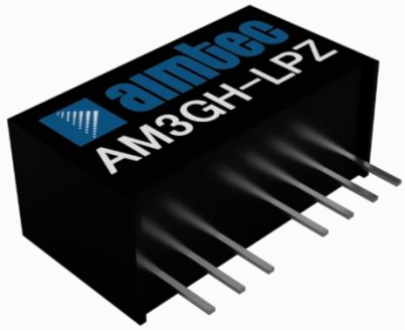
Click to ORDER samples

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 -15 to 24V. This compact SIP8 design will surely benefit your new system design.

This new series offers a great operating temperature range from -40 to 85°C. Also, an isolation of 1500VDC or 3000VDC for improved reliability and system safety as well as a great 1,000,000h MTBF come standard.

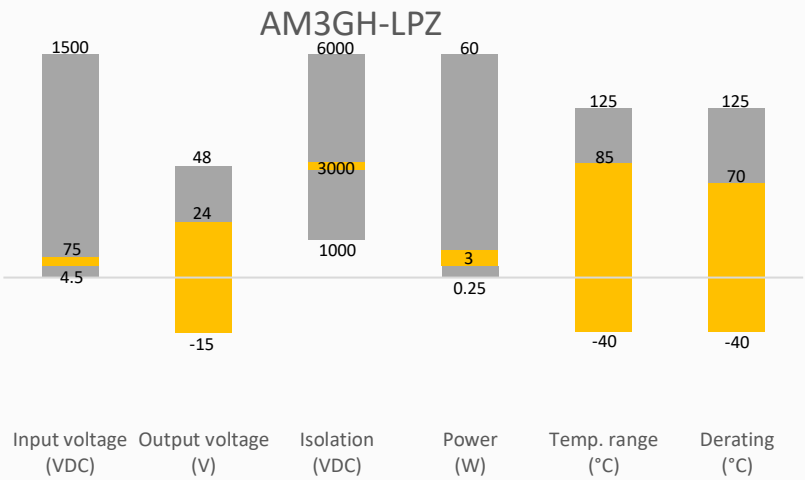
The AM3GH-LPZ is suitable for many applications such as industrial systems, portable equipment, and internet of things.

Features

- High I/O Isolation of 3000VDC
- Input under voltage protection, output over current protection and short circuit protection
- Operating Temp: -40 °C to +85 °C
- Industry standard SIP8 pin-out
- Remote On/Off
- Regulated output

RoHS 3yr Warranty CE cULus

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Industrial

Portable Equipment

IoT

Downloaded from Arrow.com.

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Max/Min (mA)	Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Typ. (%)
AM3GH-1203SLPZ*	12 (4.5-18)	3.3	700/0	1500	1800	74
AM3GH-1205SLPZ*	12 (4.5-18)	5	600/0	1500	2200	78
AM3GH-1212SLPZ*	12 (4.5-18)	12	250/0	1500	680	80
AM3GH-1215SLPZ*	12 (4.5-18)	15	200/0	1500	470	81
AM3GH-2403SLPZ*	24 (9-36)	3.3	700/0	1500	1800	75
AM3GH-2405SLPZ*	24 (9-36)	5	600/0	1500	2200	80
AM3GH-2409SLPZ*	24 (9-36)	9	333/0	1500	1000	81
AM3GH-2412SLPZ*	24 (9-36)	12	250/0	1500	680	81
AM3GH-2415SLPZ*	24 (9-36)	15	200/0	1500	470	82
AM3GH-2424SLPZ*	24 (9-36)	24	125/0	1500	330	82
AM3GH-4803SLPZ	48 (18-75)	3.3	700/0	1500	1800	74
AM3GH-4805SLPZ	48 (18-75)	5	600/0	1500	2200	79
AM3GH-4812SLPZ	48 (18-75)	12	250/0	1500	680	81
AM3GH-4815SLPZ	48 (18-75)	15	200/0	1500	470	82
AM3GH-4824SLPZ	48 (18-75)	24	125/0	1500	330	82
AM3GH-1203SH30LPZ*	12 (4.5-18)	3.3	700/0	1500	1800	75
AM3GH-1205SH30LPZ*	12 (4.5-18)	5	600/0	3000	2200	78
AM3GH-1212SH30LPZ*	12 (4.5-18)	12	250/0	3000	680	80
AM3GH-1215SH30LPZ*	12 (4.5-18)	15	200/0	3000	470	81
AM3GH-2403SH30LPZ*	24 (9-36)	3.3	700/0	3000	1800	75
AM3GH-2405SH30LPZ*	24 (9-36)	5	600/0	3000	2200	80
AM3GH-2409SH30LPZ*	24 (9-36)	9	333/0	3000	1000	81
AM3GH-2412SH30LPZ*	24 (9-36)	12	250/0	3000	680	81
AM3GH-2415SH30LPZ*	24 (9-36)	15	200/0	3000	470	82
AM3GH-2424SH30LPZ*	24 (9-36)	24	125/0	3000	330	82
AM3GH-4803SH30LPZ	48 (18-75)	3.3	700/0	3000	1800	74
AM3GH-4805SH30LPZ	48 (18-75)	5	600/0	3000	2200	79
AM3GH-4812SH30LPZ	48 (18-75)	12	250/0	3000	680	81
AM3GH-4815SH30LPZ	48 (18-75)	15	200/0	3000	470	82
AM3GH-4824SH30LPZ	48 (18-75)	24	125/0	3000	330	82

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Max/Min (mA)	Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Typ. (%)
AM3GH-1205DLPZ	12 (4.5-18)	±5	±300/0	1500	±1000	80
AM3GH-1212DLPZ	12 (4.5-18)	±12	±125/0	1500	±330	80
AM3GH-1215DLPZ	12 (4.5-18)	±15	±100/0	1500	±220	80
AM3GH-2405DLPZ	24 (9-36)	±5	±300/0	1500	±1000	79
AM3GH-2412DLPZ	24 (9-36)	±12	±125/0	1500	±330	82
AM3GH-2415DLPZ	24 (9-36)	±15	±100/0	1500	±220	82
AM3GH-4805DLPZ	48 (18-75)	±5	±300/0	1500	±1000	79
AM3GH-4812DLPZ	48 (18-75)	±12	±125/0	1500	±330	80

Downloaded from Arrow.com.

AM3GH-4815DLPZ	48 (18-75)	±15	±100/0	1500	±220	80
AM3GH-1205DH30LPZ	12 (4.5-18)	±5	±300/0	3000	±1000	80
AM3GH-1212DH30LPZ	12 (4.5-18)	±12	±125/0	3000	±330	80
AM3GH-1215DH30LPZ	12 (4.5-18)	±15	±100/0	3000	±220	80
AM3GH-2405DH30LPZ	24 (9-36)	±5	±300/0	3000	±1000	79
AM3GH-2412DH30LPZ	24 (9-36)	±12	±125/0	3000	±330	82
AM3GH-2415DH30LPZ	24 (9-36)	±15	±100/0	3000	±220	82
AM3GH-4805DH30LPZ	48 (18-75)	±5	±300/0	3000	±1000	79
AM3GH-4812DH30LPZ	48 (18-75)	±12	±125/0	3000	±330	80
AM3GH-4815DH30LPZ	48 (18-75)	±15	±100/0	3000	±220	80

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input current	12Vin	306		mA
	24Vin	140		mA
	48Vin	82		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	60		mA
	24Vin	25		mA
	48Vin	15		mA
Input Reflected Ripple Current		15		mA
Start-up voltage	12Vin		4.5	VDC
	24Vin		9	VDC
	48Vin		18	VDC
Under voltage protection	12Vin		4	VDC
	24Vin		8	VDC
	48Vin		16	VDC
On/Off Control	ON – open or logic high, positive logic	>3.5	12	VDC
	OFF – grounded or logic low, positive logic	>0	0.7	VDC
	Control pin current, positive logic	5	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	1500		VDC
Resistance	500VDC	>1000		MΩ
Capacitance	100KHz, 0.1V	1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	5 - 100% load, 3.3Vout and 5Vout model	±2	±5	%
	5 - 100% load, others	±1	±3	%
Line Regulation	Full load	±0.3	±0.5	%

Downloaded from Arrow.com.

Load regulation	5 - 100% load	±0.5	±1	%
Temperature coefficient		±0.02	±0.03	%/°C
Transient Recovery Time	25% load step	300	500	µS
Transient Response Deviation	25% load step	±3	±5	%
Ripple & Noise*		50	150	mV p-p

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.
** Operating with less than 5% of rated load will not cause damage to the converters, but the performances data may not fall into the specifications, and stable operating is not assured.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load, 1500VDC models	330		KHz
	100% load, 3000VDC models	300		KHz
Over current protection		140		% Iout
Short circuit protection	Continuous, auto-recovery			
Operating temperature		-40 to +85		°C
Storage temperature		-55 to +125		°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=+25°C) / Full Load			

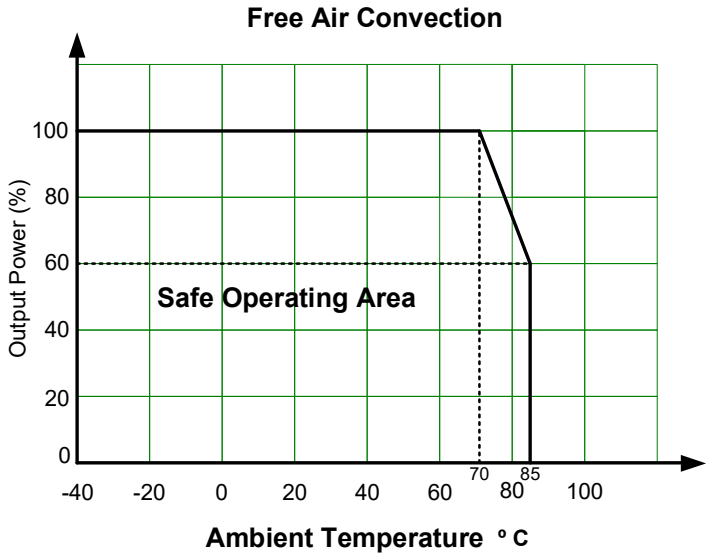
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

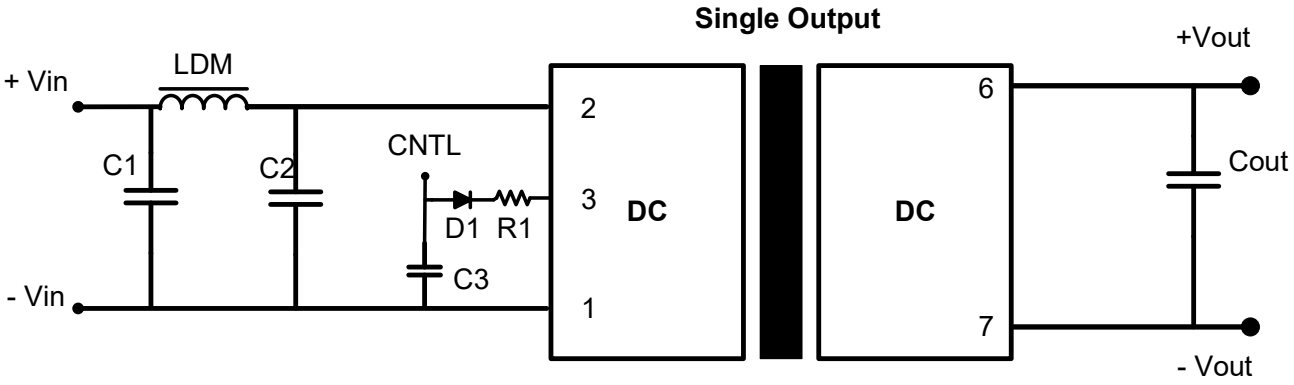
Parameters		
Agency Approvals	UL62368-1 models marked with * only	
Standards	Designed to meet UL/EN/IEC 62368-1	
	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with EMI recommended circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4KVperf. Criteria B, 1500VDC models IEC/EN 61000-4-2, Contact ±6KVperf. Criteria B, 3000VDC models
	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 recommended EMC circuit, Criteria B
	Surge Immunity	IEC/EN 61000-4-5, L-L ±2KV with recommended EMC circuit, Criteria B
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 3 Vr.m.s, Criteria A

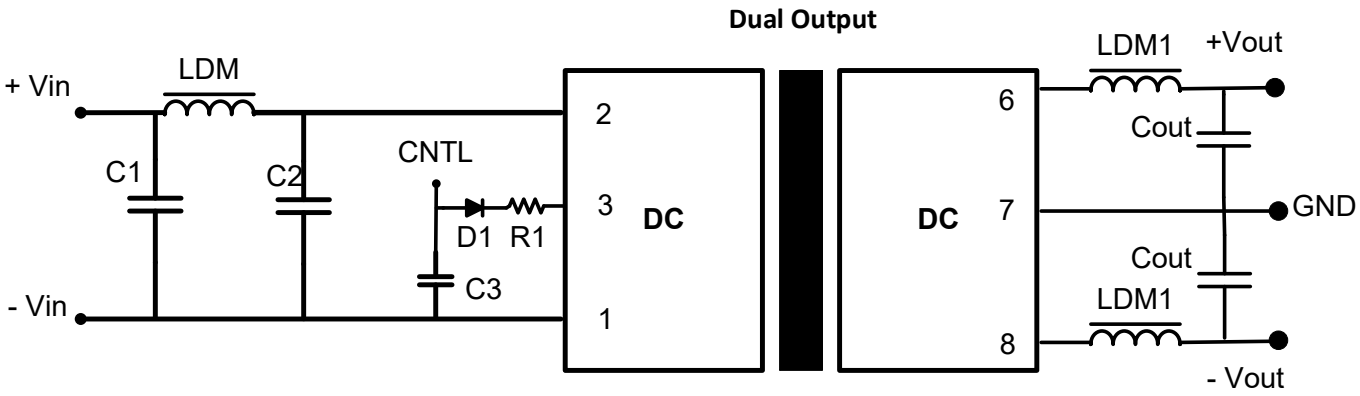
Downloaded from Arrow.com.

Derating



Typical application circuit

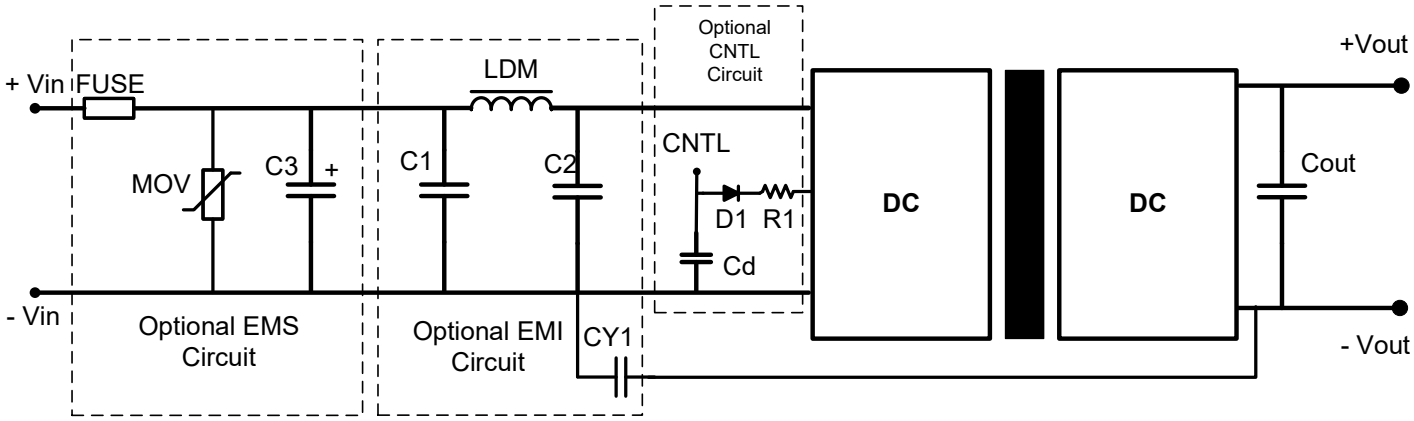




Model	C1	C2	Cout	C3	LDM	LDM1	D1	R1
12Vin	100µF	47µF	100µF	47nF/100V	47µH~12µH	2.2µH~10µH	60V, 1A	See formula
24Vin	10µF	1µF	100µF	47nF/100V	47µH~12µH	2.2µH~10µH	60V, 1A	See formula
48Vin	10µF	1µF	100µF	47nF/100V	47µH~12µH	2.2µH~10µH	60V, 1A	See formula

Downloaded from Arrow.com.

EMI recommended circuit

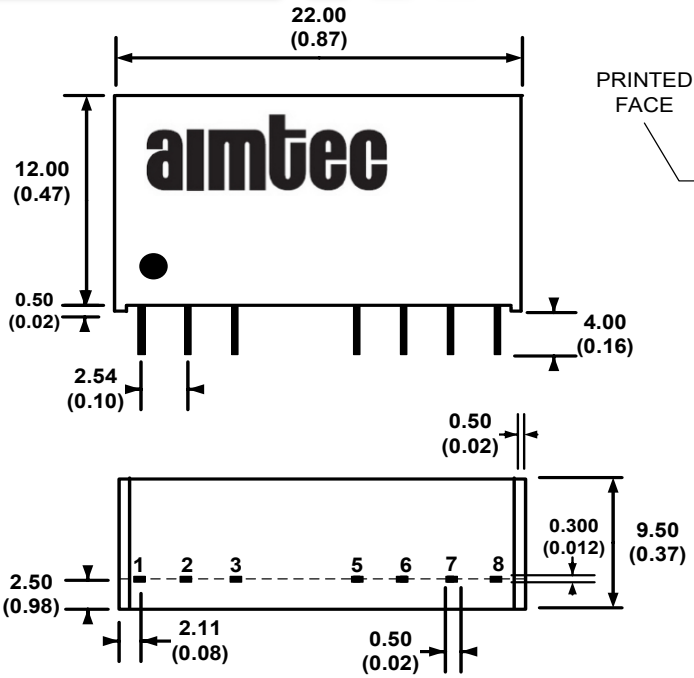


Model	C3	C1, C2	Cd	CY1 (1500VDC models)	CY1 (3000VDC models)	D1	LDM	MOV	R1
12Vin	1000µF, 25V	4.7µF, 50V	47nF/100V	1nF/2000V	1nF/4000V	60V, 1A	12µH	14D390K	See formula
24Vin	330µF, 50V	4.7µF, 50V	47nF/100V	1nF/2000V	1nF/4000V	60V, 1A	12µH	14D560K	See formula
48Vin	330µF, 100V	4.7µF, 100V	47nF/100V	1nF/2000V	1nF/4000V	60V, 1A	12µH	14D101K	See formula

Note: Fuse is user selectable, slow blow type
R1 = ((Vcd – Vd1 – 1.0) / Icntl) - 300

Downloaded from Arrow.com.

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.

Downloaded from Arrow.com.