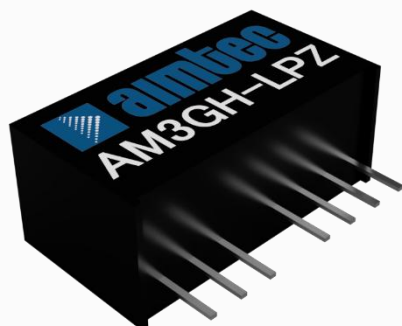


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AM3GH-LPZ



SIP8 Package

The AM3GH-LPZ is a 3W SIP8 DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a wide input voltage range of 4.5-75VDC as well as an output voltage of -24 to 28V. This compact SIP8 design will surely benefit your new system design.

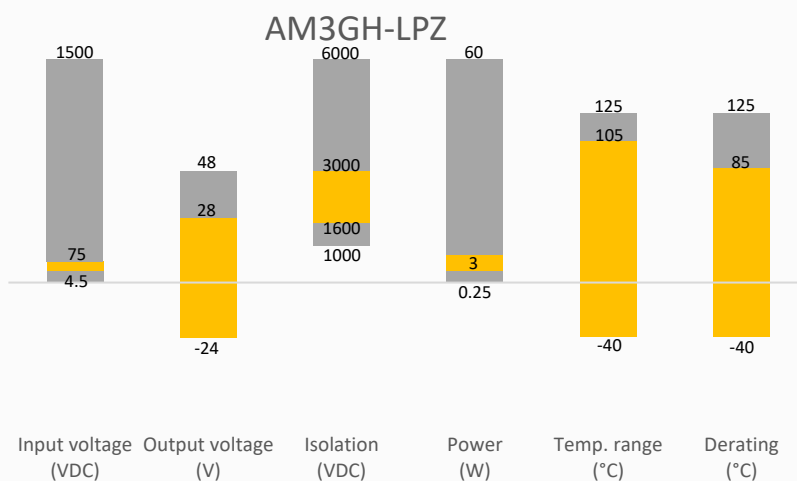
This new series offers a great operating temperature range from -40 to 105°C. Also, an isolation of 1600VDC or 3000VDC for improved reliability and system safety as well as a great 1,000,000h MTBF come standard.

The AM3GH-LPZ is suitable for many applications such as industrial systems, portable equipment, and internet of things.

Features

- High I/O Isolation of 1600VDC/3000VDC
- Input under voltage protection, output over current protection and short circuit protection
- Operating Temp: -40 °C to +105 °C
- Industry standard SIP8 pin-out
- Remote On/Off
- Regulated output

Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Industrial



Portable Equipment



IoT

Models & Specifications



Single Output						
Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Max (mA)	Isolation (VDC)	Maximum Capacitive Load (μF)	Efficiency Typ. (%)
AM3GH-1203SLPZ*	12 (4.5-18)	3.3	758	1600	2200	78
AM3GH-1205SLPZ*	12 (4.5-18)	5	600	1600	2200	80
AM3GH-1206SLPZ*	12 (4.5-18)	6	500	1600	1800	80
AM3GH-1209SLPZ*	12 (4.5-18)	9	333	1600	1000	80
AM3GH-1212SLPZ*	12 (4.5-18)	12	250	1600	680	81
AM3GH-1215SLPZ*	12 (4.5-18)	15	200	1600	470	81
AM3GH-1218SLPZ*	12 (4.5-18)	18	167	1600	330	83
AM3GH-1224SLPZ*	12 (4.5-18)	24	125	1600	220	83
AM3GH-1228SLPZ*	12 (4.5-18)	28	107	1600	220	83
AM3GH-2403SLPZ*	24 (9-36)	3.3	758	1600	2200	78
AM3GH-2405SLPZ*	24 (9-36)	5	600	1600	2200	80
AM3GH-2406SLPZ*	24 (9-36)	6	500	1600	1800	80
AM3GH-2409SLPZ*	24 (9-36)	9	333	1600	1000	80
AM3GH-2412SLPZ*	24 (9-36)	12	250	1600	680	81
AM3GH-2415SLPZ*	24 (9-36)	15	200	1600	470	81
AM3GH-2418SLPZ*	24 (9-36)	18	167	1600	330	83
AM3GH-2424SLPZ*	24 (9-36)	24	125	1600	220	83
AM3GH-2428SLPZ*	24 (9-36)	28	107	1600	220	83
AM3GH-4803SLPZ	48 (18-75)	3.3	758	1600	2200	75
AM3GH-4805SLPZ	48 (18-75)	5	600	1600	2200	79
AM3GH-4806SLPZ	48 (18-75)	6	500	1600	1800	79
AM3GH-4809SLPZ	48 (18-75)	9	333	1600	1000	79
AM3GH-4812SLPZ	48 (18-75)	12	250	1600	680	80
AM3GH-4815SLPZ	48 (18-75)	15	200	1600	470	81
AM3GH-4818SLPZ	48 (18-75)	18	167	1600	330	81
AM3GH-4824SLPZ	48 (18-75)	24	125	1600	220	81
AM3GH-4828SLPZ	48 (18-75)	28	107	1600	220	81
AM3GH-1203SH30LPZ*	12 (4.5-18)	3.3	758	3000	2200	78
AM3GH-1205SH30LPZ*	12 (4.5-18)	5	600	3000	2200	80
AM3GH-1206SH30LPZ*	12 (4.5-18)	6	500	3000	1800	80
AM3GH-1209SH30LPZ*	12 (4.5-18)	9	333	3000	1000	80
AM3GH-1212SH30LPZ*	12 (4.5-18)	12	250	3000	680	81
AM3GH-1215SH30LPZ*	12 (4.5-18)	15	200	3000	470	81
AM3GH-1218SH30LPZ*	12 (4.5-18)	18	167	3000	330	83
AM3GH-1224SH30LPZ*	12 (4.5-18)	24	125	3000	220	83
AM3GH-1228SH30LPZ*	12 (4.5-18)	28	107	3000	220	83
AM3GH-2403SH30LPZ*	24 (9-36)	3.3	758	3000	2200	78
AM3GH-2405SH30LPZ*	24 (9-36)	5	600	3000	2200	80
AM3GH-2406SH30LPZ*	24 (9-36)	6	500	3000	1800	80
AM3GH-2409SH30LPZ*	24 (9-36)	9	333	3000	1000	80
AM3GH-2412SH30LPZ*	24 (9-36)	12	250	3000	680	81
AM3GH-2415SH30LPZ*	24 (9-36)	15	200	3000	470	81
AM3GH-2418SH30LPZ*	24 (9-36)	18	167	3000	330	83
AM3GH-2424SH30LPZ*	24 (9-36)	24	125	3000	220	83

AM3GH-2428SH30LPZ*	24 (9-36)	28	107	3000	220	83
AM3GH-4803SH30LPZ	48 (18-75)	3.3	758	3000	2200	75
AM3GH-4805SH30LPZ	48 (18-75)	5	600	3000	2200	79
AM3GH-4806SH30LPZ	48 (18-75)	6	500	3000	1800	79
AM3GH-4809SH30LPZ	48 (18-75)	9	333	3000	1000	79
AM3GH-4812SH30LPZ	48 (18-75)	12	250	3000	680	80
AM3GH-4815SH30LPZ	48 (18-75)	15	200	3000	470	81
AM3GH-4818SH30LPZ	48 (18-75)	18	167	3000	330	81
AM3GH-4824SH30LPZ	48 (18-75)	24	125	3000	220	81
AM3GH-4828SH30LPZ	48 (18-75)	28	107	3000	220	81

Dual Output						
Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Max (mA)	Isolation (VDC)	Maximum Capacitive Load (μF)	Efficiency Typ. (%)
AM3GH-1203DLPZ*	12 (4.5-18)	±3.3	±379	1600	±1200	79
AM3GH-1205DLPZ*	12 (4.5-18)	±5	±300	1600	±1000	81
AM3GH-1209DLPZ*	12 (4.5-18)	±9	±167	1600	±560	81
AM3GH-1212DLPZ*	12 (4.5-18)	±12	±125	1600	±470	81
AM3GH-1215DLPZ*	12 (4.5-18)	±15	±100	1600	±330	81
AM3GH-1224DLPZ*	12 (4.5-18)	±24	±63	1600	±150	81
AM3GH-2403DLPZ*	24 (9-36)	±3.3	±379	1600	±1200	79
AM3GH-2405DLPZ*	24 (9-36)	±5	±300	1600	±1000	81
AM3GH-2409DLPZ*	24 (9-36)	±9	±167	1600	±560	82
AM3GH-2412DLPZ*	24 (9-36)	±12	±125	1600	±470	82
AM3GH-2415DLPZ*	24 (9-36)	±15	±100	1600	±330	82
AM3GH-2424DLPZ*	24 (9-36)	±24	±63	1600	±150	81
AM3GH-4803DLPZ	48 (18-75)	±3.3	±379	1600	±1200	77
AM3GH-4805DLPZ	48 (18-75)	±5	±300	1600	±1000	79
AM3GH-4809DLPZ	48 (18-75)	±9	±167	1600	±560	80
AM3GH-4812DLPZ	48 (18-75)	±12	±125	1600	±470	82
AM3GH-4815DLPZ	48 (18-75)	±15	±100	1600	±330	82
AM3GH-4824DLPZ	48 (18-75)	±24	±63	1600	±150	82
AM3GH-1203DH30LPZ*	12 (4.5-18)	±3.3	±379	3000	±1200	79
AM3GH-1205DH30LPZ*	12 (4.5-18)	±5	±300	3000	±1000	81
AM3GH-1209DH30LPZ*	12 (4.5-18)	±9	±167	3000	±560	81
AM3GH-1212DH30LPZ*	12 (4.5-18)	±12	±125	3000	±470	81
AM3GH-1215DH30LPZ*	12 (4.5-18)	±15	±100	3000	±330	81
AM3GH-1224DH30LPZ*	12 (4.5-18)	±24	±63	3000	±150	81
AM3GH-2403DH30LPZ*	24 (9-36)	±3.3	±379	3000	±1200	79
AM3GH-2405DH30LPZ*	24 (9-36)	±5	±300	3000	±1000	81
AM3GH-2409DH30LPZ*	24 (9-36)	±9	±167	3000	±560	82
AM3GH-2412DH30LPZ*	24 (9-36)	±12	±125	3000	±470	82
AM3GH-2415DH30LPZ*	24 (9-36)	±15	±100	3000	±330	82
AM3GH-2424DH30LPZ*	24 (9-36)	±24	±63	3000	±150	81
AM3GH-4803DH30LPZ	48 (18-75)	±3.3	±379	3000	±1200	77
AM3GH-4805DH30LPZ	48 (18-75)	±5	±300	3000	±1000	79
AM3GH-4809DH30LPZ	48 (18-75)	±9	±167	3000	±560	80
AM3GH-4812DH30LPZ	48 (18-75)	±12	±125	3000	±470	82
AM3GH-4815DH30LPZ	48 (18-75)	±15	±100	3000	±330	82
AM3GH-4824DH30LPZ	48 (18-75)	±24	±63	3000	±150	82

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Input current	12Vin, full load	309		mA
	24Vin, full load	154		mA
	48Vin, full load	79		mA
Filter	Capacitor			
Voltage Types	Vo, Io Nom		4:1	
Maximum Rating	12Vin	25		VDC
	24Vin	50		VDC
	48Vin	100		VDC
Peak Input Voltage Time			1	Sec
No load input current	12Vin	25		mA
	24Vin	15		mA
	48Vin	5		mA
Input Reflected Ripple Current	12Vin	30		mA
	24/48Vin	55		mA
Start-up voltage	12Vin		4.5	VDC
	24Vin		9	VDC
	48Vin		18	VDC
Under voltage protection	12Vin	3.5		VDC
	24Vin	6.5		VDC
	48Vin	15.5		VDC
On/Off Control	ON – open or logic high, positive logic	>2.7	12	VDC
	OFF – grounded or logic low, positive logic	>0	1.2	VDC
	Control pin current, positive logic	6	10	mA

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA, H30 models	3000		VDC
	60 sec, leakage ≤ 1mA, others	1600		VDC
Resistance	500VDC	>1000		MΩ
Capacitance	100KHz, 0.1V	1000		pF

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5~100% load, main output	±1	±3	%
	5~100% load, other output	±3	±5	%
Line regulation	Full load, main output	±0.5	±1.0	%
	Full load, other output	±1.0	±2.0	%
Load regulation	5~100% load	±1.0	±2.0	%
	0~100% load	±2.0	±4.0	%
Transient response deviation	25% load step, 3.3/5Vout models	±5	±8	%
	25% load step, others	±3	±5	%
Transient recovery time	25% load step	500	3000	μS
Ripple & Noise*	20MHz bandwidth, 5~100% load	80	150	mV p-p

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	300		KHz
Over current protection		180		% Iout
Short circuit protection	Continuous, auto-recovery			
Operating temperature		-40 to +105		°C
Storage temperature		-55 to +125		°C
Temperature coefficient	Full load		±0.03	%/°C
Lead Temperature	1.5mm from case for 10 seconds		300	°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Case material	Plastic (UL94V-0)			
Vibration	10-150Hz, 5G, 0.75mm along X, Y and Z			
Weight		4.5		g
Dimensions (L x W x H)	0.87 x 0.37 x 0.47 inches (22.00 x 9.50 x 12.00 mm)			
MTBF	1 000 000 hrs (MIL-HDBK -217F, t _a =+25°C) / Full Load			

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

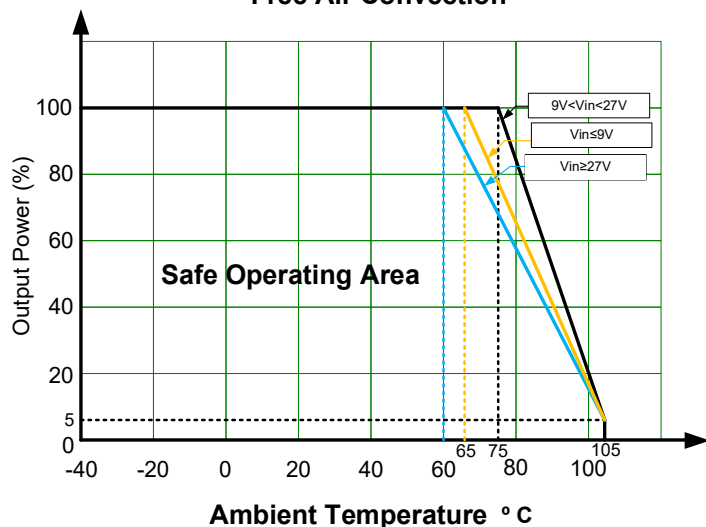
Agency Approvals	UL62368-1 models marked with * only		
	Designed to meet UL/EN/IEC 62368-1		
Standards	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with EMC recommended circuit	
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4kV, Criteria B	
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A	
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ±2kV with EMC recommended circuit, Criteria B	
	Surge Immunity	IEC/EN 61000-4-5, L-L ±2kV with EMC recommended circuit, Criteria B	
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 3 Vr.m.s, Criteria A	

Derating



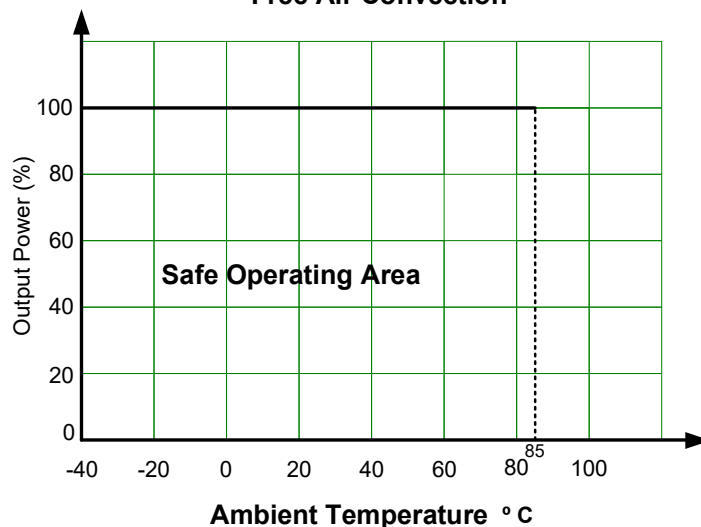
12/24Vin

Free Air Convection

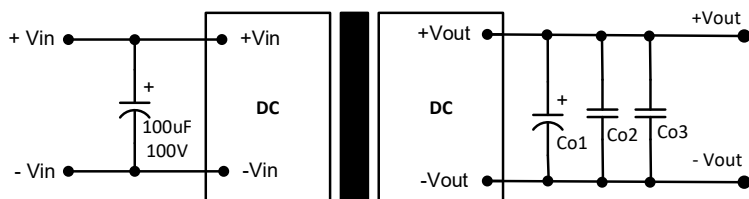


48Vin

Free Air Convection



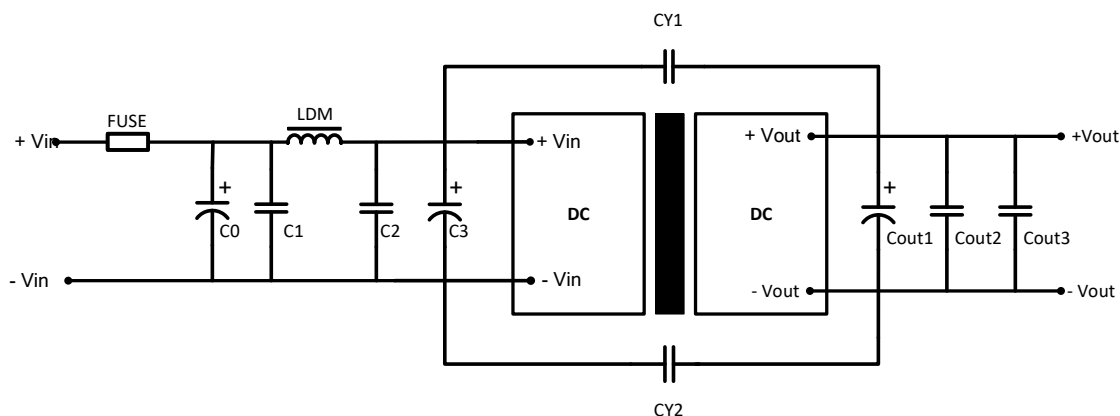
Typical application circuit



Vout	Co1	Co2	Co3
3.3, 5, 6V	100uF, 16V	10uF, 50V	0.1uF, 16V
9, 12, 15V	100uF, 25V	10uF, 50V	0.1uF, 25V
18, 24, 28V	100uF, 50V	10uF, 50V	0.1uF, 50V

For dual output models, the recommended output values apply to each output.

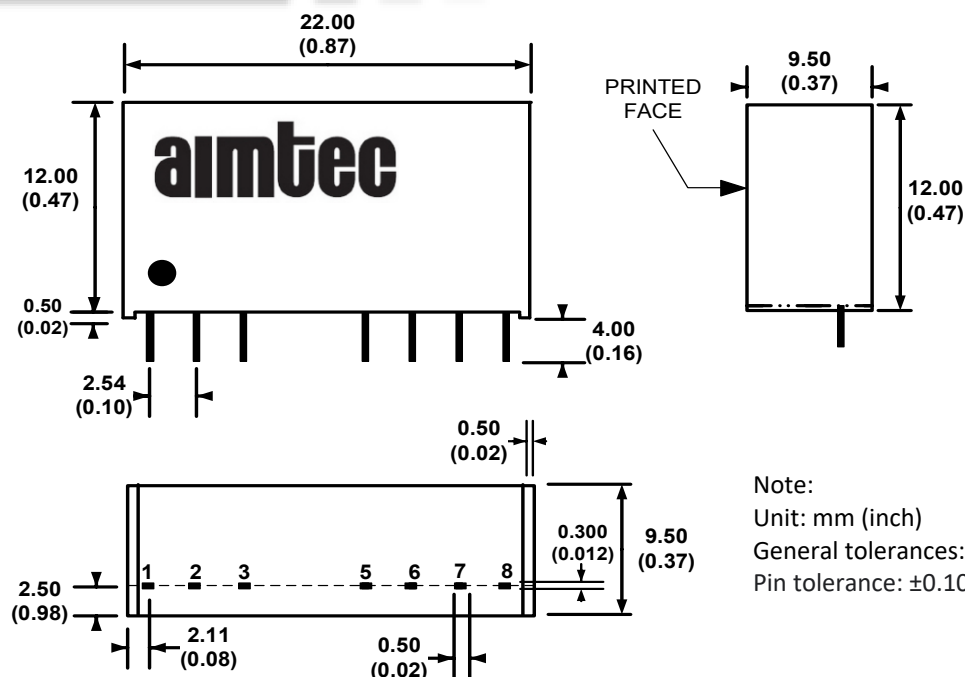
EMC recommended circuit



Component	12Vin	24Vin	48Vin
C0, C3	680μF, 25V	330μF, 50V	330μF, 100V
C1, C2	10μF, 50V	10μF, 50V	10μF, 100V
Co1, Co2, Co3	Refer to Typical Application Circuit		
LDM	12μH	12μH	12μH
CY1, CY2 (1600VDC models)	2.2nF, 2kV	2.2nF, 2kV	2.2nF, 2kV
CY1, CY2 (3000VDC models)	2.2nF, 3kV	2.2nF, 3kV	2.2nF, 3kV

FUSE : Choose according to actual input current

Dimensions



Pin Out Specifications		
Pin	Single output	Dual output
1	-V Input	-V Input
2	+V Input	+V Input
3	Ctrl-Control input (can be left open)	Ctrl-Control input (can be left open)
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	N.C.	-V Output

Note:

Unit: mm (inch)

General tolerances: ± 0.25 (± 0.01)

Pin tolerance: ± 0.10 (± 0.004)

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.