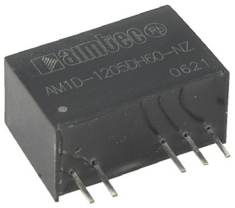
aimtec
Your Power Partner

Series AM1D-NZ

1 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- 7 pin SIP package
- High efficiency up to 82%
- Low profile plastic package
- Operating temperature -40°C to + 85°C or -40°C to + 105°C on 6000V models
- 1 sec short circuit protection or continuous or continuous on 6000V models
- Pin compatible with multiple manufacturers

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (Ma)	Isolation (VDC)	Efficiency (%)
AM1D-0505S-NZ	4.5-5.5	5	200	1000	72
AM1D-0509S-NZ	4.5-5.5	9	110	1000	74
AM1D-0512S-NZ	4.5-5.5	12	83	1000	77
AM1D-0515S-NZ	4.5-5.5	15	70	1000	79
AM1D-1205S-NZ	10.8-13.2	5	200	1000	73
AM1D-1209S-NZ	10.8-13.2	9	110	1000	75
AM1D-1212S-NZ	10.8-13.2	12	83	1000	79
AM1D-1215S-NZ	10.8-13.2	15	70	1000	80
AM1D-1505S-NZ	13.5-16.5	5	200	1000	72
AM1D-1512S-NZ	13.5-16.5	12	83	1000	74
AM1D-1515S-NZ	13.5-16.5	15	70	1000	75
AM1D-2405S-NZ	21.6-26.4	5	200	1000	74
AM1D-2409S-NZ	21.6-26.4	9	110	1000	76
AM1D-2412S-NZ	21.6-26.4	12	83	1000	80
AM1D-2415S-NZ	21.6-26.4	15	70	1000	81
AM1D-0505SH30-NZ	4.5-5.5	5	200	3000	70
AM1D-0509SH30-NZ	4.5-5.5	9	110	3000	75
AM1D-0512SH30-NZ	4.5-5.5	12	83	3000	78
AM1D-0515SH30-NZ	4.5-5.5	15	70	3000	80
AM1D-1205SH30-NZ	10.8-13.2	5	200	3000	72
AM1D-1209SH30-NZ	10.8-13.2	9	110	3000	76
AM1D-1212SH30-NZ	10.8-13.2	12	83	3000	79
AM1D-1215SH30-NZ	10.8-13.2	15	70	3000	81
AM1D-2405SH30-NZ	21.6-26.4	5	200	3000	73
AM1D-2409SH30-NZ	21.6-26.4	9	110	3000	77
AM1D-2412SH30-NZ	21.6-26.4	12	83	3000	80
AM1D-2415SH30-NZ	21.6-26.4	15	70	3000	82
AM1D-0505SH60-NZ	4.5-5.5	5	200	6000	75
AM1D-0509SH60-NZ	4.5-5.5	9	110	6000	75
AM1D-0512SH60-NZ	4.5-5.5	12	83	6000	78
AM1D-0515SH60-NZ	4.5-5.5	15	70	6000	78
AM1D-1205SH60-NZ	10.8-13.2	5	200	6000	78
AM1D-1209SH60-NZ	10.8-13.2	9	110	6000	79
AM1D-1212SH60-NZ	10.8-13.2	12	83	6000	81
AM1D-1215SH60-NZ	10.8-13.2	15	70	6000	81

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Isolation (VDC)	Efficiency (%)
AM1D-0505D-NZ	4.5-5.5	±5	±100	1000	72
AM1D-0509D-NZ	4.5-5.5	±9	±55	1000	75
AM1D-0512D-NZ	4.5-5.5	±12	±42	1000	78
AM1D-0515D-NZ	4.5-5.5	±15	±35	1000	79

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Isolation (VDC)	Efficiency (%)
AM1D-1205D-NZ	10.8-13.2	±5	±100	1000	74
AM1D-1209D-NZ	10.8-13.2	±9	±55	1000	76
AM1D-1212D-NZ	10.8-13.2	±12	±42	1000	79
AM1D-1215D-NZ	10.8-13.2	±15	±35	1000	80
AM1D-2405D-NZ	21.6-26.4	±5	±100	1000	74
AM1D-2409D-NZ	21.6-26.4	±9	±55	1000	76
AM1D-2412D-NZ	21.6-26.4	±12	±42	1000	80
AM1D-2415D-NZ	21.6-26.4	±15	±35	1000	81
AM1D-0505DH30-NZ	4.5-5.5	±5	±100	3000	72
AM1D-0509DH30-NZ	4.5-5.5	±9	±55	3000	75
AM1D-0512DH30-NZ	4.5-5.5	±12	±42	3000	78
AM1D-0515DH30-NZ	4.5-5.5	±15	±35	3000	79
AM1D-1205DH30-NZ	10.8-13.2	±5	±100	3000	74
AM1D-1209DH30-NZ	10.8-13.2	±9	±55	3000	76
AM1D-1212DH30-NZ	10.8-13.2	±12	±42	3000	79
AM1D-1215DH30-NZ	10.8-13.2	±15	±35	3000	80
AM1D-2405DH30-NZ	21.6-26.4	±5	±100	3000	74
AM1D-2412DH30-NZ	21.6-26.4	±12	±42	3000	80
AM1D-2415DH30-NZ	21.6-26.4	±15	±35	3000	81
AM1D-0505DH60-NZ	4.5-5.5	±5	±100	6000	75
AM1D-0509DH60-NZ	4.5-5.5	±9	±55	6000	75
AM1D-0512DH60-NZ	4.5-5.5	±12	±42	6000	78
AM1D-0515DH60-NZ	4.5-5.5	±15	±35	6000	78
AM1D-1205DH60-NZ	10.8-13.2	±5	±100	6000	78
AM1D-1209DH60-NZ	10.8-13.2	±9	±55	6000	79
AM1D-1212DH60-NZ	10.8-13.2	±12	±42	6000	81
AM1D-1215DH60-NZ	10.8-13.2	±15	±35	6000	81

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5		VDC
	12	10.8-13.2		
	15	13.5-16.5		
	24	21.6-26.4		
Filter	Capacitor			

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1000, 3000 & 6000	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±5		%
Voltage balance	Dual Output	±1		%
Short Circuit protection	Momentary (1 sec.) Continuous on 6000V models			
Line voltage regulation (Single)	For 1.0% of Vin	±1.2		%
Line voltage regulation (Dual)	For 1.0% of Vin	±1.2		%
Load voltage regulation (Single)	load 10~100%	10		%
Load voltage regulation (Dual)	load 10~100%	10		%

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Temperature coefficient		±0.03		%/°C
Ripple & Noise	At 20MHz Bandwidth	75		mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load (6000V models only)	150 40		KHz
Max Case temperature			+125	°C
Operating temperature	-40 to +85 Up to +105 on 6000V models only			°C
Storage temperature	-55 to +125			°C
Derating	Not-Required			
Cooling	Free air convection			
Humidity			90	%
Case material	Non-conductive black plastic UL 94 V-0			
Weight		2		g
Dimensions (L x W x H)	1000 & 3000VDC	0.76 x 0.24 x 0.39 inch		19.5 x 6.00 x 10.00 mm
	6000VDC	0.76 x 0.39 x 0.49 inch		19.50 x 9.80 x 12.5 mm
MTBF	>1 100 000 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	
Standards	UL 60950-1: 2001
Agency approvals	cULus (for 1000, 3000 & some 6000VDC Isolated models);
	CE (for 3000VDC Isolation models and single 1000VDC Isolation models)
	NOTE: all other models not referenced above are designed to meet standard IEC 60950-1:2001

Pin Out Specifications

Pin	1000 VDC		3000, 6000 VDC	
	Single	Dual	Single	Dual
1	+ V Input	+ V Input	+ V Input	+ V Input
2	- V Input	- V Input	- V Input	- V Input
4	- V Output	- V Output	No pin	No pin
5	No pin	Common	- V Output	- V Output
6	+ V Output	+ V Output	No pin	Common
7	No pin	No pin	+ V Output	+ V Output

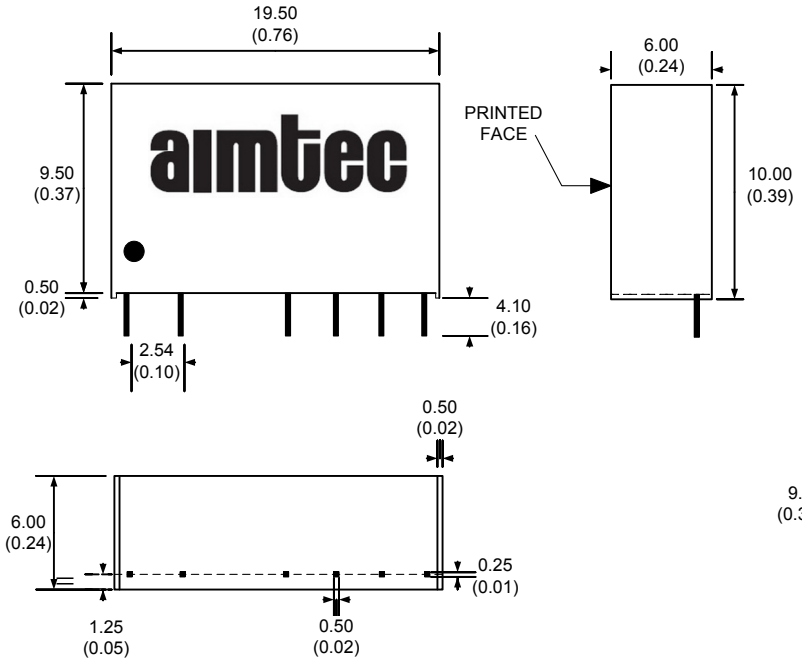
External capacitor – Single output

Vin (VDC)	External capacitor (µF)	Vout (VDC)	External capacitor (µF)
5	4.7	5	10
12	2.2	9	4.7
24	1	12	2.2
-	-	15	1

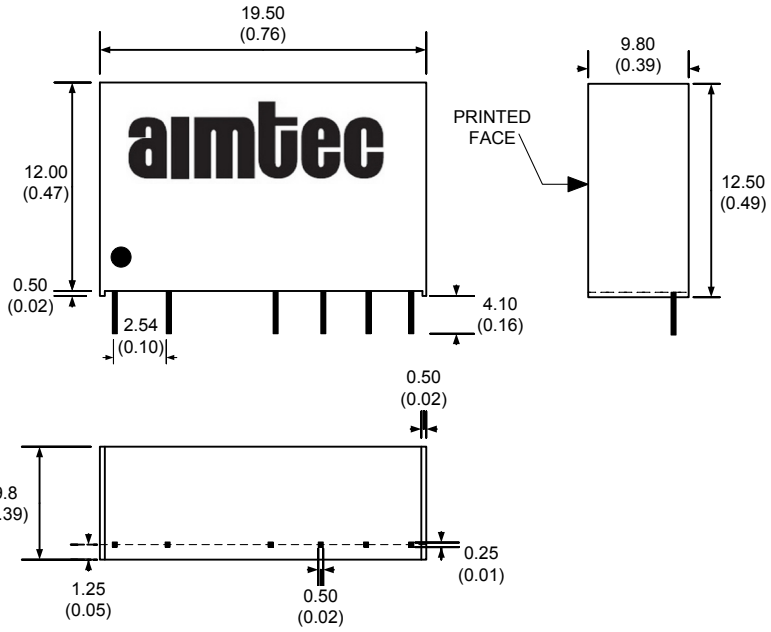
External capacitor – Dual output

Vin (VDC)	External capacitor (µF)	Vout (VDC)	External capacitor (µF)
5	4.7	5	10
12	2.2	9	4.7
24	1	12	2.2
-	-	15	1

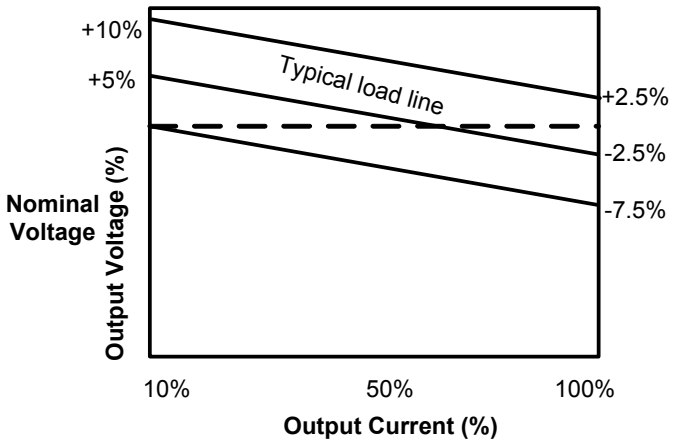
Dimensions
1000 and 3000VDC



Dimensions
6000VDC



Tolerance Envelope Graph



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