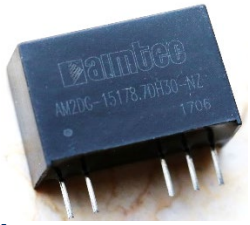
Series AM2DG-NZ

2.1 Watt | DC-DC Converter



FEATURES:

- I/O Isolation up to 3500VAC
- Efficiency up to 81%
- Ultra-low Isolation capacitance
- SIP 7 Multiple Manufacturers pin compatible
- Extended temperature range: -40 to +105°C
- Continuous short circuit protection

RoHS

Models

Dual output

Model	Input Voltage (V)	Input current FL (mA)	Output Voltage (V)	Output Current max (mA)	Max Capacitive Load (uF)	Efficiency (%)
AM2DG-1509SH30-NZ	14.5 – 15.5	84	+9 (8.5 ~ 9.5)	+111	220	80
AM2DG-121508DH30-NZ	9 - 15	223	+15 (14 ~ 16) / -8 (-7 ~ -9)	+100/-80	220	80
AM2DG-12158.7DH30-NZ	11.6 – 12.4	162	+15 (14 ~ 16) / -8.7 (-7 ~ -10)	+80/-40	220	80
AM2DG-15158.7DH30-NZ	14.5 – 15.5	130	+15 (14 ~ 16) / -8.7 (-7 ~ -10)	+80/-40	220	80
AM2DG-150909DH30-NZ	14.5 – 15.5	84	+9 (8.6 ~ 9.4) / -9 (-8.3 ~ -9.7)	+55/-55	220	80
AM2DG-15178.7DH30-NZ	14.5 – 15.5	143	+17 (16.5 ~ 18) / -8.7 (-7 ~ -10)	+80/-40	220	80
AM2DG-24158.7DH30-NZ	23.3 – 24.7	81	+15 (14 ~ 16) / -8.7 (-7 ~ -10)	+80/-40	220	80
AM2DG-12153.5DH35-NZ	10.8-13.2	210	+15 (14.4 ~ 15.9) / -3.5 (-3.3 ~ -4)	+111/-111	220	81

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	12	9 – 15 11.6 – 12.4 10.8 – 13.2		VDC
	15	14.5 – 15.5		
	24	23.3 – 24.7		
Filter	Capacitor			
Absolute Maximum Rating	12		-0.7 – 15 -0.7 – 13 -0.7 – 18	VDC
	15		-0.7 – 16	
	24		-0.7 - 26	
Peak Input Voltage time			1000	ms
No Load Input Current	AM2DG-12153.5DH35-NZ		15	mA
	Others		20	

Isolation Specifications

Parameters	Conditions		Typical	Maximum	Units
Tested I/O voltage	60sec, <1mA	AM2DG-12153.5DH35-NZ		3500	VAC
		Others		3000	
Resistance			>1000		MOhm
Capacitance	100KHz/0.1V		3.5		pF
			6.6		

Output Specifications

Parameters	Conditions		Typical	Maximum	Units
Voltage accuracy	See tolerance graph				
Short Circuit protection	Continuous, auto restart				
Line voltage regulation	AM2DG-12153.5DH35-NZ		±1.1	±1.2	% of Vin
	Others		±1.2		
Load voltage regulation	10 – 100% load	AM2DG-12153.5DH35-NZ	+7/-10		%
		Others	±10	±15	
Temperature coefficient	Full load			±0.03	%/°C

Ripple & Noise	20MHz Bandwidth	AM2DG-12153.5DH35-NZ	+120/-80		mV p-p
		Others	100	200	

General Specifications

Parameters	Conditions		Typical	Maximum	Units
Switching frequency	100% load	AM2DG-12153.5DH35-NZ	67		KHz
		Others	100	300	
Operating temperature	Derating above 85°C		-40 to +105		ºC
Storage temperature	-55 to +125				ºC
Maximum case temperature				105	ºC
Cooling	Free air convection				
Humidity				95	% RH
Case material	AM2DG-12153.5DH35-NZ		Non-conductive black plastic		
	Others		Non-conductive black plastic (UL94V-0 rated)		
Weight	4.3				g
Dimensions (L x W x H)	0.77 x 0.39 x 0.49 inches 19.50 x 9.80 x 12.50 mm				
MTBF	>3,500,000hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)				
Maximum soldering temperature	1.5 mm from case for 10sec			300	ºC

Safety Specifications

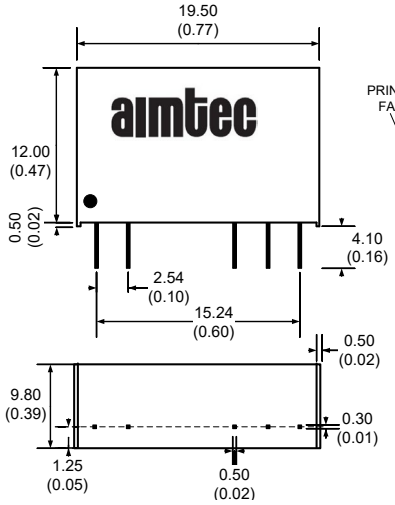
Parameters	
Standards	Designed to meet UL60950-1 for models with 3000VDC isolation only
	EN55032 Class B (see recommended circuit)
	IEC61000-4-2, Perf. Criteria B (ESD Contact ±8KV) for models with 3000VDC isolation
	IEC61000-4-2, Perf. Criteria B (ESD Contact ±6KV) for models with 3500VDC isolation

Pin Out Specifications

Pin	Single	Dual
1	+ V Input	+ V Input
2	- V Input	- V Input
5	- V Output	- V Output
6	N. C.*	Common
7	+ V Output	+ V Output

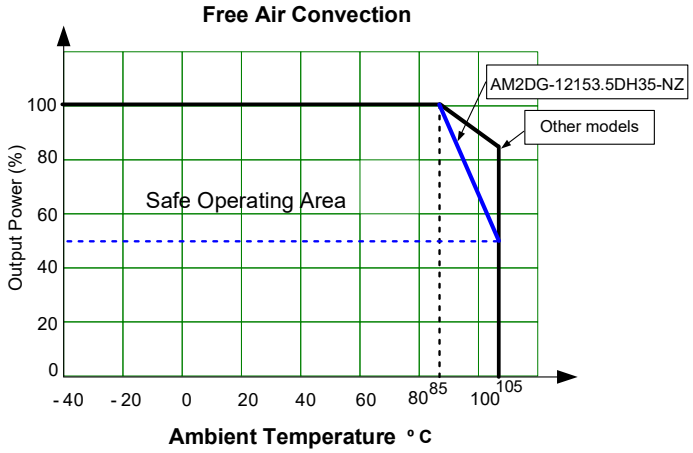
* N.C. Not Connected

Dimensions



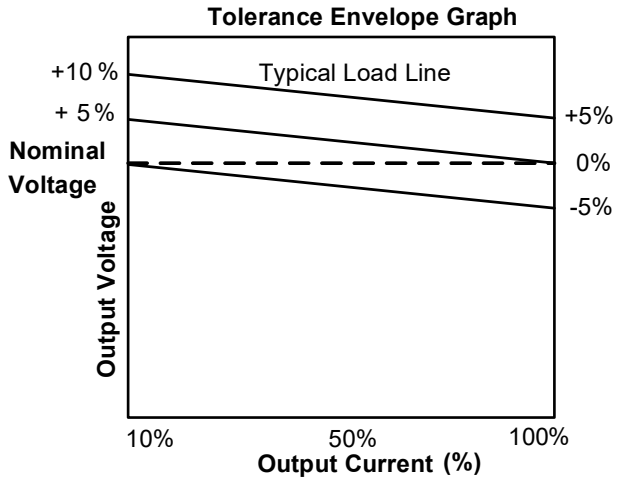
NOTE: Unit: mm [inch]
Pin Pitch tolerance: ±0.10mm [±0.004 inch]
Case tolerance: ±0.50mm [±0.02 inch]

Derating

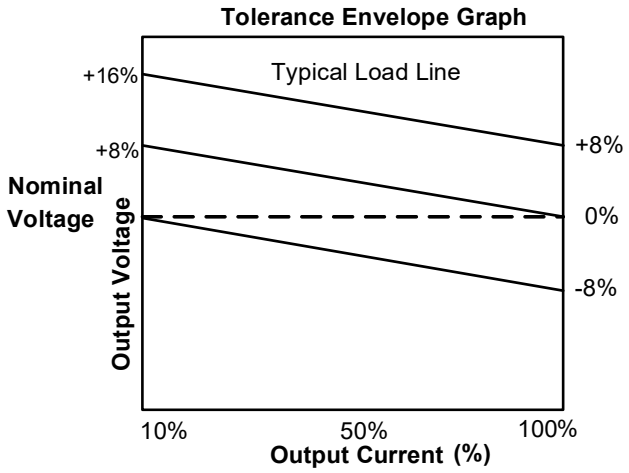


Tolerance Graph

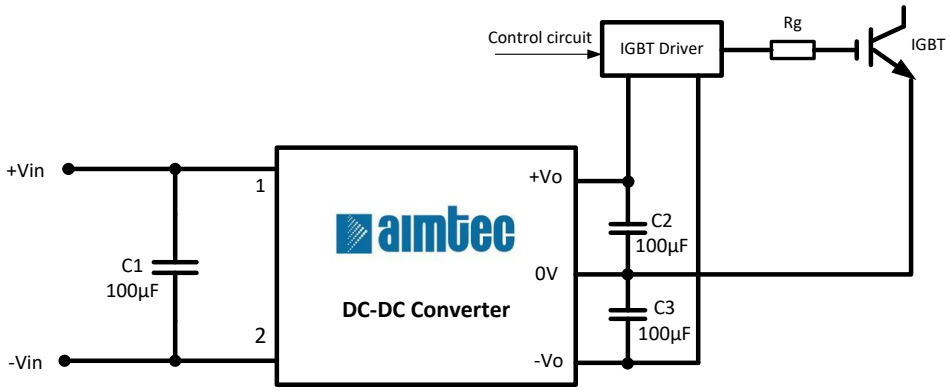
+Vo (with exception of AM2DG-12153.5DH35-NZ)



-Vo (with exception of AM2DG-12153.5DH35-NZ)



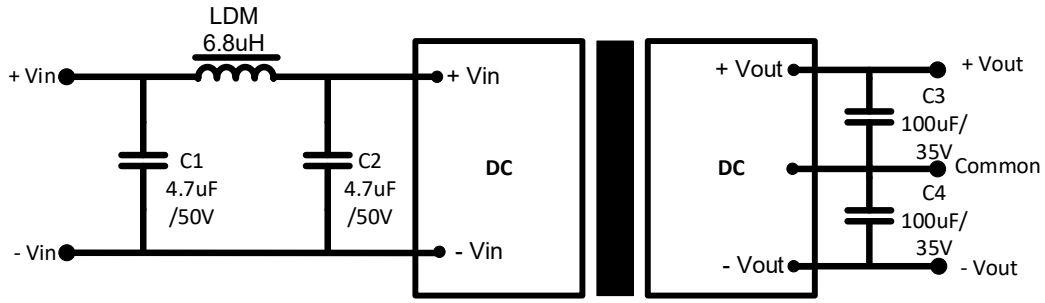
Application Circuit



Note: Low Internal resistance capacitors suggested

EMI Recommended Circuit (Class B)

Model AM2DG-12153.5DH35-NZ



Other models