aimtec
Your Power Partner

Series AM2DS-Z

2 Watt | DC-DC Converter



FEATURES:

- RoHS compliant SIP7 package
- High efficiency up to 80%
- I/O Isolation 5200 VDC
- Rated working voltage 250VAC and 400VDC
- Low Ripple and Noise
- Continuous Short Circuit Protection
- Low coupling capacity

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Max Capacitive Load (uF)	Efficiency (%)
AM2DS-0503SH52Z	5	3.3	500	1000	76
AM2DS-0505SH52Z	5	5	400	470	79
AM2DS-0509SH52Z	5	9	222	470	83
AM2DS-0512SH52Z	5	12	167	220	84
AM2DS-0515SH52Z	5	15	133	220	85
AM2DS-1203SH52Z	12	3.3	500	1000	74
AM2DS-1205SH52Z	12	5	400	470	79
AM2DS-1209SH52Z	12	9	222	470	82
AM2DS-1212SH52Z	12	12	167	220	82
AM2DS-1215SH52Z	12	15	133	220	83
AM2DS-1503SH52Z	15	3.3	500	1000	74
AM2DS-1505SH52Z	15	5	400	470	78
AM2DS-1509SH52Z	15	9	222	470	81
AM2DS-1512SH52Z	15	12	167	220	82
AM2DS-1515SH52Z	15	15	133	220	83
AM2DS-2403SH52Z	24	3.3	500	1000	73
AM2DS-2405SH52Z	24	5	400	470	78
AM2DS-2409SH52Z	24	9	222	470	81
AM2DS-2412SH52Z	24	12	167	220	81
AM2DS-2415SH52Z	24	15	133	220	81

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max Capacitive Load (uF)	Efficiency (%)
AM2DS-0505DH52Z	5	±5	±200	±220	79
AM2DS-0509DH52Z	5	±9	±111	±220	82
AM2DS-0512DH52Z	5	±12	±83.3	±100	83
AM2DS-0515DH52Z	5	±15	±66.7	±100	84
AM2DS-051509DH52Z	5	+15/-9	+67/-111	+100/-220	83
AM2DS-1205DH52Z	12	±5	±200	±220	79
AM2DS-1209DH52Z	12	±9	±111	±220	81
AM2DS-1212DH52Z	12	±12	±83.3	±100	83
AM2DS-1215DH52Z	12	±15	±67	±100	83
AM2DS-121509DH52Z	12	+15/-9	+67/-111	+100/-220	80
AM2DS-1505DH52Z	15	±5	±200	±220	79
AM2DS-1509DH52Z	15	±9	±111	±220	81
AM2DS-1512DH52Z	15	±12	±83.3	±100	83
AM2DS-1515DH52Z	15	±15	±66.7	±100	82
AM2DS-151509DH52Z	15	+15/-9	+67/-111	+100/-220	81
AM2DS-2405DH52Z	24	±5	±200	±220	79
AM2DS-2409DH52Z	24	±9	±111	±220	80
AM2DS-2412DH52Z	24	±12	±83.3	±100	81
AM2DS-2415DH52Z	24	±15	±66.7	±100	82
AM2DS-241509DH52Z	24	+15/-9	+67/-111	+100/-220	80

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5 12 15 24	4.5-5.5 10.8-13.2 13.5-16.5 21.6-26.4		VDC
Filter	Capacitor			
Startup time	Vnom, constant resistive load	20		ms
Absolute Maximum Rating (1sec max)	5 Vin 12 Vin 15 Vin 24 Vin		0-9 0-18 0-20 0-30	VDC
Quiescent Current	5 Vin 12 Vin 15 Vin 24 Vin		40 30 25 20	mA
Input Reflected Ripple current	See the suggested circuit	20		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		5200	VDC
Resistance		>1000		MOhm
Capacitance		7		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±5	%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Line voltage regulation	For 1% change of V in		±1.2	%
Load voltage regulation	20 to 100% load, 5Vin, 3.3V/5V single output models		±12	%
	20 to 100% load		±10	%
Cross regulation	25-100% load on 1st output, 100% load on 2nd output	±5		%
Temperature coefficient		±0.03		%/°C
Ripple and Noise*	20MHz Bandwidth		150	mV p-p

*Output ripple and noise are measured with external connection of 10uF electrolytic capacitor and 1uF ceramic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load, depending of the model	50 - 100		KHz
Operating temperature	With derating above 65°C	-40 to +95		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			95	°C
Cooling	Free air convection			
Humidity			95	% RH
Case material	Non-conductive black plastic, epoxy encapsulated (UL94V-0 rated)			
Soldering temperature	1.5mm from case for 10 sec.		260	°C
Weight		2.7		g
Dimensions (L x W x H)	0.76 x 0.28 x 0.39 inches 19.5 x 7.2 x 10.0 mm			
MTBF	>3 300 000 hrs (MIL-HDBK-217 F at +25 °C)			
Manual soldering temperature	1.5mm from case for 10sec		260	°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.

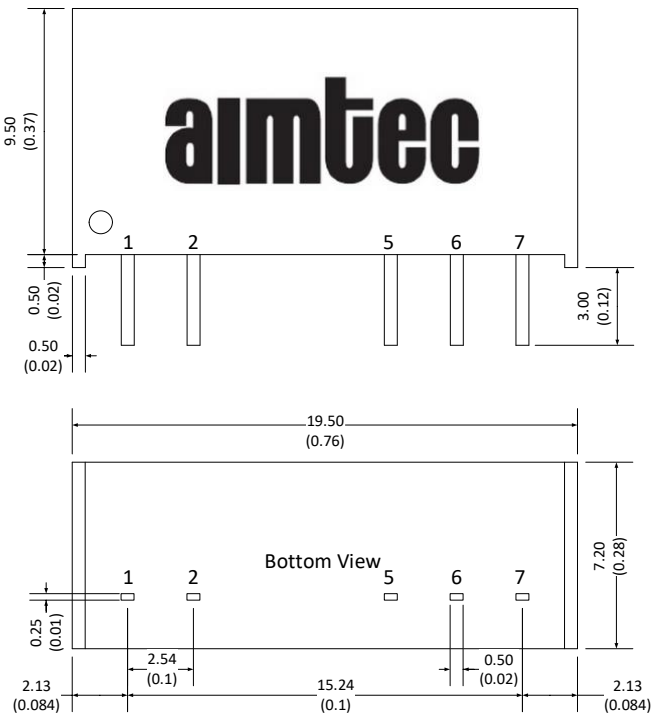
Safety Specifications

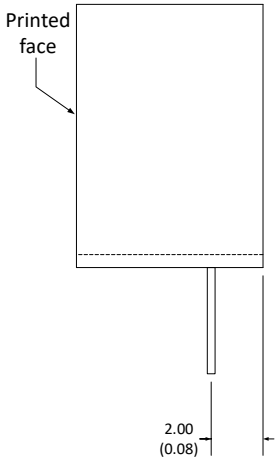
Parameters	
Agency Approvals	CE
Standards	EN 55032, Class B, with external filter & EN 55024: 2010 IEC 61000-4-2, Criteria A IEC 61000-4-3, Criteria A IEC 61000-4-4, Criteria A, with external filter IEC 61000-4-5, Criteria A, with external filter IEC 61000-4-6, Criteria A IEC 61000-4-8, Criteria A Designed to meet IEC/EN 60950-1

Pin Out Specifications

Pin	5200 VDC	
	Single	Dual
1	+ V Input	+ V Input
2	- V Input	- V Input
5	- V Output	- V Output
6	No pin	Common
7	+ V Output	+ V Output

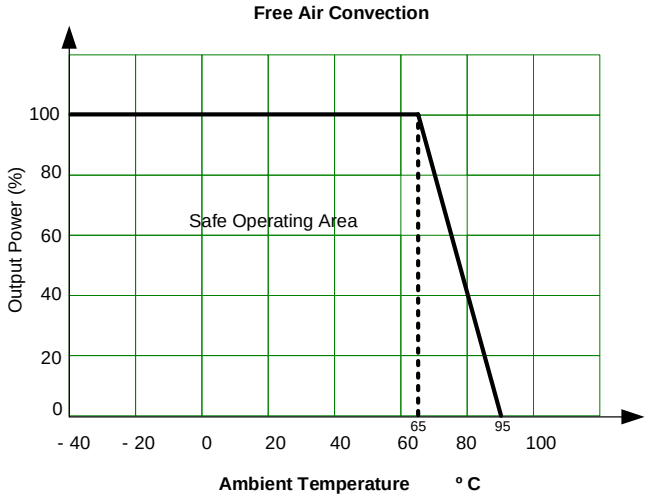
Dimensions



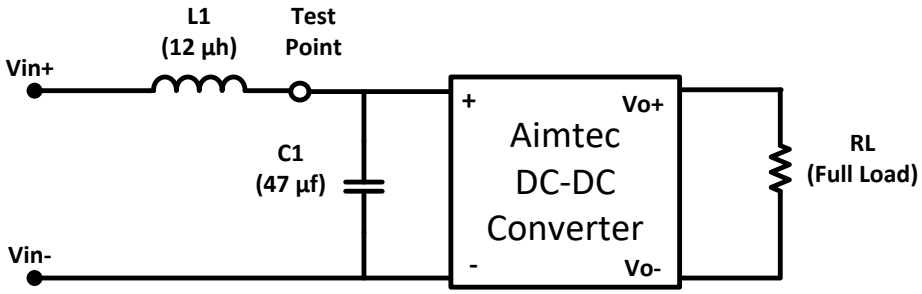


Note:
Unit: mm(inch)
Pin pitch and length tolerance: ±0.35mm (±0.014)
Pin To case tolerance: ±0.50mm (±0.02)
Case tolerance: ±0.50mm (±0.02)

Derating



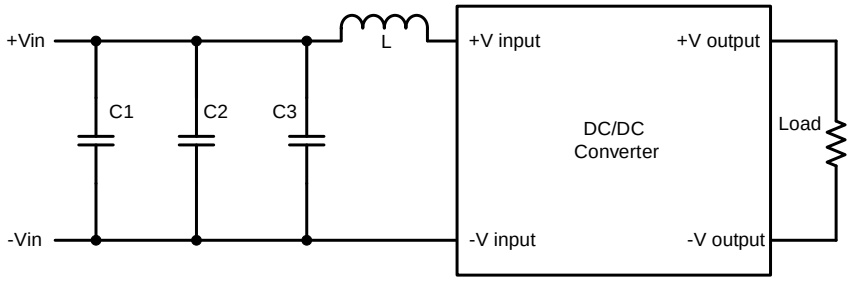
Input Reflected Ripple Current Test Circuit



* Tested at full load, and nominal input

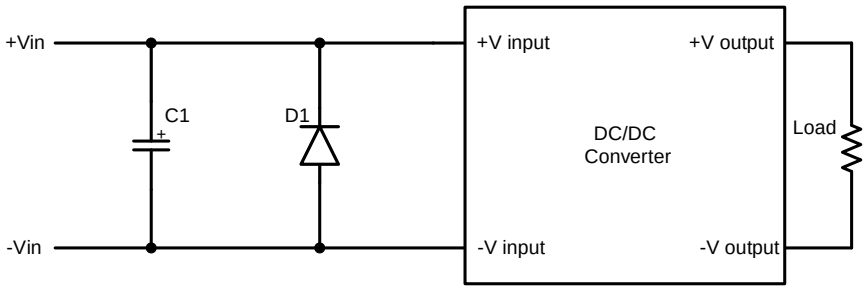
EMI Filter Circuit recommendation

Conducted Emissions



Vin	C1	C2, C3	L
5V	4.7 µF / 16V	-	6.8µH
12V & 15V	22 µF / 25V	-	6.8µH
24 V	10 µF / 35V	10 µF / 35V	10µH

EFT/Surge Circuit recommendation



Vin	C1	D1
5V	330 µF / 50V	9V
12V	330 µF / 50V	13V
15V	330 µF / 50V	18V
24 V	1000 µF / 35V	24V

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