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AM1GSW-LPZ

SIP8 Package

The AM1GSW-LPZ is a 1W 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 15V. 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 3000VDC for improved reliability and system safety as well as a great 1,000,000h MTBF come standard.

The AM1GSW-LPZ is suitable for many applications such as industrial systems, portable equipment, and internet of things.

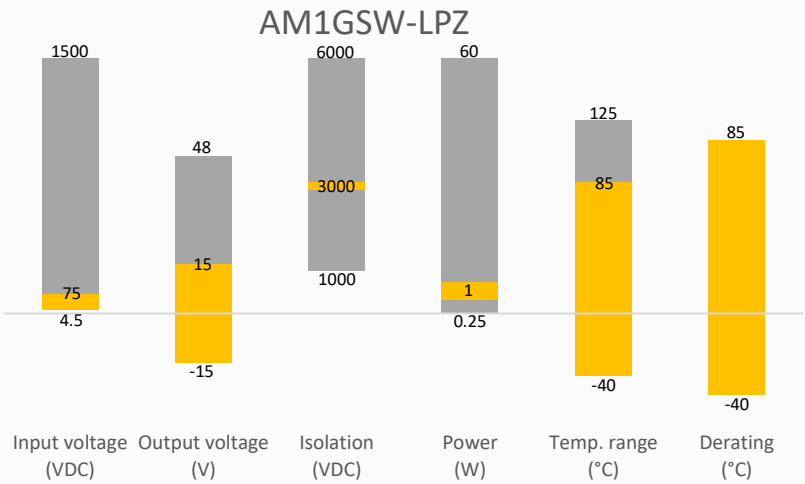
Features

- 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
- Regulated output

RoHS

3yr Warranty

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)	Input Current Full/No load Typ. (mA)	Output Voltage (VDC)	Output Current Max/Min (mA)	Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Typ. (%)
AM1GSW-1203SH30LPZ	12 (4.5-18)	281/40	3.3	303/16	3000	2700	74
AM1GSW-1205SH30LPZ	12 (4.5-18)	281/40	5	200/10	3000	2200	78
AM1GSW-1212SH30LPZ	12 (4.5-18)	281/40	12	83/5	3000	680	80
AM1GSW-1215SH30LPZ	12 (4.5-18)	281/40	15	67/4	3000	470	80
AM1GSW-2403SH30LPZ	24 (9-36)	111/15	3.3	303/16	3000	2700	75
AM1GSW-2405SH30LPZ	24 (9-36)	111/15	5	200/10	3000	2200	80
AM1GSW-2412SH30LPZ	24 (9-36)	111/15	12	83/5	3000	680	81
AM1GSW-2415SH30LPZ	24 (9-36)	111/15	15	67/4	3000	470	81
AM1GSW-4803SH30LPZ	48 (18-75)	55/6	3.3	303/16	3000	2700	74
AM1GSW-4805SH30LPZ	48 (18-75)	55/6	5	200/10	3000	2200	79
AM1GSW-4812SH30LPZ	48 (18-75)	55/6	12	83/5	3000	680	79
AM1GSW-4815SH30LPZ	48 (18-75)	55/6	15	67/4	3000	470	79

Dual Output							
Model	Input Voltage (VDC)	Input Current Full/No load Typ. (mA)	Output Voltage (VDC)	Output Current Max/Min (mA)	Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Typ. (%)
AM1GSW-1205DH30LPZ	12 (4.5-18)	281/40	±5	±100/5	3000	±1000	80
AM1GSW-1212DH30LPZ	12 (4.5-18)	281/40	±12	±42/3	3000	±470	80
AM1GSW-1215DH30LPZ	12 (4.5-18)	281/40	±15	±33/2	3000	±330	80
AM1GSW-2405DH30LPZ	24 (9-36)	111/15	±5	±100/5	3000	±1000	79
AM1GSW-2412DH30LPZ	24 (9-36)	111/15	±12	±42/3	3000	±470	80
AM1GSW-2415DH30LPZ	24 (9-36)	111/15	±15	±33/2	3000	±330	81
AM1GSW-4805DH30LPZ	48 (18-75)	55/6	±5	±100/5	3000	±1000	79
AM1GSW-4812DH30LPZ	48 (18-75)	55/6	±12	±42/3	3000	±470	79
AM1GSW-4815DH30LPZ	48 (18-75)	55/6	±15	±33/2	3000	±330	80

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Maximum rating	1 Sec(max), 12Vin models	> -0.7	25	VDC
	1 Sec (max), 24Vin models	> -0.7	50	VDC
	1 Sec (max), 48Vin models	> -0.7	100	VDC
Under voltage protection	12Vin models	--	4	VDC
	24Vin models	--	8	VDC
	48Vin models	--	16	VDC
Input Reflected Ripple Current		15	--	mA
Remote ON/OFF control	ON	Pin open or logic high (3.5V ~ 12V)		
	OFF	Pin grounded or logic low (0V ~ 0.7V)		
	Ctrl pin current	5	10	mA

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 3.3V/5V output	±2	±5	%
	Full load, others	±1	±3	%
Line regulation	Full load, main output	±0.2	±0.5	%
	Full load, other output	±0.5	±1.0	%
Load regulation	5~100% load	±0.5	±1.0	%
Transient response deviation	25% load step	±2.5	±5	%
Transient recovery time	25% load step	500	3000	µS
Ripple & Noise*	20MHz bandwidth	50	150	mV p-p

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

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	3000	--	VDC
Resistance I/O	500VDC	>1000	--	MΩ
Capacitance I/O	100KHz, 0.1V	25	--	pF

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	250	--	KHz
Over current protection	Continuous, auto-recovery	>110	--	% Iout
Short circuit protection	Continuous, auto-recovery			
Operating temperature	No derating	-40 to +85	--	°C
Storage temperature		-55 to +125	--	°C
Temperature coefficient	Full load	0.02	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=+25°C) / Full Load			

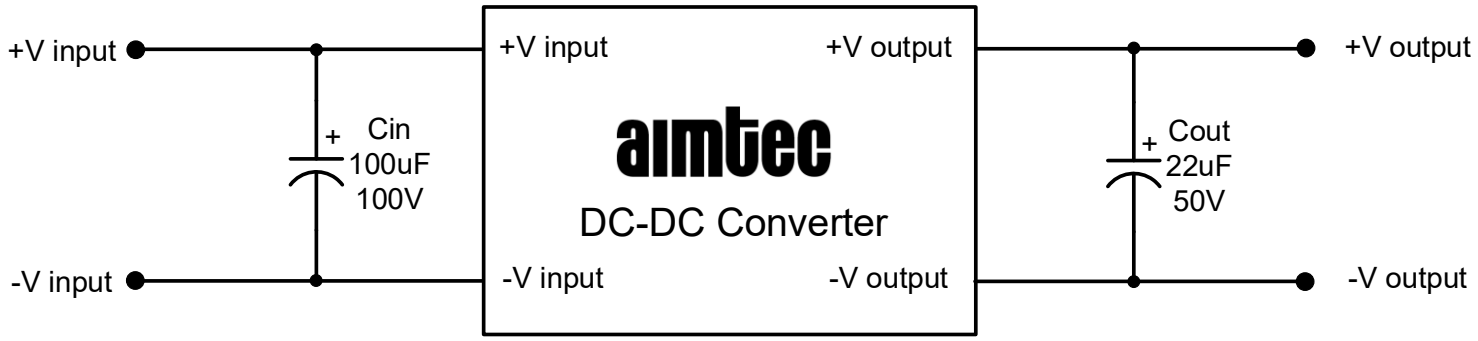
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

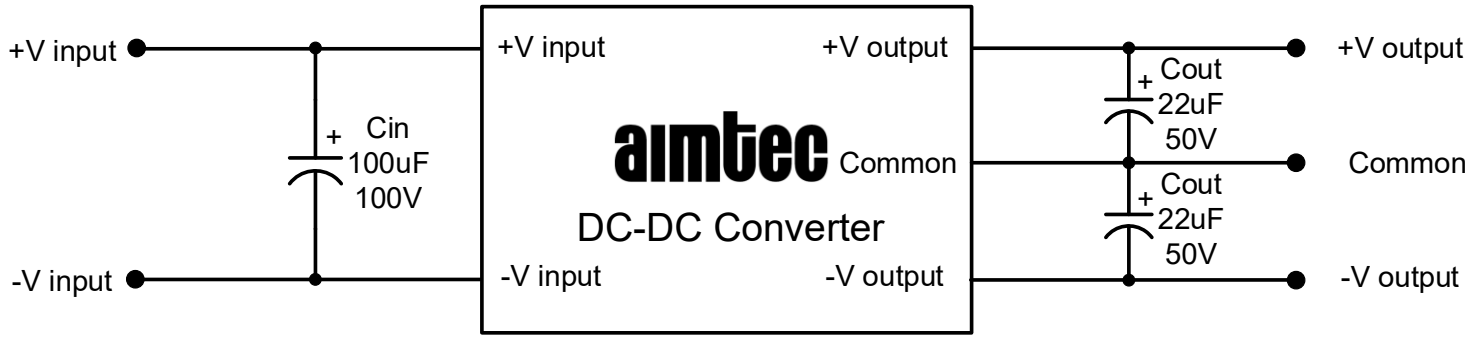
Parameters		
Standards	Designed to meet IEC/EN/UL 62368-1	
	EMC - Conducted and radiated emission	CISPR32/EN55032 Class B with EMC recommended circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±6KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±2KV, Criteria B with typical application circuit
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, Criteria B with typical application circuit
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 3Vrms, Criteria A

Typical application circuit

Single output

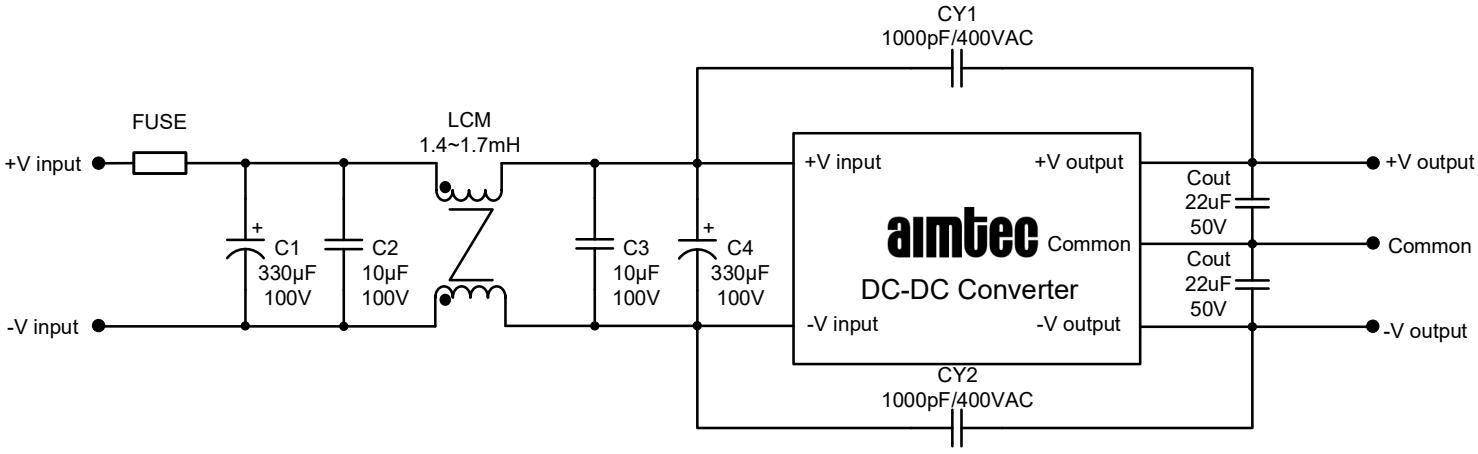


Dual output



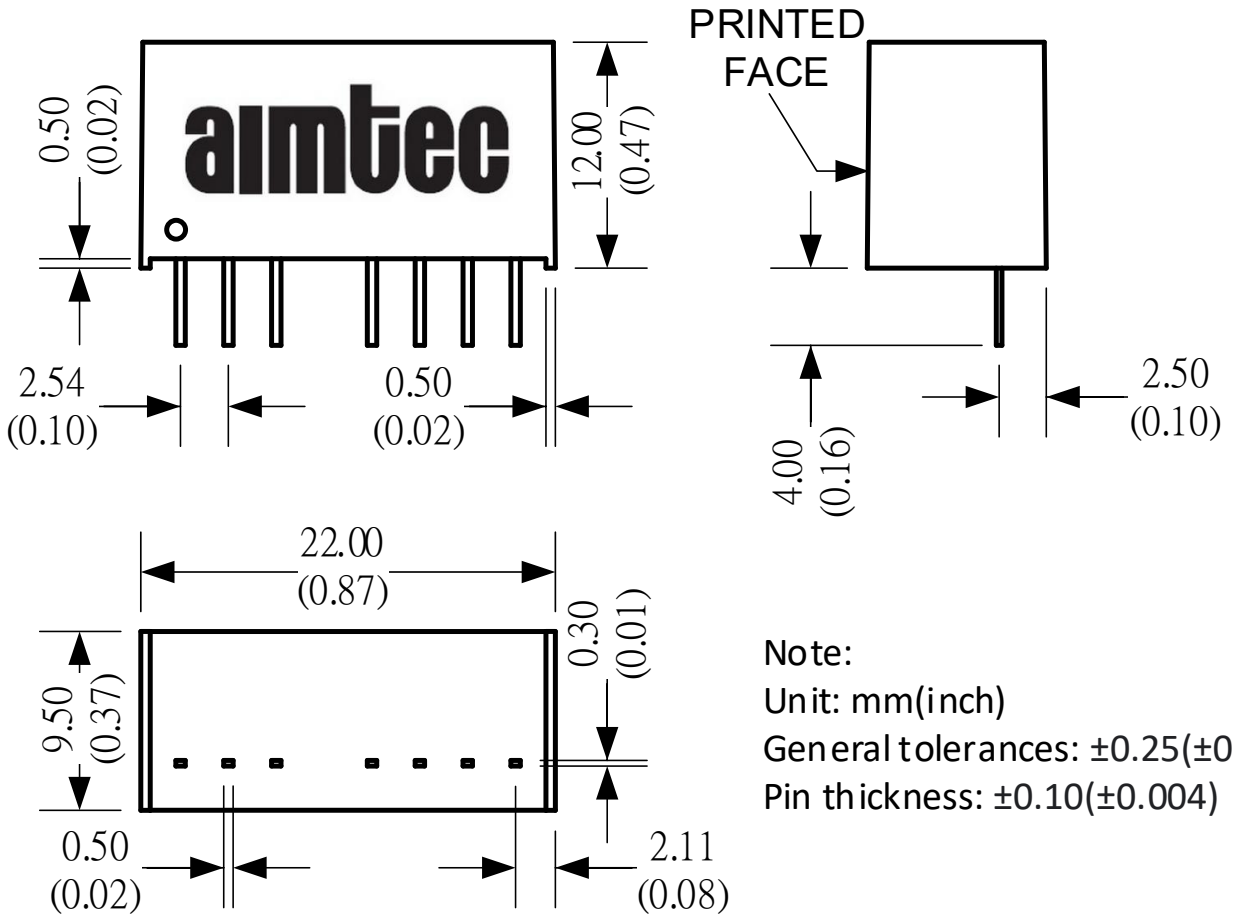
EMC recommended circuit

The recommended circuits are the same for single and dual output models



Fuse : Choose according to actual input current.

Dimensions



Note:
Unit: mm(inch)
General tolerances: ±0.25(±0.01)
Pin thickness: ±0.10(±0.004)

Pin Out Specifications		
Pin	Single output	Dual output
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote ON/OFF	Remote ON/OFF
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	N.C.	-V Output