aimtec
Your Power Partner

Series AM1LT-NZ
1 Watt | DC-DC Converter



FEATURES:

- Low Profile SMD
- Continuous Short circuit protection
- Pin-out compatible with DCP01 Series
- Operating Temperature: -40°C to +105°C
- 3000 VDC Isolation regulated model
- 1500 VDC Isolation unregulated models

RoHS

Models
Single output

Model	Input Voltage(V)	Output Voltage (V)	Output Current max(mA)	Maximum Capacitive Load (µF)	Isolation (VDC)	Efficiency (%)
AM1LT-0505S-NZ	4.5-5.5	5	200	220	1500	76
AM1LT-0512S-NZ *	4.5-5.5	12	83	220	1500	77
AM1LT-0515S-NZ *	4.5-5.5	15	67	220	1500	76
AM1LT-1212S-NZ *	10.8-13.2	12	83	220	1500	76
AM1LT-0505SH30-NZ	4.75 -5.25	5	200	220	3000	70
AM1LT-1205SH30-NZ	11.4-12.6	5	200	220	3000	72

* Models will be discontinued by December 31st, 2017 (EOL date). For new designs, please see new generation models of **AM1LS-NZ** series.

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

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5 12	4.5-5.5 & 4.75-5.25 10.8-13.2 & 11.4-12.6		VDC
Full load Input current	5Vin, 5Vout, 1500V Isolation 5Vin, 5Vout, 3000V Isolation 5Vin, 12 & 15Vout 12Vin	250 285 271 115		mA
No load Input current	5Vin, 5Vout 5Vin, 12 & 15Vout 12Vin	25 30 15		mA
Absolute Max Input	5 12		-0.7 – 9 -0.7 - 18	VDC
Filter	Capacitor			
Input reflected ripple current	5Vin, 5Vout, 1500V Isolation	15		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 Sec, 1mA		1500 & 3000	VDC
Resistance	500Vdc	1000		MOhm
Capacitor	5Vin, 5Vout, I/O, 100KHz/0.1V Others, I/O, 100KHz/0.1V	20 25		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	1500V Isolation models	See tolerance envelope graph		
	3000V Isolation models	±3		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Recovery			
Line voltage regulation	For 1500V Isolation models & Vin change of 1%	±1.2		% of Vin
	For 3000V Isolation models & Vin change of 5%	±0.25		

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Load voltage regulation	10% to 100% load for 1500V Isolation models		±15	%
	10% to 100% load for 3000V Isolation models		±1	
Temperature coefficient	Nominal input,100% full load	0.03		%/ºC
Ripple & Noise	20MHz Bandwidth	60	100	mVp-p
Minimum Load Current		10		% of Max

NOTE: It is not recommended to have the outputs connected in parallel.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	5Vin, 5Vout, 100% load Others, 100% load	100 100	 300	KHz
Operating temperature	For 1500V isolation no derating, see derating curve For 3000V Isolation derating above 71°C	-40 to + 85		ºC
Storage temperature	-55 to +125			ºC
Maximum case temperature			100	ºC
Cooling	Free Air Convection			
Humidity			95	% RH
Case material	Epoxy Resin(UL94-V0)			
Weight	1.4			g
Dimensions (L x W x H)	0.77 x 0.42 x 0.20 inches, 19.50 x 10.53 x 5.10 mm			
MTBF	>1,500,000 hours (MIL-HDBK -217F, Ground Benign, t=+25ºC) for 1500V Isolation models			
	>3,500,000 hours (MIL-HDBK -217F, Ground Benign, t=+25ºC) for 3000V Isolation models			
Maximum Soldering Temperature*	1.5mm from case for 10 seconds		260	ºC

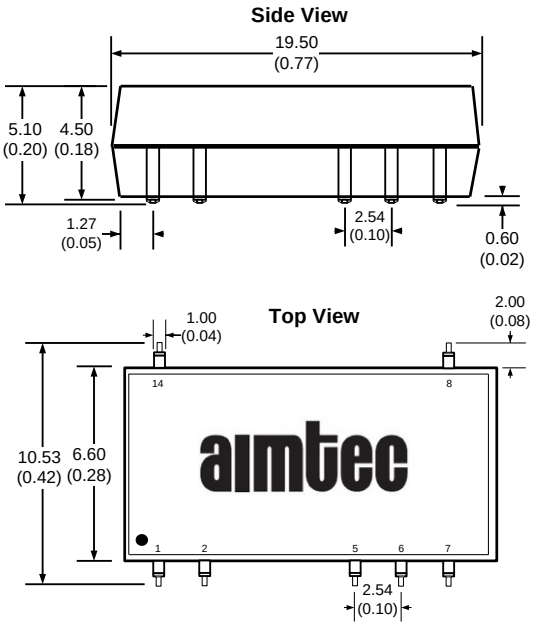
*** Manual soldering**

Pin Out Specifications

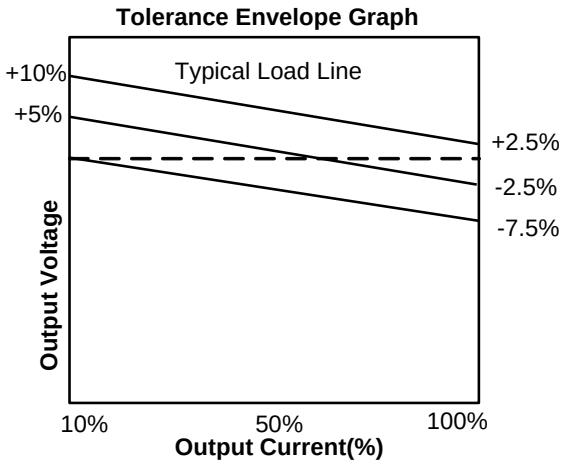
Pin	Single
1	+Vin
2	-Vin
5	-Vout
6	+Vout
7	NC
8	NC
14	NC

NC: not connected

Dimensions

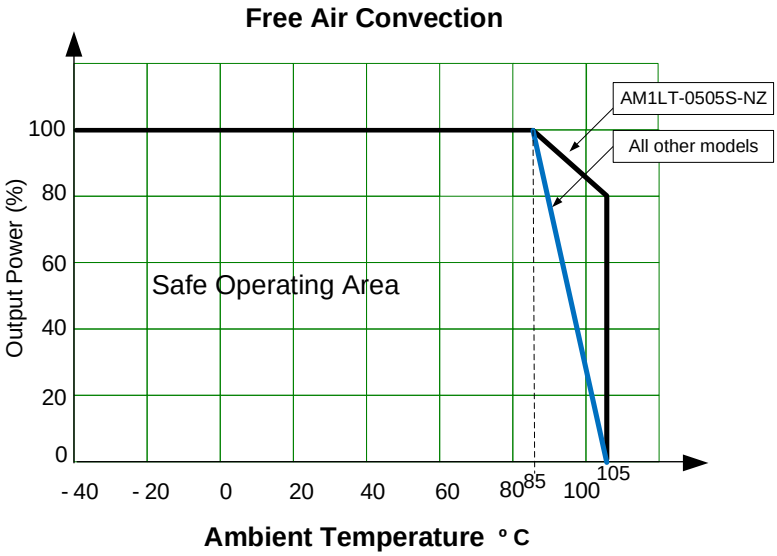


Typical Characteristics

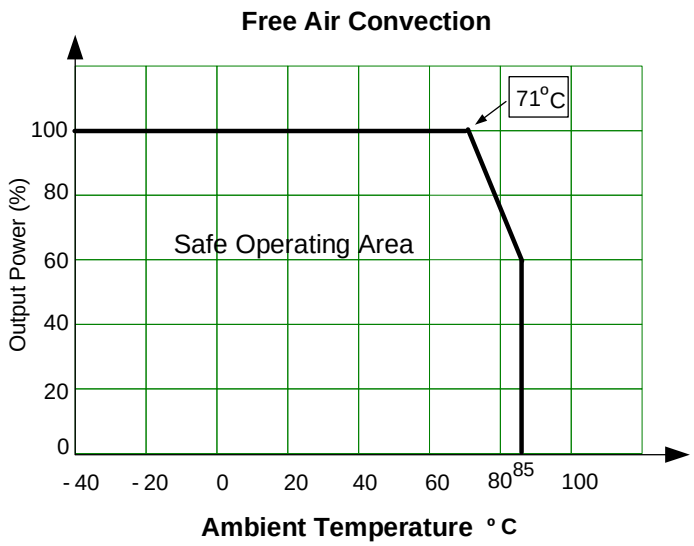


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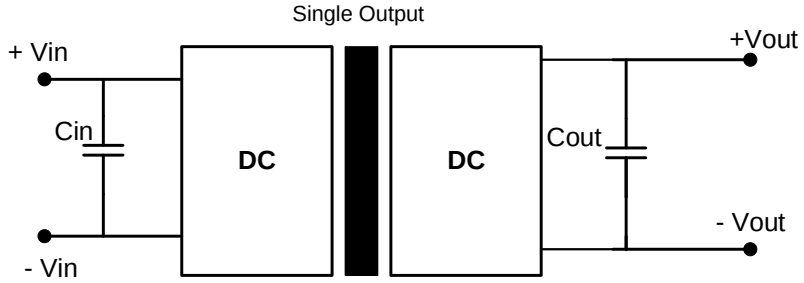
Derating for 1500VDC Isolated models



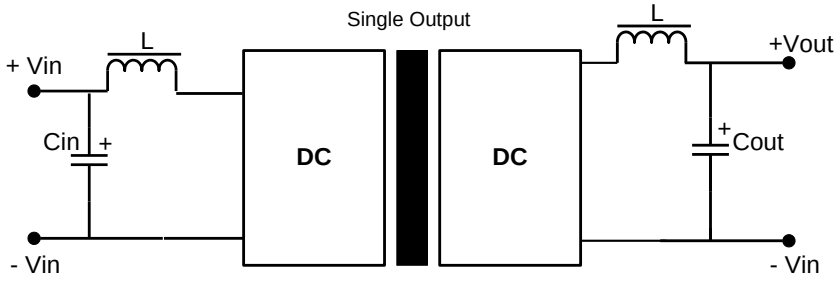
Derating for 3000VDC Isolated models



Typical application circuit for 1500VDC Isolated models



Typical application circuit for 3000VDC Isolated models

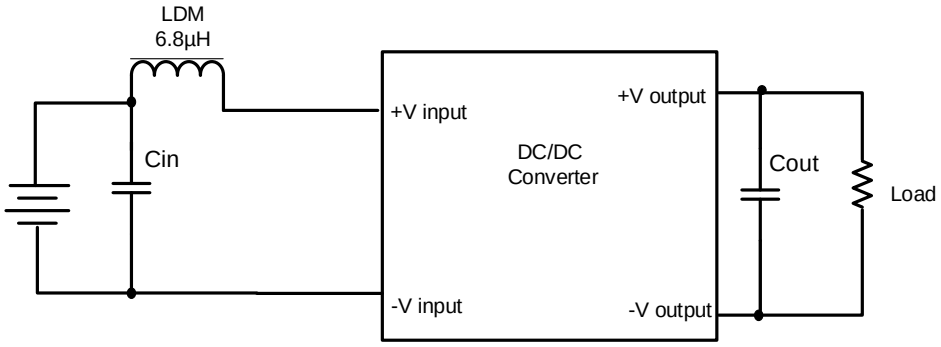


It is not recommended to connect any external capacitor in the application field when output loading is less than 0.5 watt.

Vin (VDC)	Cin (uF)	Vout (VDC)	Cout (uF)
5	4.7	5	10
12	2.2	12	2.2
		15	1

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EMI Recommended Circuit (Class B) for 1500VDC Isolated models



NOTE: Cin and Cout values are the same as referenced in the Application Circuit.

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