

Series AM2LV-NZ

2 Watt | DC-DC Converter



FEATURES:

- SMD Package
- Wide (2:1) Input Range
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Operating Temperature: -40°C To +85°C
- Regulated Single / Dual Output
- MTBF >1,000,000 Hours
- RoHS Compliant



Models Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Efficiency (%)
AM2LV-1203S-NZ	9-18	3.3	500	1500	70
AM2LV-1205S-NZ	9-18	5	400	1500	74
AM2LV-1212S-NZ	9-18	12	167	1500	78
AM2LV-2403S-NZ	18-36	3.3	500	1500	72
AM2LV-2405S-NZ	18-36	5	400	1500	76
AM2LV-2412S-NZ	18-36	12	167	1500	80

Models Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Efficiency (%)
AM2LV-1209D-NZ	9-18	±9	±111	1500	76
AM2LV-1212D-NZ	9-18	±12	±83	1500	78
AM2LV-1215D-NZ	9-18	±15	±67	1500	80
AM2LV-2405D-NZ	18-36	±5	±200	1500	74
AM2LV-2409D-NZ	18-36	±9	±111	1500	76
AM2LV-2412D-NZ	18-36	±12	±83	1500	78
AM2LV-2415D-NZ	18-36	±15	±67	1500	80

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

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	12 24	9-18 18-36		VDC
Absolute Maximum Rating	12 24		22 40	VDC
Peak Input Voltage time			100	ms

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500	VDC
Resistance	At 500 VDC	1000		MOhm
Capacitance	Input to Output	85		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±5		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Recovery			
Line voltage regulation (Single)	From Low in to High In	±0.5		%
Load voltage regulation (Single)	From 10% to 100% load	±1		%
Load voltage regulation (Dual)	From 10% to 100% load Each output loaded within 5% of each other	±5		%
Temperature coefficient		±0.03		%/°C

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Ripple & Noise *	20MHz Bandwidth with 10% load	75		mV p-p
Minimum Load Current**		10		% of Max

* Test Ripple & Noise by "Parallel Cable Method" as described in Application Note "Ripple and Noise Measurement of Brick & POL DC-DC Converters" available on Aimtec's website www.aimtec.com. Converters are designed to operate with a minimum load of 10%. If converter is operated with a load less than 10% the ripple will increase.

** Operation under 10% load will not damage the converter; However, not all specifications will be met.

General Specifications

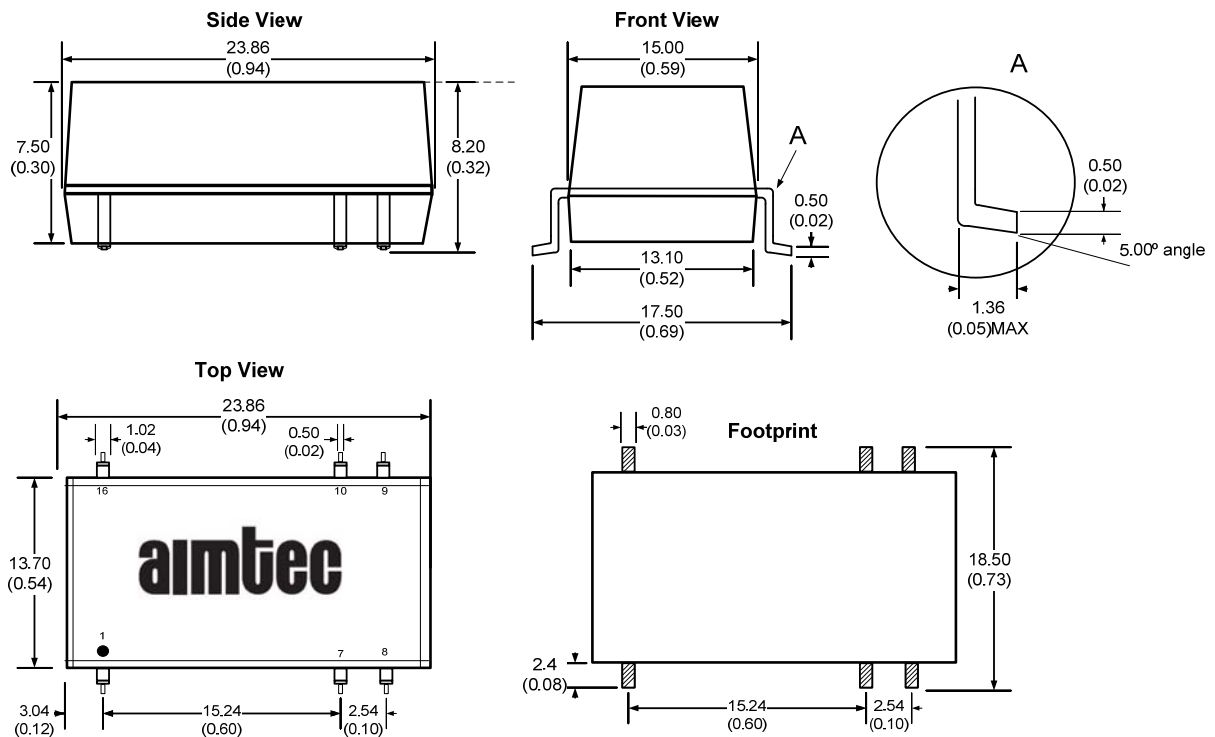
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	300		KHz
Operating temperature		-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature				°C
Derating	Above 71°	2.9		%/°C
Cooling		Free Air Convection		
Humidity			95	% RH
Case material		Plastic (UL94-V0)		
Weight		5.2		g
Dimensions (L x W x H)		0.94 x 0.54 x 0.32 inches 23.86 x 13.70 x 8.20 mm		
MTBF		>1,000,000 hours (MIL-HDBK -217F, Ground Benign, t=+25°C)		
Maximum Soldering Temperature	1.5mm from case for 10 seconds		260	°C

Pin Out Specifications

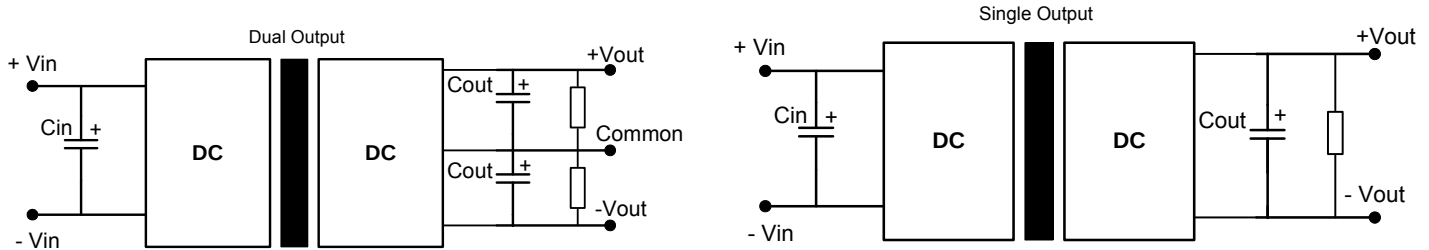
Pin	Single	Dual
1	- Vin	- Vin
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	- Vout	-Vout
16	+ Vin	+ Vin

NC – not connected

Dimensions



Recommended Filter Circuit



All the AM2LV-Z Series have been tested with the above recommended test circuit. This series should be tested under load.

If it is necessary to further decrease the input/output ripple, the value of the filter capacitor can be increased; a capacitor with a low ESR should be used. Excessive filter capacitance can cause start up problems with the converter.

In general, the recommended capacitance values are:

C_{in} : 12V input 100 μ F, 24V input 10 μ F~47 μ F

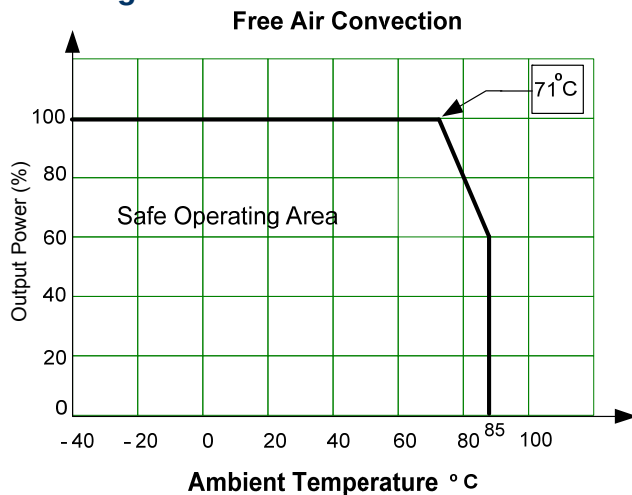
C_{out} : 10 μ F/100mA

Refer to table below for maximum capacitor values:

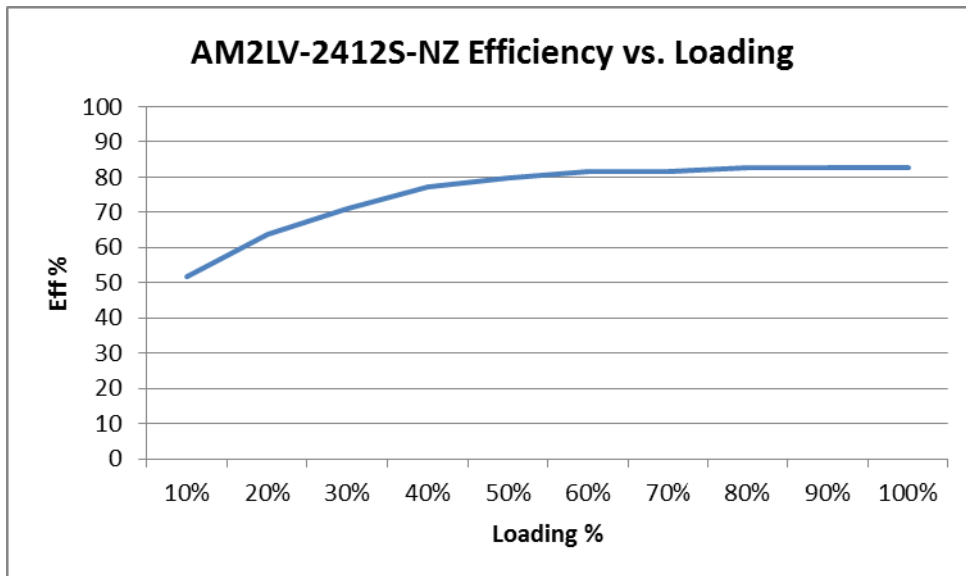
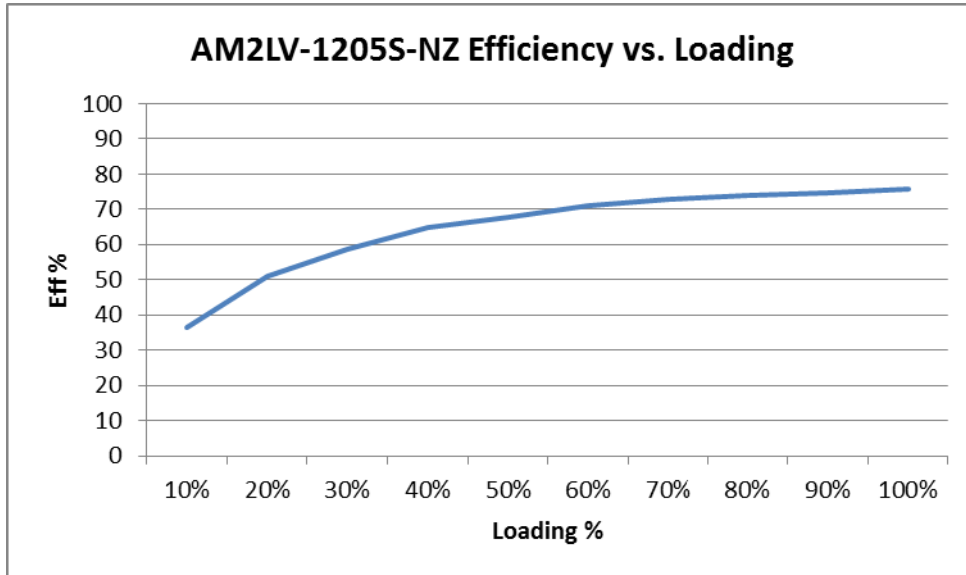
External Capacitor Value

Single Output Vout (VDC)	Cout (μ F)	Dual Output Vout (VDC)	Cout (μ F)
3.3	2200	± 5	± 680
5	1000	± 9	± 470
9	680	± 12	± 330
12	470	± 15	± 220
15	330		

Derating



Typical Efficiency Chart Examples



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