AM6GH-NZ

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SIP8

Aimtec adds the AM6GH-NZ 6W series to its SIP8 DC/DC converters family. With the 6W new single output series, Aimtec provides better coverage of the SIP8 package product up to 10W.
The AM6GH-NZ provides a 4:1 input voltage range and comes standard with single regulated output voltages of 3.3, 5, 9, 12, 15 and 24VDC & dual regulated output voltages of ± 5, ± 9, ± 12, ± 15 and ± 24VDC with I/O isolation of 1600VDC.
Thanks to its wide -40°C to +105°C(single output models) operating temperature range, the AM6GH-NZ is suitable for applications such as industrial control, grid power, instrumentation and telecommunication. In addition to meeting EN62368 certification, protections for input under-voltage, output short circuit, over-current are also included, increasing the overall safety of your new system design.

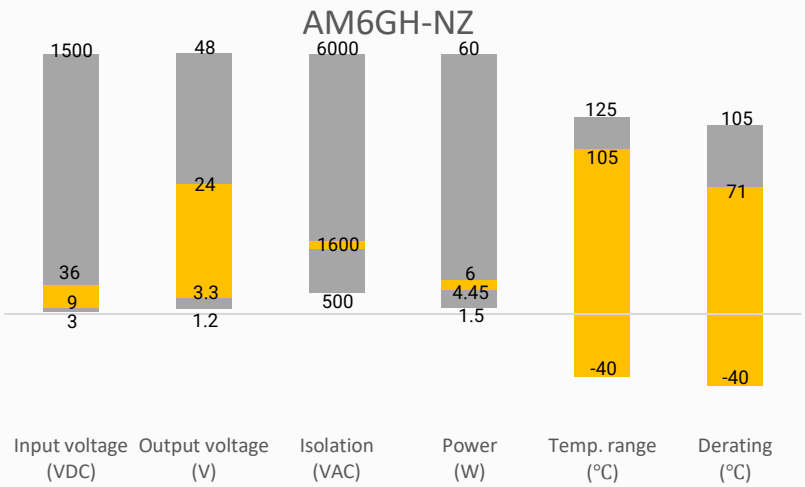
Features

- Wide 4:1 Input Range: 9VDC – 36VDC
- Operating Temp: -40 °C to +105 °C
- Low ripple & noise, up to 150mV(p-p) max.
- Efficiency up to 87%
- Output short circuit, over current protection, Input under-voltage protection
- Regulated Output

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Instrumentation

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (µF)	Efficiency (%) Full Load
			No Load	Full Load			
AM6GH-2403SNZ	24 (9 ~ 36)	3.3	12	245	1350	1800	78
AM6GH-2405SNZ	24 (9 ~ 36)	5	12	313	1200	1000	82
AM6GH-2409SNZ	24 (9 ~ 36)	9	16	313	667	470	84
AM6GH-2412SNZ	24 (9 ~ 36)	12	16	313	500	470	86
AM6GH-2415SNZ	24 (9 ~ 36)	15	16	313	400	220	87
AM6GH-2424SNZ	24 (9 ~ 36)	24	16	313	250	100	85

Dual Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (µF)	Efficiency (%) Full Load
			No Load	Full Load			
AM6GH-2405DNZ	24 (9 ~ 36)	± 5	16	320	± 600	± 470	80
AM6GH-2409DNZ	24 (9 ~ 36)	± 9	16	309	± 333	± 220	83
AM6GH-2412DNZ	24 (9 ~ 36)	± 12	16	309	± 250	± 120	83
AM6GH-2415DNZ	24 (9 ~ 36)	± 15	16	309	± 200	± 100	83
AM6GH-2424DNZ	24 (9 ~ 36)	± 24	16	313	± 125	± 68	82

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table			VDC
Filter	Capacitance filter			
Absolute maximum rating	1 sec. max		50	VDC
Reflected ripple current		50		mA pk-pk
Start-up voltage			9	VDC
Under voltage protection		6.5		VDC
On/Off ctrl *	ON – Ctrl pin open or pulled high (3.5~12VDC) OFF – Ctrl pin pulled low to GND (0~1.2VDC), idle current 10mA max.			
* The Ctrl pin voltage is referenced to input GND.				

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, 1mA max, Single output	1600		VDC
	60 sec, 1mA max, Dual output	1500		VDC
Resistance	500VDC	≧1000		MΩ
Capacitance	I/O capacitance at 100KHz/0.1V	1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5 ~ 100% load, Single / Dual $V_{out}1$	± 1	± 2	%
	5 ~ 100% load, Dual $V_{out}2$	± 2	± 3	%
Line regulation	Full load, Single / Dual $V_{out}1$	± 0.5	± 1	%
	Full load, Dual $V_{out}2$	± 1	± 1.5	%
Load regulation	5 ~ 100% load, Single / Dual $V_{out}1$	± 0.8	± 1.5	%
	5 ~ 100% load, Dual $V_{out}2$	± 1.2	± 2	%
Cross regulation (Dual output)	25% load step change		± 5	%
Over current protection		110~230, typ. 160		% Iout
Short circuit protection	Continuous, Auto recovery			
Temperature coefficient	Full load		± 0.03	%/°C
Ripple & Noise*	20MHz bandwidth, 5 ~ 100% load, Single output	50	100	mV pk-pk
	20MHz bandwidth, 5 ~ 100% load, Dual output	120	150	mV pk-pk
Transient recovery time	25% load step change	450	500	µS
Transient response deviation	25% load step change, Output 3.3V / 5V / ± 5V	±5	±8	%
	25% load step change, Others	±3	±5	%

* At 0 ~ 5% load, the Single / Dual $V_{out}1$ maximum voltage accuracy is ±3%, the Dual $V_{out}2$ maximum voltage accuracy is ±5%
** Ripple and Noise are measured at 20MHz bandwidth by using a 1µF (M/C) and 22µF (E/C) parallel capacitor and typical input with full load

General Specifications

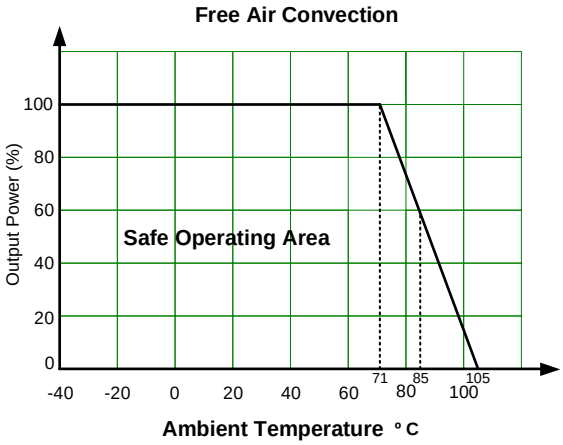
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load. PWM mode	500		KHz
Operating temperature	See derating graph, Single output	-40 to +105		°C
	See derating graph, Dual output	-40 to +85		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm from case 10 sec max		300	°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
Vibration	10-150Hz, 5G, 0.75mm along X,Y and Z			
Weight	PCB mountable model	4.6		g
Dimensions (L x W x H)	PCB mountable model	0.87 x 0.37 x 0.47 inches, 22.00 x 9.50 x 12.00mm		
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			

Safety Specifications

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

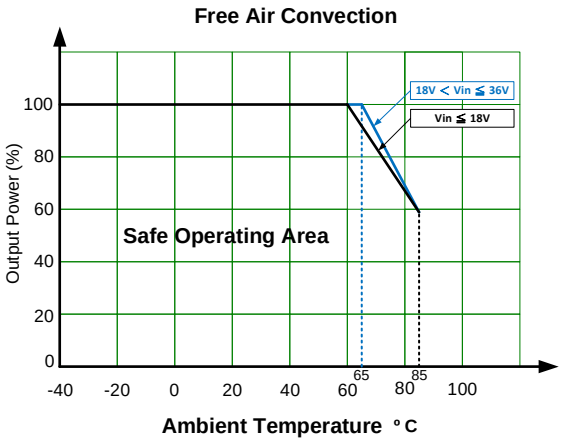
Derating

Single output

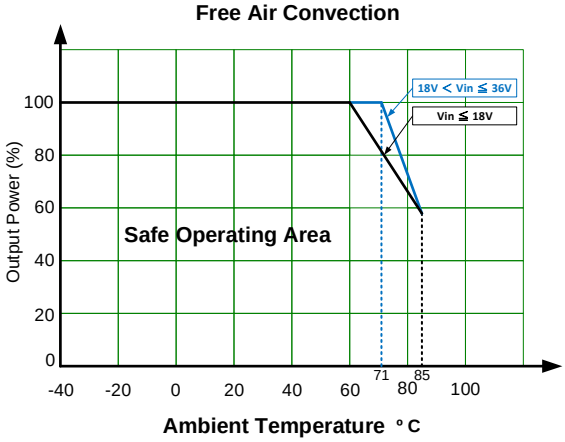


Dual output

5V output

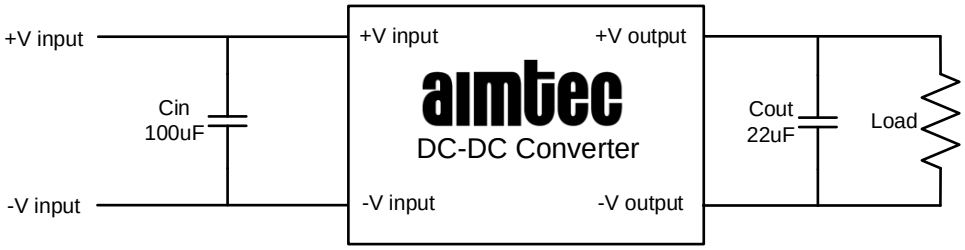


9V / 12V / 15V / 24V output

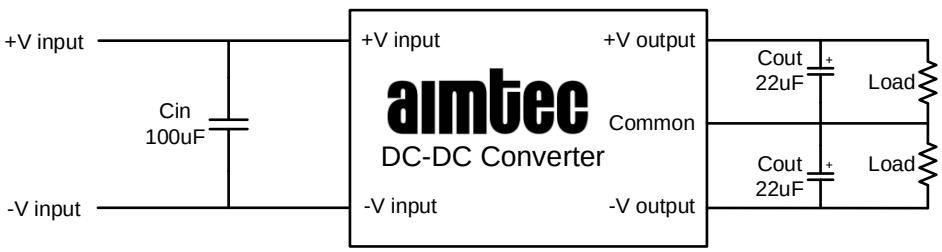


Typical Application Circuit

Single output

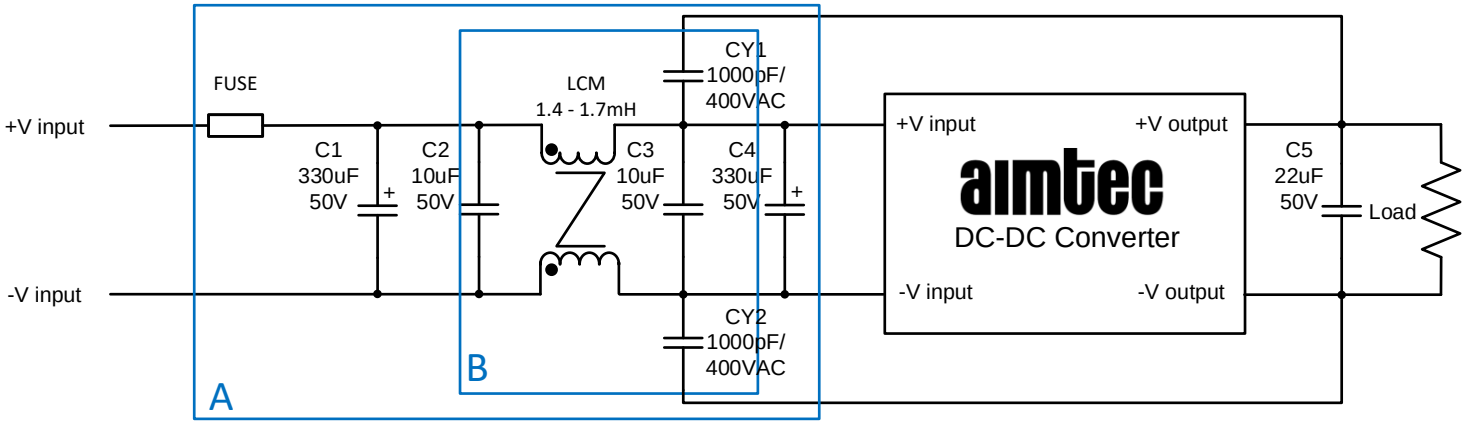


Dual output

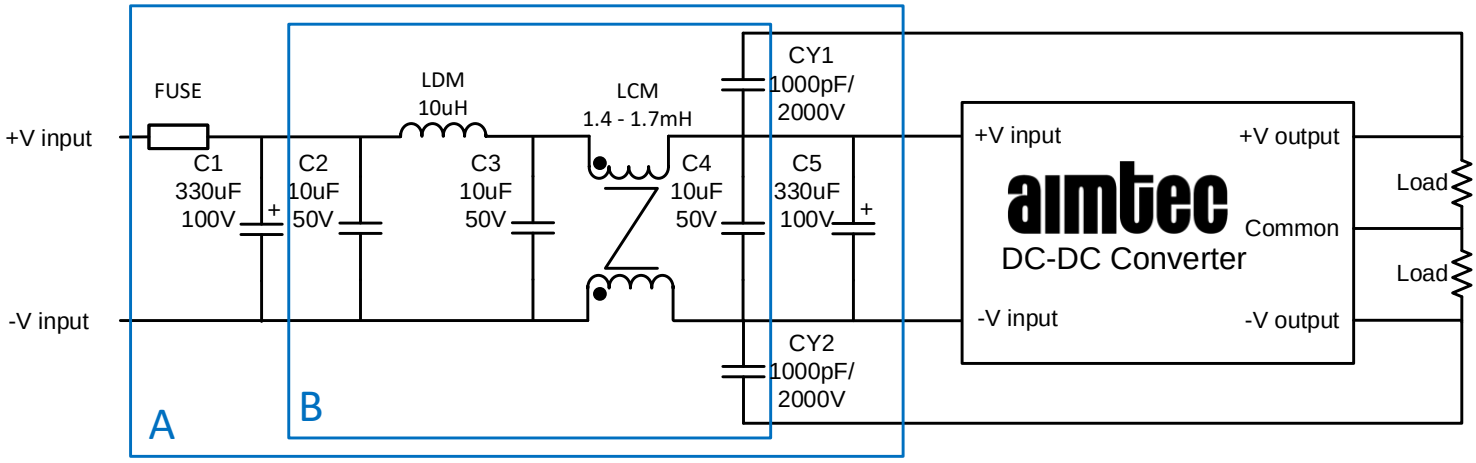


EMC Recommended Circuit

Single output

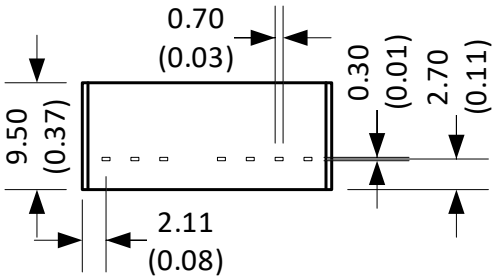


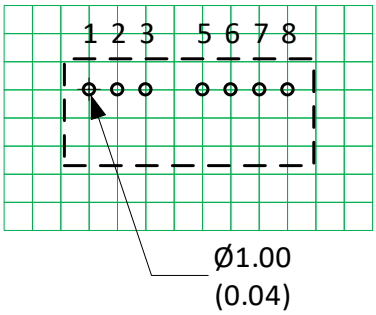
Dual output

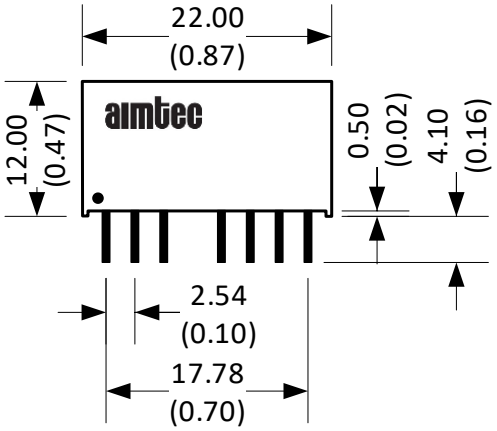


Fuse : Choose according to actual input current.

Dimensions







Note : Grid 2.54*2.54 mm

Notes:
All dimensions are typical in millimeters (inches).
Pin section tolerances : ±0.10 (±0.004)
General tolerance : ±0.50 (±0.02)

Pin Out Specifications		
Pin	**Single**	**Dual**
1	-V Input	-V Input
2	+V Input	+V Input
3	Ctrl	Ctrl
5	NC	NC
6	+V Output	+V Output
7	-V Output	Common
8	NC	-V Output

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