36-75	15	2	150 mV p-p	1500	88
AM30K-4824SIZ	36-75	24	1.25	240 mV p-p	1500	86
AM30K-1203SH30IZ	9-18	3.3	6	80 mV p-p	3000	80
AM30K-1205SH30IZ	9-18	5	5	80 mV p-p	3000	81
AM30K-1212SH30IZ	9-18	12	2.5	120 mV p-p	3000	84
AM30K-1215SH30IZ	9-18	15	2	150 mV p-p	3000	83
AM30K-1224SH30IZ	9-18	24	1.2	240 mV p-p	3000	82
AM30K-2403SH30IZ	18-36	3.3	6	80 mV p-p	3000	80
AM30K-2405SH30IZ	18-36	5	5	80 mV p-p	3000	80
AM30K-2412SH30IZ	18-36	12	2.5	120 mV p-p	3000	84
AM30K-2415SH30IZ	18-36	15	2	150 mV p-p	3000	83
AM30K-2424SH30IZ	18-36	24	1.2	240 mV p-p	3000	83
AM30K-4803SH30IZ	36-75	3.3	6	80 mV p-p	3000	77
AM30K-4805SH30IZ	36-75	5	5	80 mV p-p	3000	82
AM30K-4812SH30IZ	36-75	12	2.5	120 mV p-p	3000	84
AM30K-4815SH30IZ	36-75	15	2	150 mV p-p	3000	85
AM30K-4824SH30IZ	36-75	24	1.2	240 mV p-p	3000	85

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Ripple & Noise Typ.	Isolation (VDC)	Efficiency (%)
AM30K-1205DIZ	9-18	±5	±2.5	80 mV p-p	1500	83
AM30K-1212DIZ	9-18	±12	±1.25	120 mV p-p	1500	86
AM30K-1215DIZ	9-18	±15	±1	150 mV p-p	1500	87
AM30K-2405DIZ	18-36	±5	±2.5	80 mV p-p	1500	86
AM30K-2412DIZ	18-36	±12	±1.25	120 mV p-p	1500	88
AM30K-2415DIZ	18-36	±15	±1	150 mV p-p	1500	86
AM30K-4805DIZ	36-75	±5	±2.5	80 mV p-p	1500	86

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Ripple & Noise Typ.	Isolation (VDC)	Efficiency (%)
AM30K-4812DIZ	36-75	±12	±1.25	120 mV p-p	1500	88
AM30K-4815DIZ	36-75	±15	±1	150 mV p-p	1500	88
AM30K-1205DH30IZ	9-18	±5	±3	80 mV p-p	3000	81
AM30K-1212DH30IZ	9-18	±12	±1.25	120 mV p-p	3000	83
AM30K-1215DH30IZ	9-18	±15	±1	150 mV p-p	3000	83
AM30K-2405DH30IZ	18-36	±5	±3	80 mV p-p	3000	83
AM30K-2412DH30IZ	18-36	±12	±1.25	120 mV p-p	3000	85
AM30K-2415DH30IZ	18-36	±15	±1	150 mV p-p	3000	85
AM30K-4805DH30IZ	36-75	±5	±3	80 mV p-p	3000	84
AM30K-4812DH30IZ	36-75	±12	±1.25	120 mV p-p	3000	85
AM30K-4815DH30IZ	36-75	±15	±1	150 mV p-p	3000	85

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	12	9-18		VDC
	24	18-36		
	48	36-75		
Filter	π (Pi) Network			
Recommended input fuse (Slow Blow)	12 Vin	8A/250V		
	24 Vin	4A/250V		
	48 Vin	2A/250V		
Remote On/Off Control	On	3.5 to 12VDC or open circuit		
	Off	0 to 1.2VDC or short circuit between pin 2 and 4; typical idle current 3mA		
Absolute Maximum Rating	12 Vin		20	VDC
	24 Vin		40	
	48 Vin		80	
Permissible absolute maximum duration			2	hours

Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	3 sec	1500 & 3000		VDC
Resistance		> 1000		MOhm

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Short Circuit protection	Continuous			
Short Circuit restart	Auto recovery			
Over load protection	Auto recovery works at 110% of rated output			
Over voltage protection	Zener diode clamp protection			
Line voltage regulation (Single)	HL-LL	±0.5		%
Line voltage regulation (Dual)	HL-LL	±0.5		%
Load voltage regulation (Single)	25-100%	±0.5		%
Load voltage regulation (Dual)	25-100%	±2		%
Temperature coefficient		±0.05		%/°C
Voltage adjustment range		±10		%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	250		KHz
Operating temperature	With derating above 70°C	-40 to +85		°C
Storage temperature		-55 to +105		°C
Maximum case temperature			95	°C
Thermal shutdown		+105	+115	°C

General Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Cooling	Free air convection			
Humidity			95	%
Case material	Nickel coated copper with non conductive base. Six Sided Shielded			
Weight		50		g
Dimensions (L x W x H)	Tolerance ±0.5mm	2.00 x 1.60 x 0.40 inches	50.80 x 40.60x 10.16 mm	
MTBF	> 550 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Soldering Temperature	1.5 mm from case for 10 sec		260	°C

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.

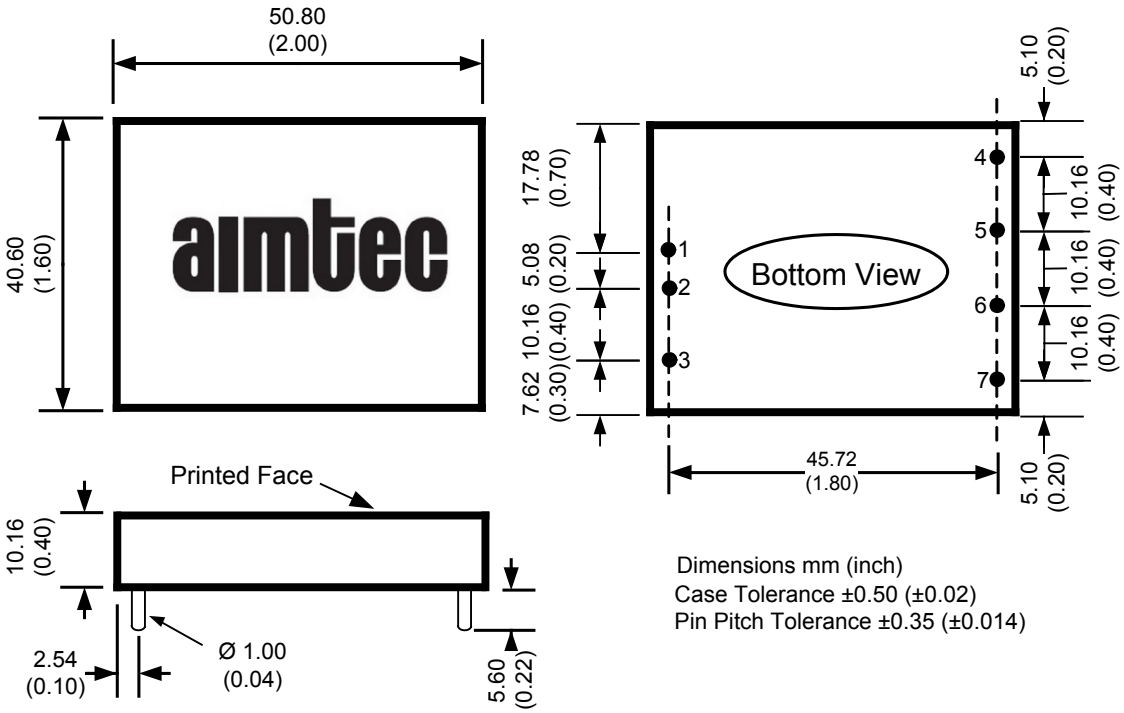
Safety Specifications

Parameters	
Agency approvals	CE
Standards	EN 55022, EN 55024 class A

Pin Out Specifications

Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	On/OFF Control	On/OFF Control
4	No pin	+V Output
5	+V Output	Common
6	-V Output	-V Output
7	Trim	Trim

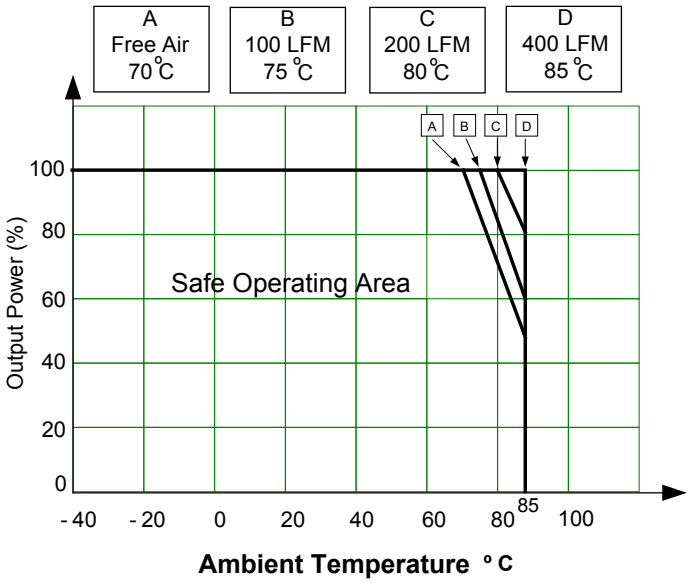
Dimensions



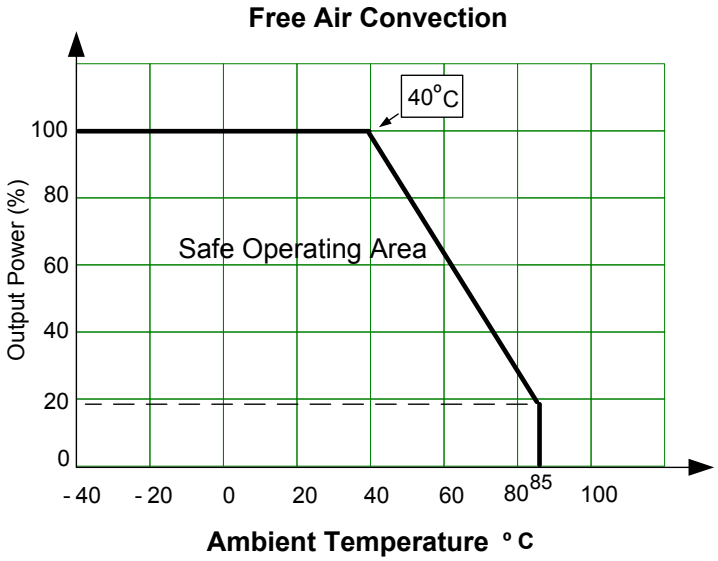
Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Pitch Tolerance ±0.35 (±0.014)

Derating

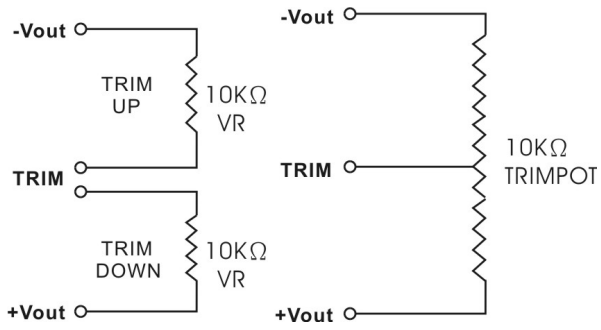
1500VDC Isolation



3000VDC Isolation

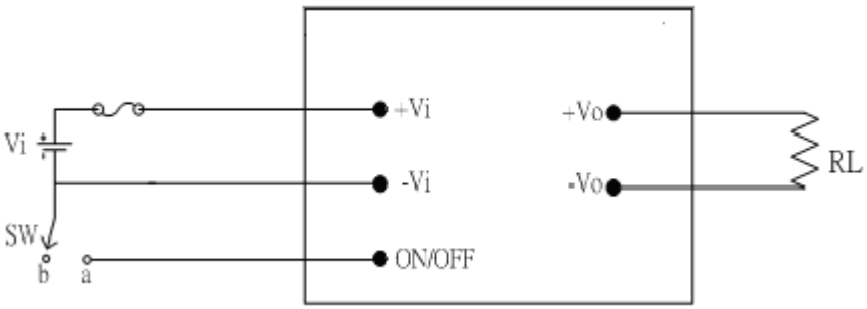


Trimming

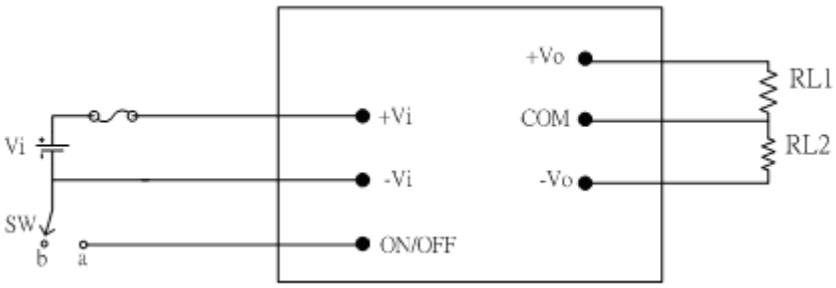


Control ON/OFF pin connection example

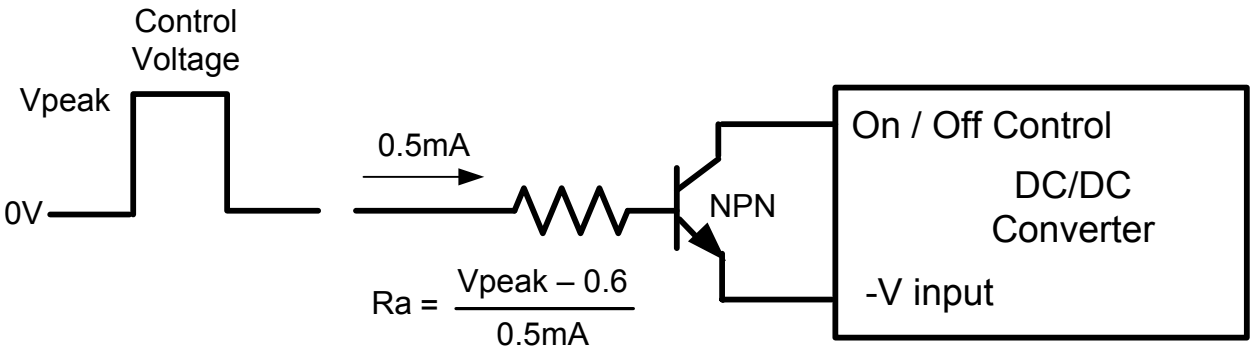
Single Output



Dual Output



Digital Control Circuit:



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