aimtec
Your Power Partner

Series AM1/4LS-NZ

0.25 Watt | DC-DC Converter

FEATURES:

- SMD Package
- I/O Isolation 1500 & 3000 VDC
- Ultra Low Ripple and Noise
- Industry Standard Pinout
- Single Output Models
- Operating temperature -40ºC to + 105ºC
- Efficiency up to 79%
- Continuous Short Circuit Protection

RoHS

Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max | Min (mA)		Input Current Full | No Load (mA)		Isolation (VDC)	Max Capacitive Load(uF)	Efficiency (%)
AM1/4LS-0305S-NZ‡	2.97-3.63	5	50	5	104	20	1500	220	71
AM1/4LS-0503S-NZ	4.5-5.5	3.3	76	8	68	15	1500	220	72
AM1/4LS-0505S-NZ	4.5-5.5	5	50	5	68	15	1500	220	73
AM1/4LS-1205S-NZ	10.8-13.2	5	50	5	27	10	1500	220	77
AM1/4LS-1209S-NZ	10.8-13.2	9	28	3	27	10	1500	220	73
AM1/4LS-1212S-NZ	10.8-13.2	12	21	2	27	10	1500	220	77
AM1/4LS-2405S-NZ	21.6-26.4	5	50	5	15	8	1500	220	62
AM1/4LS-0505SH30-NZ	4.5-5.5	5	50	5	68	15	3000	220	75
AM1/4LS-1205SH30-NZ	10.8-13.2	5	50	5	27	10	3000	220	73

‡ With Momentary short circuit protection of 1 second

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.

NOTE: AM1/4LS-1209S-NZ and AM1/4LS-0505SH30-NZ will be discontinued (EOL) by December 30, 2021; for new designs, please refer to AM1LS-JZ series.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	3.3 5 12 24	2.97-3.63 4.5-5.5 10.8-13.2 21.6-26.4		VDC
Filter	Capacitor			
Absolute Maximum Rating	3.3 Vin 5 Vin 12 Vin 24Vin	-0.7-5 -0.7-9 -0.7-18 -0.7-30		VDC
Peak Input Voltage time		1		s
Input Reflected Ripple Current	3.3 & 5V Input 12 & 24V Input	20 5		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Maximum	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)	±2.5		%
Short Circuit protection	Continuous, unless marked with ‡			
Short circuit restart	Auto-Recovery			
Line voltage regulation	For ±1% of Vin, 3.3Vout		±1.5	% of Vin
	For ±1% of Vin, other models		±1.2	% of Vin
Load voltage regulation	10% - 100% load, 3.3Vout	15	20	%
	10% - 100% load, 5 / 9Vout	12	15	%
	10% - 100% load, 12Vout	7	10	%

Temperature coefficient	100% load		±0.03	%/°C
Ripple & Noise	20MHz Bandwidth, 1.5KV isolation models	20	120	mV p-p
	20MHz Bandwidth, 3KV isolation models	20	50	mV p-p

General Specifications

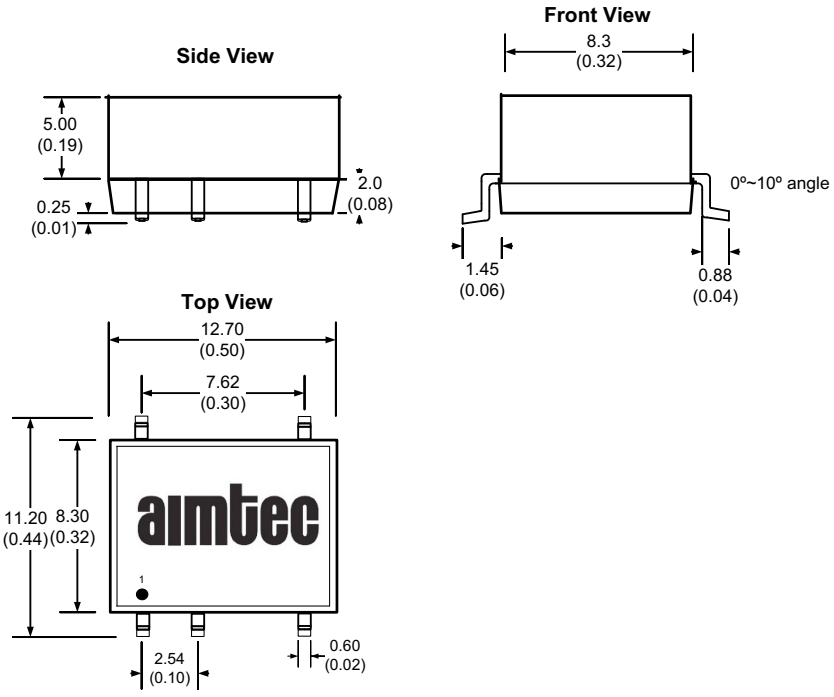
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	100		KHz
Operating temperature	With derating above +100	-40 to +105		°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity	Non Condensing		95	% RH
Case material	Epoxy resin (UL94-V0)			
Weight		1.5		g
Dimensions (L x W x H)	0.50 x 0.44 x 0.28 inches 12.70 x 11.20 x 7.25 mm			
MTBF	>3500K hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)hours			
Maximum soldering temperature	1.5mm from case for 10 sec		300	°C
Maximum case temperature			115	°C

Safety Specifications

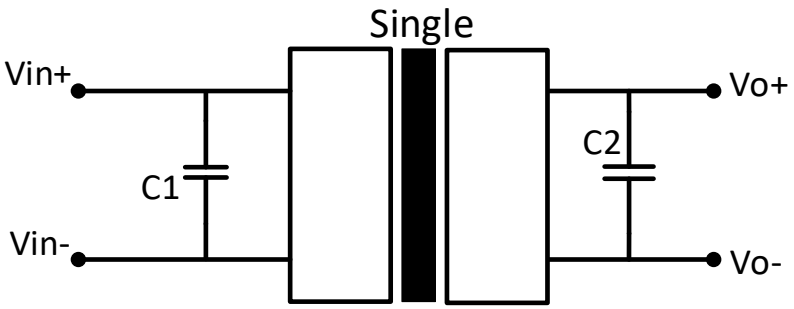
Parameters	
Agency Approval	
Standards	EN55032 Class B (see recommended circuit)
	IEC 61000-4-2, Contact ±8kV, Criteria B

Pin Out Specifications and Dimensions

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

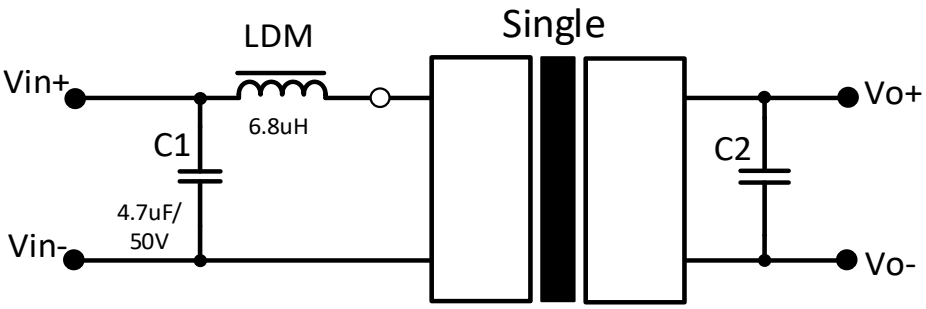


Typical Application Circuits

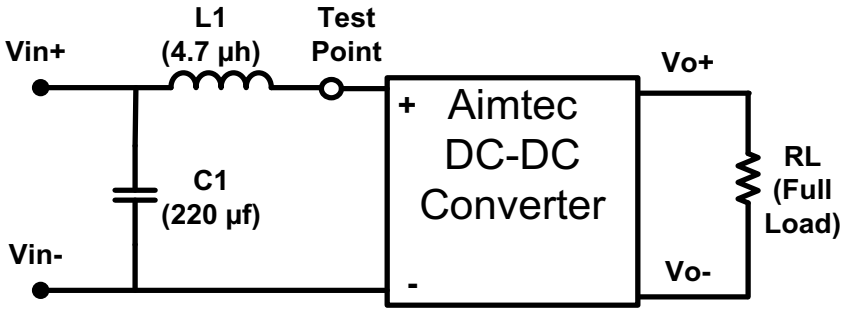


Vin (VDC)	C1 (µF)	Vout (VDC)	C2 (µF)
3.3/5	4.7	3.3 & 5	10
12	2.2	12	2.2
24	1	15	1

EMI Recommended Circuit (Class B)

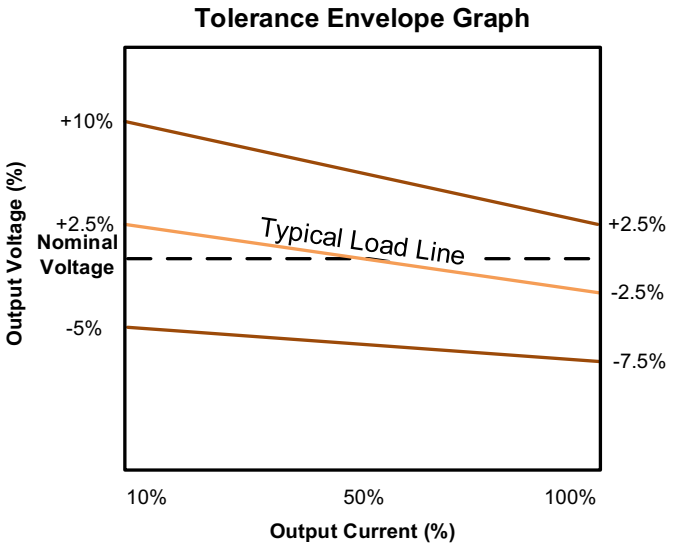


Input Reflected Ripple Current Test Circuit

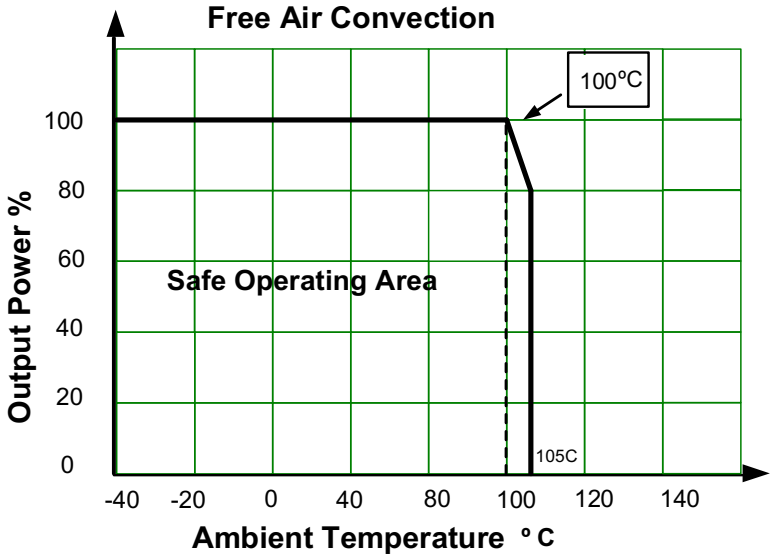


* Tested at full load, and nominal input

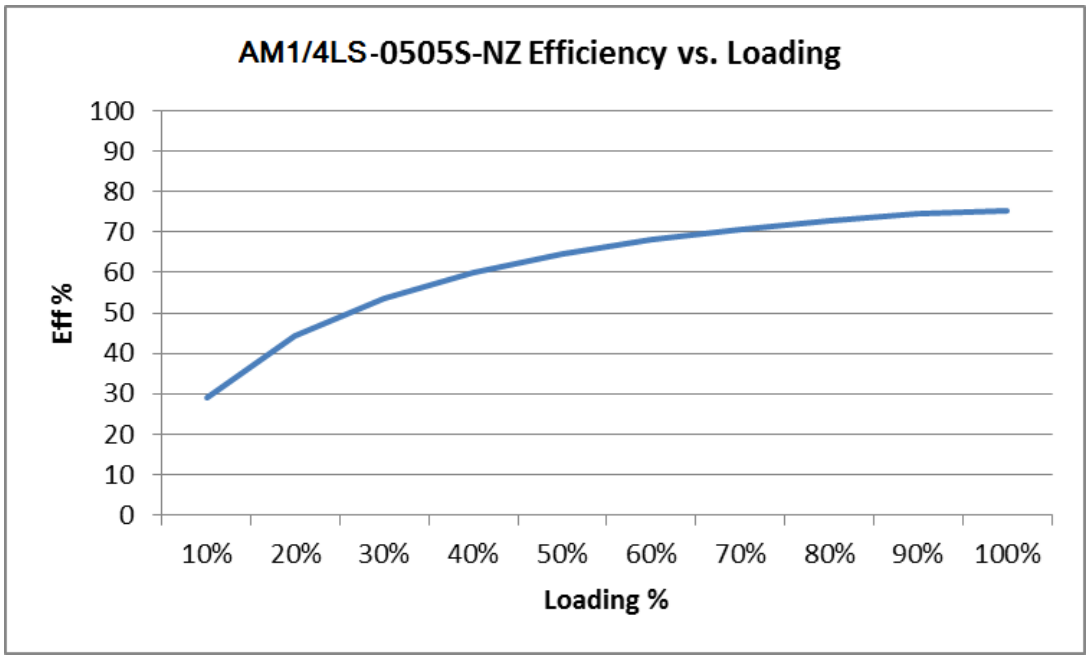
Load Accuracy Tolerance Graph

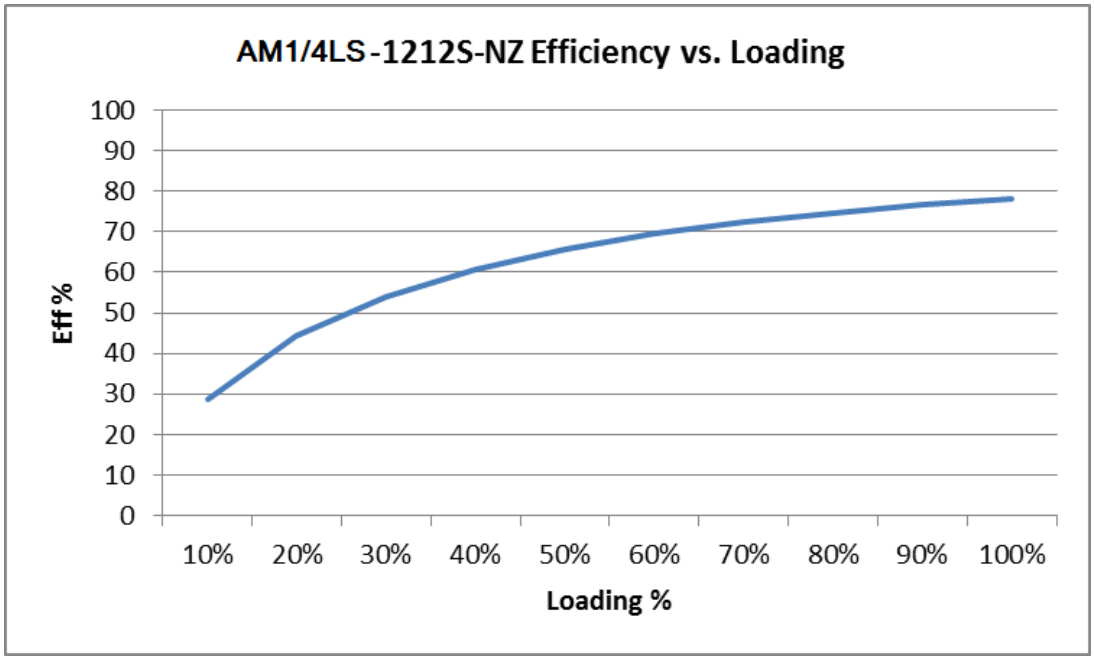


Derating



Typical Efficiency vs. Loading





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