aimtec
Your Power Partner

Series AM9GH-Z

9 Watt | DC-DC Converter



FEATURES:

- SIP8 Metal Case Package
- High Efficiency up to 89%
- On / Off Control
- Input Under Voltage Lockout
- Operating Temperature -40°C to +85°C
- Continuous Short Circuit Protection
- Input / Output Isolation 1600VDC
- Wide 4:1 Input Range

RoHS

Models
Single Output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full | No Load (mA)		Capacitor Load (µF)	Efficiency (%)
AM9GH-2403SZ	9-36	3.3	2000	1600	335	9	2600	82
AM9GH-2405SZ	9-36	5	1600	1600	392	9	1300	85
AM9GH-2409SZ	9-36	9	1000	1600	436	9	800	88
AM9GH-2412SZ	9-36	12	750	1600	425	9	560	88
AM9GH-2415SZ	9-36	15	600	1600	421	9	560	89
AM9GH-2424SZ	9-36	24	375	1600	421	9	200	89
AM9GH-4803SZ	18-75	3.3	2000	1600	168	5	2600	82
AM9GH-4805SZ	18-75	5	1600	1600	196	5	1300	85
AM9GH-4809SZ	18-75	9	1000	1600	218	5	800	87
AM9GH-4812SZ	18-75	12	750	1600	211	5	560	88
AM9GH-4815SZ	18-75	15	600	1600	213	5	560	89
AM9GH-4824SZ	18-75	24	375	1600	213	5	200	89

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full | No Load (mA)		Capacitor Load (µF)	Efficiency (%)
AM9GH-2405DZ	9-36	±5	±800	1600	392	9	±800	85
AM9GH-2412DZ	9-36	±12	±375	1600	426	9	±390	88
AM9GH-2415DZ	9-36	±15	±300	1600	426	9	±200	87
AM9GH-4805DZ	18-75	±5	±800	1600	196	5	±800	85
AM9GH-4812DZ	18-75	±12	±375	1600	216	5	±390	87
AM9GH-4815DZ	18-75	±15	±300	1600	216	5	±200	87

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	24 48	9-36 18-75		VDC
Filter		Capacitor		
Transient recovery time		250		µs
Transient Response deviation	3.3 & 5 V output		±3 ±5	%
Startup time		50		ms
Absolute Maximum Rating	24 Vin 48 Vin	-0.7-50 -0.7-100		VDC
Input Reflected Ripple Currernt			30	mA p-p
On / Off Control	ON – high impedance or open; OFF – 2-4mA input current through 1KΩ (standby 2.5mA max)			
Under Voltage lockout	24 48	9-7 18-14		VDC

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC

Case / Input or Output	60 sec		1000	VDC
Resistance		> 1000		MOhm
Capacitance		50		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Cross Regulation (Dual)	1st output 25% to 100%, 2nd output 100%	±5		%
Short Circuit protection	Continuous			
Short Circuit restart	Auto recovery			
Line voltage regulation	LL~HL	±0.2		%
Load voltage regulation (Single)	0-100% load, 3.3 Vin 0-100% load, others	±1 ±0.5		%
Load voltage regulation (Dual)	0-100% load	±1		%
Temperature coefficient		±0.02		%/ºC
Ripple & Noise*	At 20MHz Bandwidth	75		mV p-p
Transient recovery time	100% - 25% load, 25% load step change	250		µs
Transient response deviation		±3	±5	%

***Measured with 1µF CC and 10µF EC.**

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load, 24Vin models 100% load, 48Vin models	400 500		KHz
Operating temperature	Refer Derating Curve	-40 to +85		ºC
Storage temperature	-55 to +125			ºC
Max Case temperature			+100	ºC
Cooling	Free air convection			
Humidity			95	%
Case material	Copper			
Potting material	Epoxy (UL94V-0 rated)			
Pin Material	C5191R-H Solder coated			
Weight		7.3		g
Dimensions (L x W x H)	0.86 x 0.38 x 0.44 inch 21.85 x 9.60 x 11.20 mm			
MTBF	>900,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)			
Maximum soldering temperature	1.5mm from case for 10 sec max		260	ºC

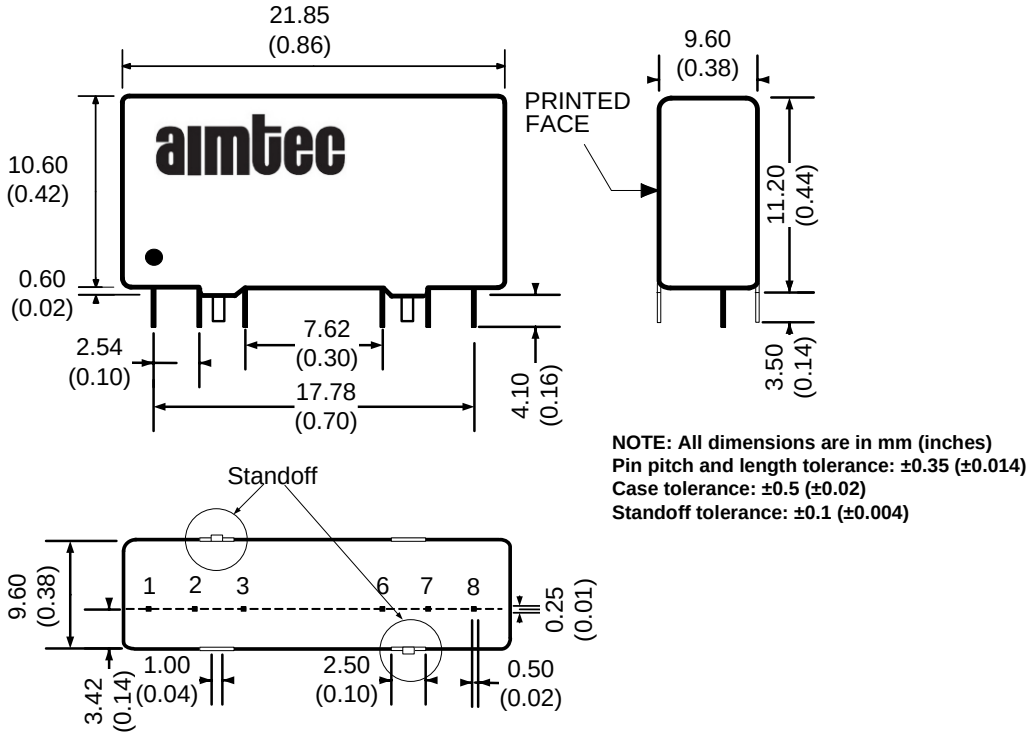
Safety Specifications

Parameters	
Standards	EN55032 Class A, EN55024 (external class A circuit required)
	IEC61000-4-2, Perf. Criteria B
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external EFT/Surge circuit required)
	IEC61000-4-5, Perf. Criteria A (external EFT/Surge circuit required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A
	NOTE: designed to meet IEC 60950-1:2001

Pin Out Specifications

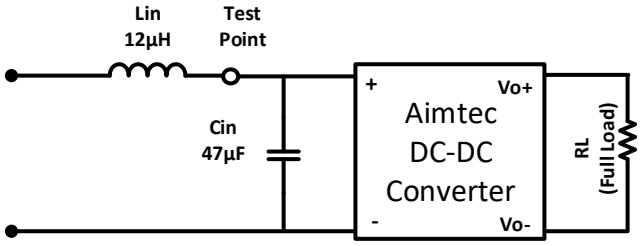
Pin	1600 VDC	
	Single	Dual
1	- V Input	- V Input
2	+ V Input	+ V Input
3	On/Off Control	On/Off Control
6	+ V Output	+ V Output
7	- V Output	Common
8	N.C.	- V Output

Dimensions



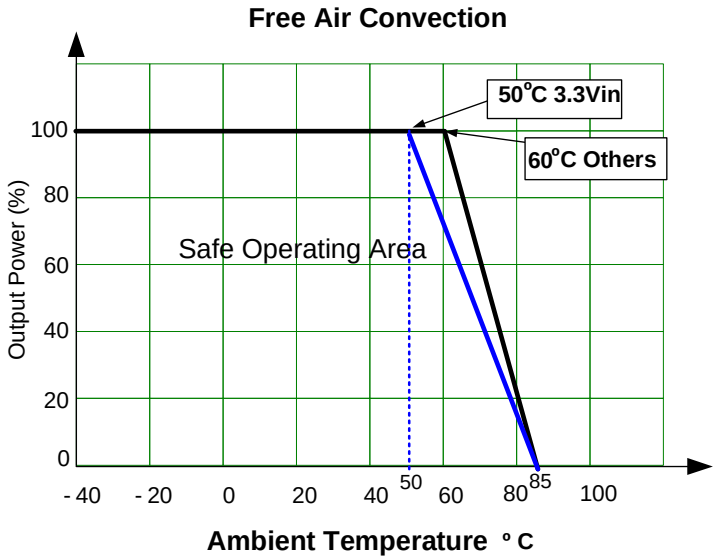
NOTE: All dimensions are in mm (inches)
Pin pitch and length tolerance: ±0.35 (±0.014)
Case tolerance: ±0.5 (±0.02)
Standoff tolerance: ±0.1 (±0.004)

Input Reflected Ripple Test Circuit

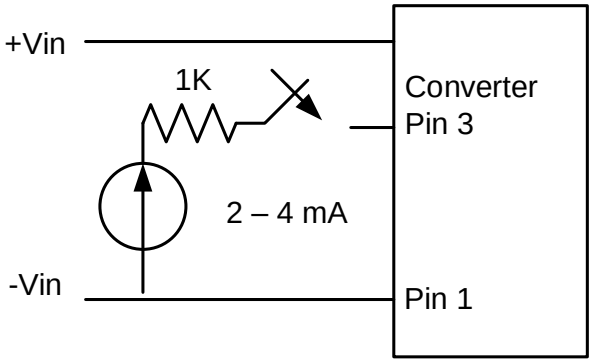


* Tested at full load, and nominal input

Derating

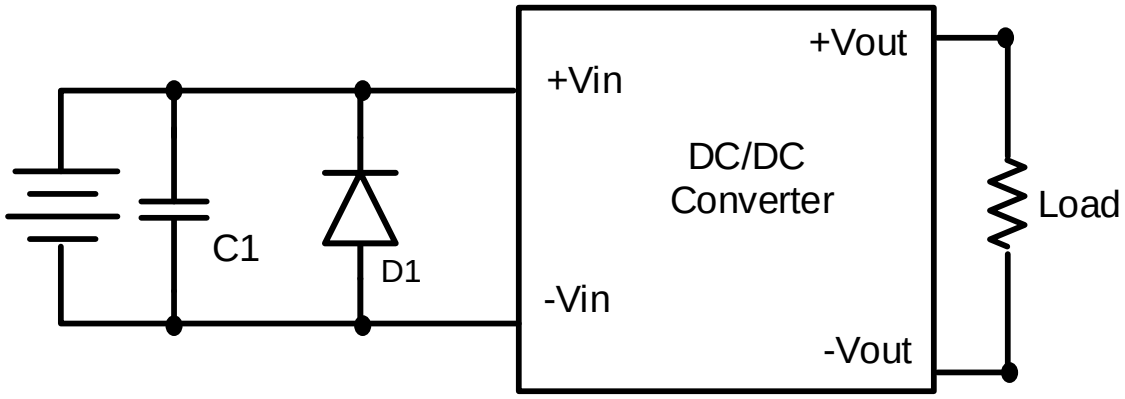


Control ON/OFF pin connection example:



The voltage could be applied trough a limiting resistor. The converter is turned on when the external switching circuit is open.

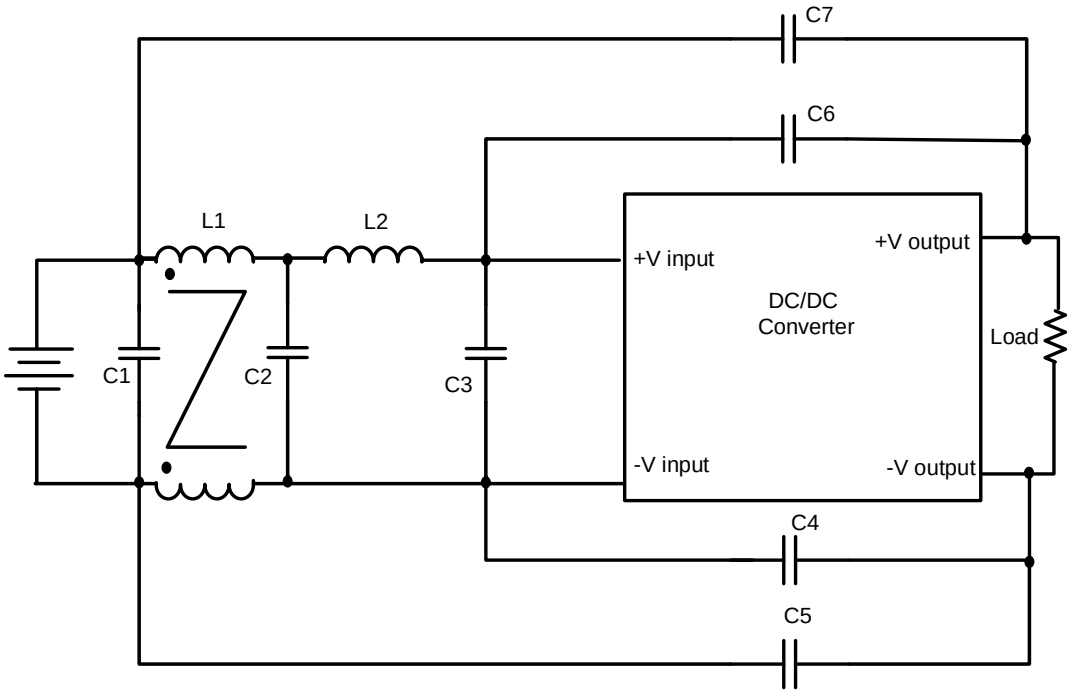
EFT/Surge Application circuit



Vin	C1	D1
24VDC	300µF/100V	TVS, 3kW, 75V
48VDC		TVS, 3kW, 120V

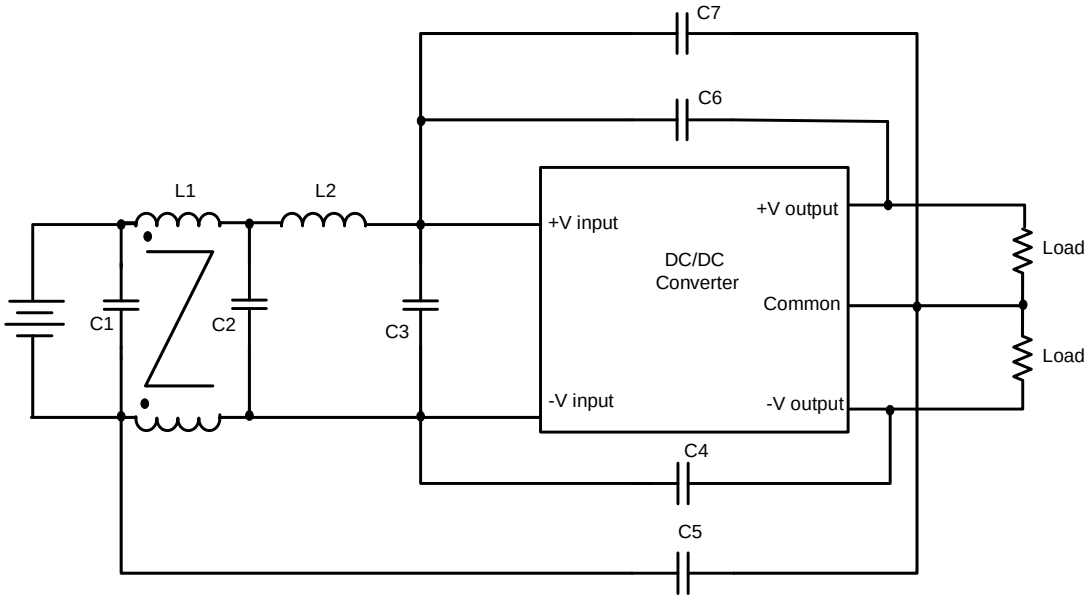
Class A EMI, external filter

Single output models

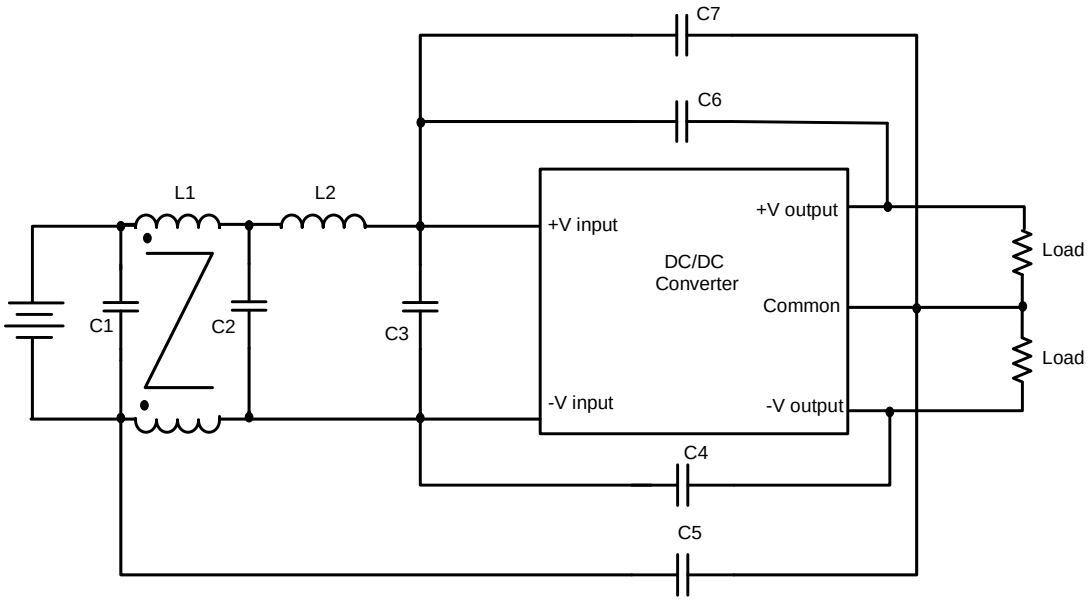


Vin	C1, C2, C3	C4, C5, C6 & C7	L1	L2
24VDC	10µF/35V	220pF/3KV	20µH	20µH
48VDC	4.7µF/100V	1000pF/3KV	132.8µH	10µH

Dual output models 24Vin models



Dual output models 48Vin models



Vin	C1, C2, C3	C4, C5 & C6	L1	L2	C7
24VDC	10µF/35V	220pF/3KV	20µH	20µH	1000pF/3KV
Vin	**C1, C2, C3**	**C4 & C6**	**L1**	**L2**	**C5 & C7**
48VDC	4.7µF/100V	1000pF/3KV	132.8µH	10µH	220pF/3KV

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