aimtec
Your Power Partner

Series AM1DE-Z

1 Watt | DC-DC Converter

FEATURES:

- Operating Temperature -40˚C to +105˚C
- High efficiency up to 81%
- Low Profile Plastic Package
- 7 pin SIP package
- Low Ripple and Noise
- Continuous Short Circuit Protection
- Pin Compatible with Multiple Manufacturers
- Input / Output Isolation 1500, and 3000 VDC

CE RoHS

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full Load | No Load (mA)		Max Capacitive Load (uF)	Efficiency %
AM1DE-0505SZ	4.5 - 5.5	5	200	1500	253	30	220	80
AM1DE-0512SZ	4.5 - 5.5	12	83.3	1500	253	30	100	80
AM1DE-0515SZ	4.5 - 5.5	15	66.7	1500	253	30	100	80
AM1DE-1205SZ	10.8 - 13.2	5	200	1500	106	15	220	80
AM1DE-1212SZ	10.8 - 13.2	12	83.3	1500	106	15	100	80
AM1DE-1215SZ	10.8 - 13.2	15	66.7	1500	104	15	100	81
AM1DE-2405SZ	21.6 – 26.4	5	200	1500	53	7	220	80
AM1DE-2412SZ	21.6 – 26.4	12	83.3	1500	53	7	100	80
AM1DE-2415SZ	21.6 – 26.4	15	66.7	1500	53	7	100	80
AM1DE-0505SH30Z	4.5 - 5.5	5	200	3000	253	30	220	80
AM1DE-0512SH30Z	4.5 - 5.5	12	83.3	3000	253	30	100	80
AM1DE-0515SH30Z	4.5 - 5.5	15	66.7	3000	253	30	100	80
AM1DE-1205SH30Z	10.8 - 13.2	5	200	3000	106	15	220	80
AM1DE-1212SH30Z	10.8 - 13.2	12	83.3	3000	106	15	100	80
AM1DE-1215SH30Z	10.8 - 13.2	15	66.7	3000	104	15	100	81
AM1DE-2405SH30Z	21.6 – 26.4	5	200	3000	53	7	220	80
AM1DE-2412SH30Z	21.6 – 26.4	12	83.3	3000	53	7	100	80
AM1DE-2415SH30Z	21.6 – 26.4	15	66.7	3000	53	7	100	80

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full Load | No Load (mA)		Max Capacitive Load (uF)	Efficiency (%)
AM1DE-0505DZ	4.5 - 5.5	±5	±100	1500	253	30	±100	80
AM1DE-0512DZ	4.5 - 5.5	±12	±41.67	1500	253	30	±47	80
AM1DE-0515DZ	4.5 - 5.5	±15	±33.33	1500	253	30	±47	81
AM1DE-1205DZ	10.8 - 13.2	±5	±100	1500	106	15	±100	80
AM1DE-1212DZ	10.8 - 13.2	±12	±41.67	1500	106	15	±47	80
AM1DE-1215DZ	10.8 - 13.2	±15	±33.33	1500	104	15	±47	80
AM1DE-2405DZ	21.6 – 26.4	±5	±100	1500	53	7	±100	80
AM1DE-2412DZ	21.6 – 26.4	±12	±41.67	1500	53	7	±47	80
AM1DE-2415DZ	21.6 – 26.4	±15	±33.33	1500	53	7	±47	80
AM1DE-0505DH30Z	4.5 - 5.5	±5	±100	3000	253	30	±100	80
AM1DE-0512DH30Z	4.5 - 5.5	±12	±41.67	3000	253	30	±47	80
AM1DE-0515DH30Z	4.5 - 5.5	±15	±33.33	3000	253	30	±47	81
AM1DE-1205DH30Z	10.8 - 13.2	±5	±100	3000	106	15	±100	80
AM1DE-1212DH30Z	10.8 - 13.2	±12	±41.67	3000	106	15	±47	80
AM1DE-1215DH30Z	10.8 - 13.2	±15	±33.33	3000	104	15	±47	80
AM1DE-2405DH30Z	21.6 – 26.4	±5	±100	3000	53	7	±100	80
AM1DE-2412DH30Z	21.6 – 26.4	±12	±41.67	3000	53	7	±47	80
AM1DE-2415DH30Z	21.6 – 26.4	±15	±33.33	3000	53	7	±47	80

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	4.5 - 5.5		VDC
	12	10.8 - 13.2		
	24	21.6 - 26.4		
Filter		Capacitor		
Input Reflected Ripple Current	With reference circuit	15		mA p-p
Absolute Maximum Rating (1 Sec Max)	5 Vin	0-9		VDC
	12 Vin	0-18		
	24 Vin	0-30		

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500 or 3000	VDC
Resistance		> 1000		MOhm
Capacitance		50		pF

Output Specifications

Parameters	Conditions		Typical	Maximum	Units
Voltage Accuracy			-7.5 ~ +2.5		%
Short Circuit Protection	Continuous with Auto Recovery				
Line Voltage Regulation	For 1.0% of Vin		±1.2		%
Load Voltage Regulation	Load 10~100%	5V Vin models	±10		%
		Others	±7.5		
Temperature Coefficient			±0.02		%/°C
Ripple & Noise*	At 20MHz Bandwidth		75		mV p-p

* measured with 0.1 µF ceramic capacitor

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	Variable	50		KHz
Operating Temperature	Derating above 95°C	-40 to +105		°C
Storage Temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity			95	%
Case Material	Non-conductive black plastic UL 94 V-0			
Weight		2.4		g
Dimensions (L x W x H)	0.76 x 0.24 x 0.39 inch 19.50 x 6.00 x 10.00 mm			
MTBF	>3 600 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

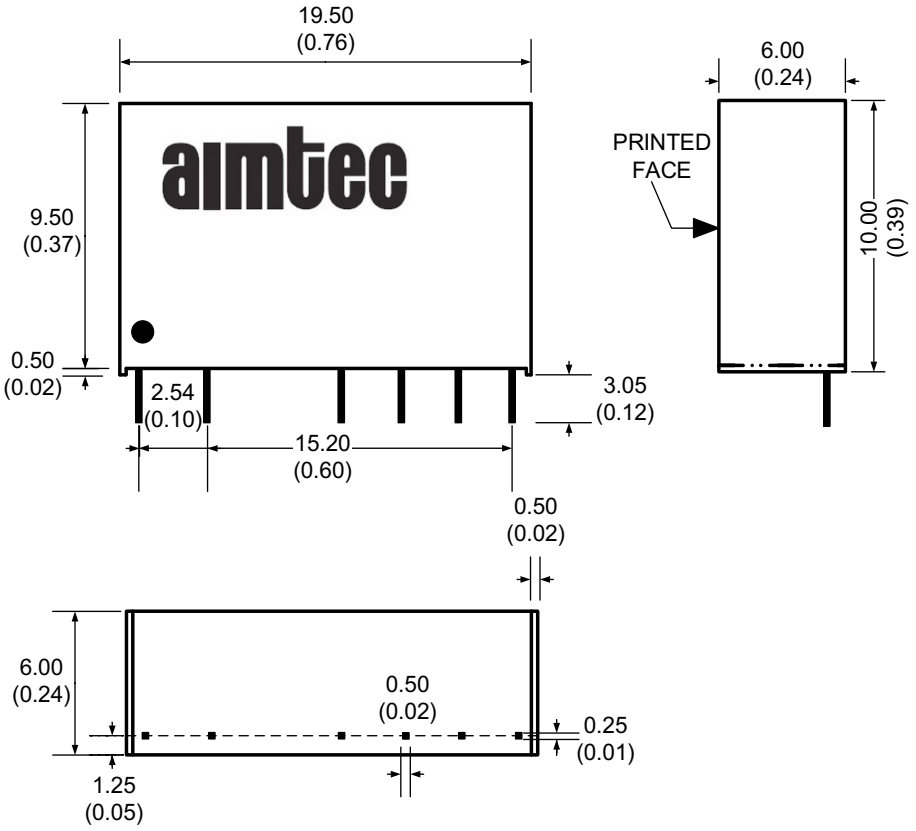
Safety Specifications

Parameters	
Agency Approval	CE
Standards	EN 55032 , Class B (with external reference circuit below) IEC 61000-4-2: 2008 IEC 61000-4-3: 2010 IEC 61000-4-4: 2012 IEC 61000-4-5: 2014 IEC 61000-4-6: 2013 IEC 61000-4-8: 2009 Designed to meet IEC60950-1

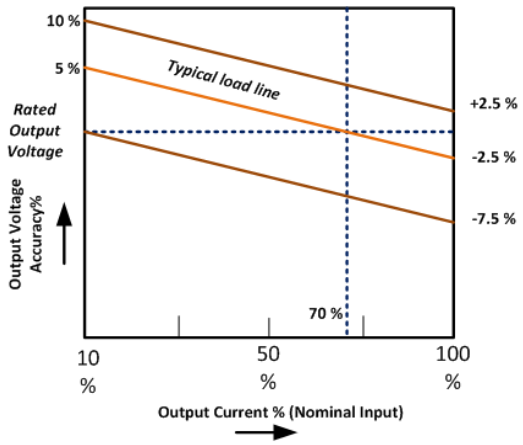
Pin Out Specifications

Pin	Single 1500 VDC	Dual 1500 VDC	Single 3000 VDC	Dual 3000 VDC
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

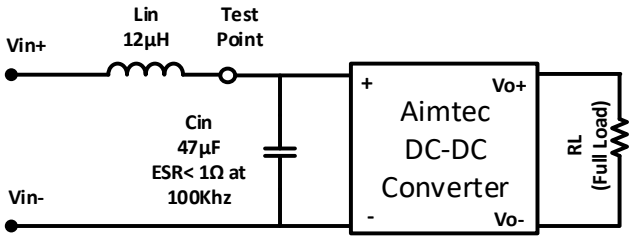
Dimensions



Load Accuracy Tolerance Graph

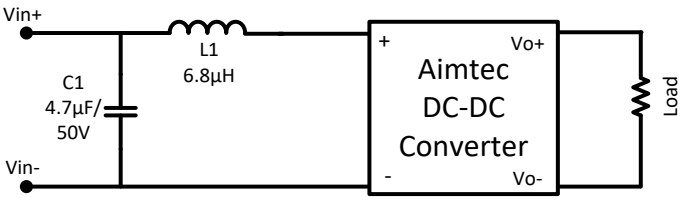


Input Reflected Ripple Test Circuit

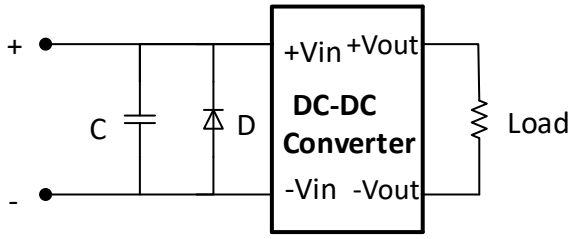


* Tested at full load, and nominal input

Conducted Emissions Circuit, class B

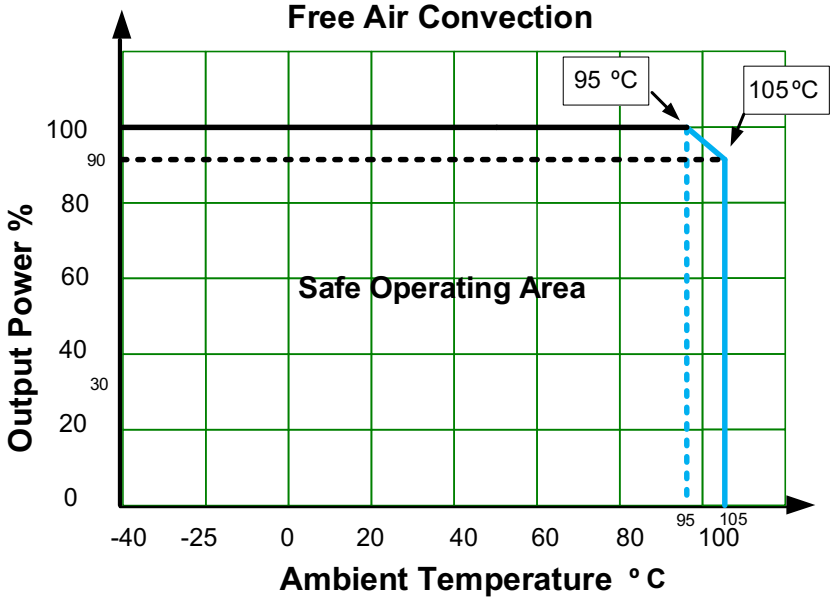


Surge Immunity test circuit



Models	C	D
AM1DE-05xx	1000uF/35V	9V
AM1DE-12xx	1000uF/35V	18V
AM1DE-24xx	330uF/50V	28V

Derating



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