aimtec
Your Power Partner

Series AM1LR-NZ

1 Watt | DC-DC Converter



FEATURES:

- Regulated output
- Continuous short circuit protection
- Efficiency up to 75%
- Operating temperature: -40ºC to +85 ºC
- Isolation Voltage of 1500 & 3000VDC
- Small SMD package
- Universal industry pinout

RoHS

Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Isolation (VDC)	Max Capacitive Load (µF)	Efficiency (%)
AM1LR-0505S-NZ	4.75-5.25	5	200	1500	220	72
AM1LR-1205S-NZ	11.4-12.6	5	200	1500	220	71
AM1LR-1212S-NZ	11.4-12.6	12	84	1500	220	73
AM1LR-1215S-NZ	11.6-12.6	15	67	1500	220	75
AM1LR-2405S-NZ	22.8-25.2	5	200	1500	220	73
AM1LR-2412S-NZ	22.8-25.2	12	84	1500	220	73
AM1LR-2415S-NZ	22.8-25.2	15	67	1500	220	73
AM1LR-1205SH30-NZ	11.4-12.6	5	200	3000	220	71
AM1LR-1212SH30-NZ	11.4-12.6	12	83	3000	220	73
AM1LR-2405SH30-NZ	22.8-25.2	5	200	3000	220	73

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.

NOTE2: AM1LR-1212S-NZ and AM1LR-1215S-NZ will be discontinued (EOL) by December 30, 2021; for new designs, please refer to AM1LR-JZ series.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage Range	5 12 24	4.75-5.25 11.4-12.6 22.8-25.2		VDC
Absolute Max Input Voltage (1 sec max)	5 Vin 12 Vin 24 Vin		9 18 30	VDC
Filter		Capacitor		
Quiescent Current	5 12 24	15 10 7		mA
Input Reflected Ripple current		15		mA

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O Voltage	60 sec, <1mA		1500 & 3000	VDC
Resistance	500VDC	>1000		MOhm
Capacitance		20		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage Accuracy	100% load (see tolerance chart)		±3	%
Short Circuit Protection		Continuous		
Short Circuit Restart		Auto-Recovery		
Line Voltage Regulation	For ±1% of Vin		±0.25	% of Vin
Load Voltage Regulation	(10% - 100% Load) 3.3V (10% - 100% Load) Other outputs		±3 ±2	%
Temperature Coefficient	100% load		±0.03	%/ºC
Ripple & Noise		50		mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	100	300	KHz
Operating temperature	With derating above +71	-40 to +85		°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Storage Humidity	Non Condensing		95	% RH
Case material	Epoxy resin (UL94-V0)			
Weight		2		g
Dimensions (L x W x H)	0.60 x 0.44 x 0.28inches 15.24 x 11.20 x 7.25mm			
MTBF	>3,500,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case for 10 sec		300	°C
Maximum case temperature			130	°C

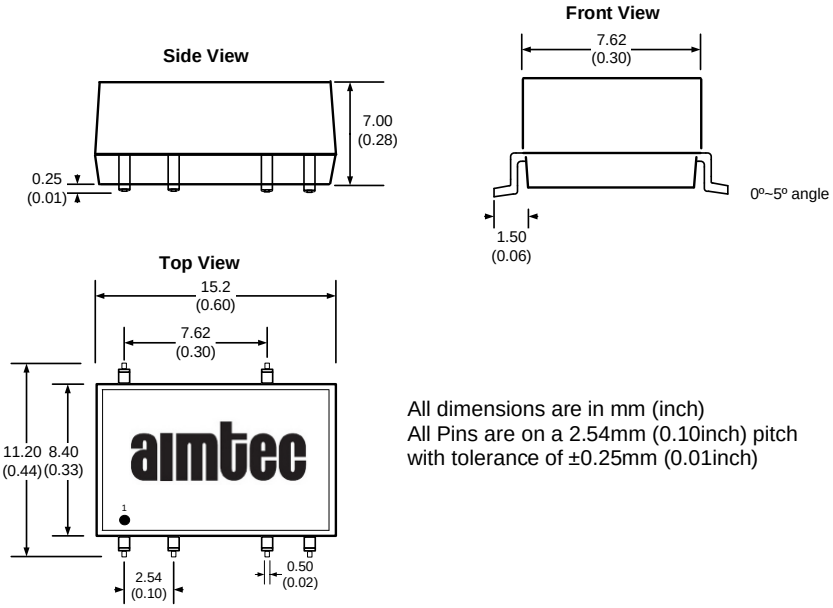
Safety Specifications

Parameters	
Standards	CISPR32/EN55032 Class B with the EMI recommended circuit
	IEC/EN61000-4-2, Contact ±6KV, Criteria B

Pin Out Specifications

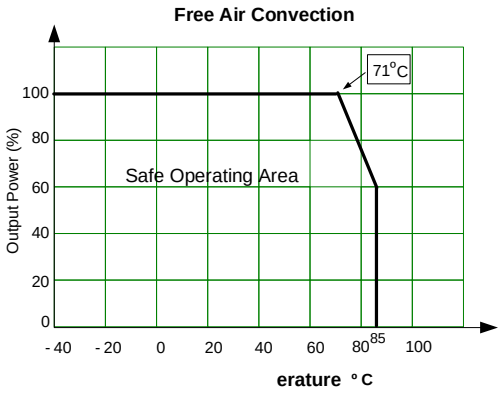
Pin	Single
1	-V Input
2	+V Input
3	No Pin
4	-V Output
5	-V Output
6	No Pin
7	+V Output
8	No Pin
9	No Pin
10	N.C.

Dimensions

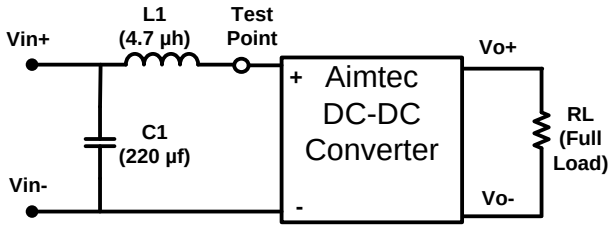


All dimensions are in mm (inch)
All Pins are on a 2.54mm (0.10inch) pitch with tolerance of ±0.25mm (0.01inch)

Derating

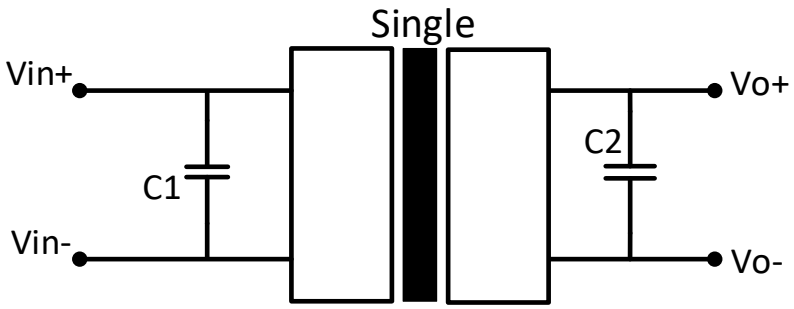


Input Reflected Ripple Current Test Circuit



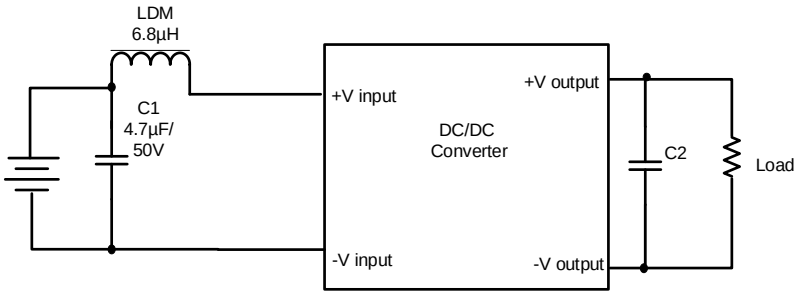
* Tested at full load, and nominal input

Typical Application Circuits



Vin (VDC)	C1 (µF)	Vout (VDC)	C2 (µF)
5	4.7	3.3 & 5	10
12	2.2	12	2.2
24	1	15	1

EMI Recommended Circuit (Class B)



Vout (VDC)	C2 (µF)
3.3 & 5	10
12	2.2
15	1

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4**. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.**5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.