

Series AM1SS-(J)NZ

1 Watt | DC-DC Converter



FEATURES:

- Unregulated
- 4 Pin SIP Package
- Low ripple and noise
- High efficiency up to 82%
- Operating temperature -40°C to +105°C
- Input / Output isolation 1500 VDC
- Pin compatible with multiple manufacturers
- Continuous Short Circuit Protection

Models Single output



Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max. Capacitive Load (μF)	Efficiency (%)
AM1SS-0303S-NZ	2.97-3.63	3.3	303	1500	220	72
AM1SS-0305S-NZ	2.97-3.63	5	200	1500	220	76
AM1SS-0312S-NZ	2.97-3.63	12	84	1500	220	80
AM1SS-0503S-NZ	4.5-5.5	3.3	303	1500	220	72
AM1SS-0505S-NZ	4.5-5.5	5	200	1500	220	80
AM1SS-0505S-JZ	4.5-5.5	5	200	1500	2400	82
AM1SS-0509S-NZ	4.5-5.5	9	111	1500	220	80
AM1SS-0512S-NZ	4.5-5.5	12	84	1500	220	81
AM1SS-0515S-NZ	4.5-5.5	15	67	1500	220	81
AM1SS-0524S-NZ ‡	4.5-5.5	24	42	1500	220	81
AM1SS-1203S-NZ	10.8-13.2	3.3	303	1500	220	72
AM1SS-1205S-NZ	10.8-13.2	5	200	1500	220	80
AM1SS-1209S-NZ	10.8-13.2	9	110	1500	220	80
AM1SS-1212S-NZ	10.8-13.2	12	83	1500	220	81
AM1SS-1215S-NZ	10.8-13.2	15	67	1500	220	80
AM1SS-1224S-NZ	10.8-13.2	24	42	1500	220	80
AM1SS-1515S-NZ	13.5-16.5	15	67	1500	220	81
AM1SS-2403S-NZ	21.6-26.4	3.3	303	1500	220	72
AM1SS-2405S-NZ	21.6-26.4	5	200	1500	220	80
AM1SS-2409S-NZ	21.6-26.4	9	110	1500	220	80
AM1SS-2412S-NZ	21.6-26.4	12	83	1500	220	81
AM1SS-2415S-NZ	21.6-26.4	15	67	1500	220	82
AM1SS-2424S-NZ	21.6-26.4	24	42	1500	220	82

‡ With Momentary short circuit protection of 1 second

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	3.3	2.97-3.63		VDC
	5	4.5-5.5		
	12	10.8-13.2		
	15	13.5-16.5		
	24	21.6-26.4		
Absolute Max Rating (1 sec. max.)	3.3		5	VDC
	5		9	
	12		18	
	15		21	
Filter			30	
AM1SS-0505S-JZ input no load current		5	10	mA

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500	VDC
Resistance		> 1000		MOhm

Capacitance		20		pF
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Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See tolerance graph	±5		%
Short Circuit protection		Continuous, unless marked with ‡		
Line voltage regulation	For 1.0% Vin, 3.3V Model For 1.0% Vin, Other Model	±1.5 ±1.2		% of Vin
Load voltage regulation	Load 10 – 100%	12		%
Load voltage regulation (for part number with suffix JZ)	Load 10 – 100%	10		%
Temperature coefficient		±0.03		%/°C
Temperature coefficient (for part number with suffix JZ)		±0.02		%/°C
Ripple & Noise	At 20 MHz Bandwidth	60		mV p-p
Ripple & Noise (for part number with suffix JZ)	At 20 MHz Bandwidth	30	75	mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	100-300		KHz
Switching frequency (for part number with suffix JZ)	100% load	270		KHz
Operating temperature	Derating Above 85°C	-40 to +105		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			125	°C
Cooling	Free air convection			
Humidity	Non condensing		95	%
Soldering Lead Temperature	1.5mm from Lead, for 10 Sec		300	°C
Case material	Plastic UL94-VO			
Weight		1.2		g
Weight (part number with suffix JZ)		1.3		
Dimensions (L x H x W)		0.46 x 0.39x 0.24 inches	11.60 x 10.10 x 6.00 mm	
Dimensions (L x H x W) (for part number with suffix JZ)		0.46 x 0.4x 0.24 inches	11.60 x 10.16 x 6.00 mm	
MTBF	>3500K hrs(MIL-HDBK -217F, Ground Benign, t=+25°C)			

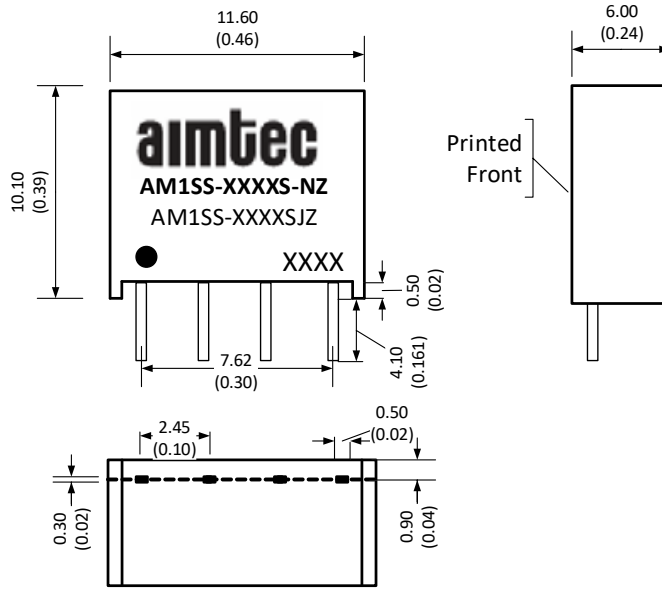
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

Parameters	
Agency approvals	cULus (without 15V input and without 3.3V output models) (Also excluding parts with suffix JZ)
Standards	UL 60950-1

Pin Out Specifications
Dimensions

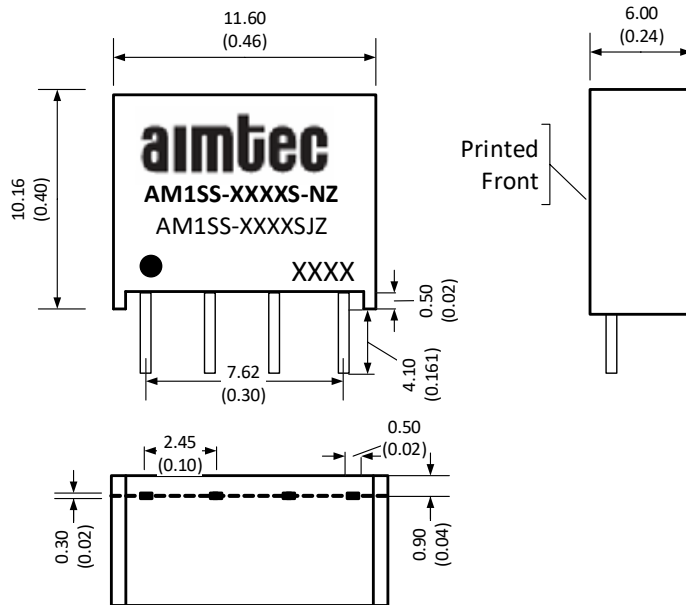
Pin	Single
1	- V Input
2	+V Input
3	-V Output
4	+V Output



Pin Out Specifications

Pin	Single
1	- V Input
2	+V Input
3	-V Output
4	+V Output

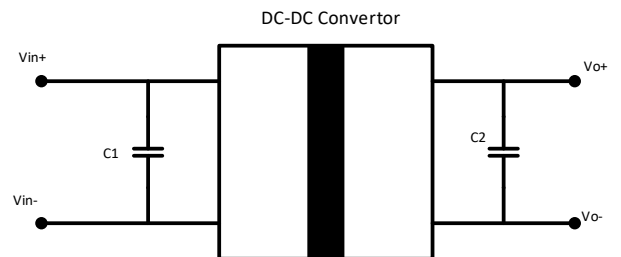
Dimensions for part number with suffix JZ



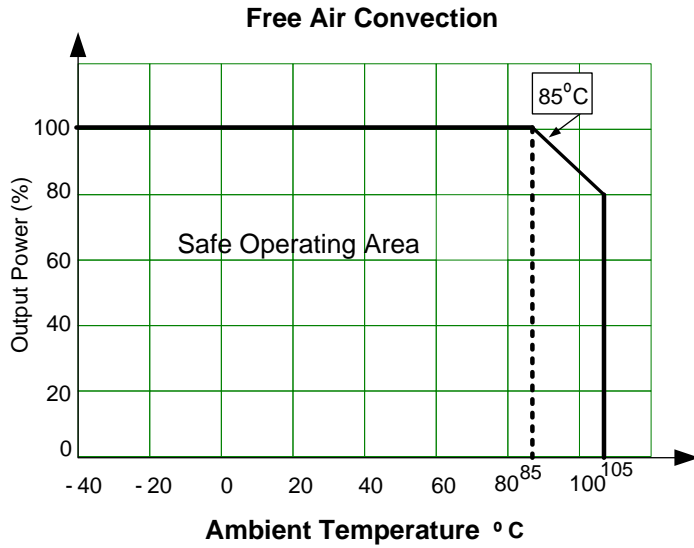
Typical Application Circuit

Capacitor selection Table

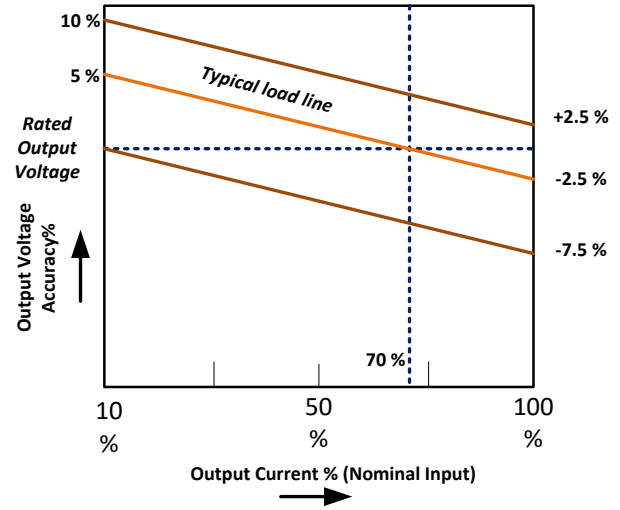
Vin	C1	Single VDC	C2
3.3	4.7 μ F	3.3 V	10 μ F
5	4.7 μ F	5V	10 μ F
	2.2 μ F	9 V	4.7 μ F
12	2.2 μ F	12 V	2.2 μ F
15	2.2 μ F	15 V	1 μ F
24	1 μ F	24V	0.47 μ F



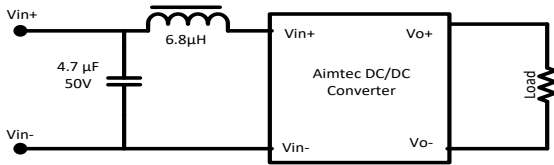
Derating



Typical Characteristics



Recommended Circuit for EMI Class B (for part numbers with suffix NZ & JZ)



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