



AM6GH-NZ



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.

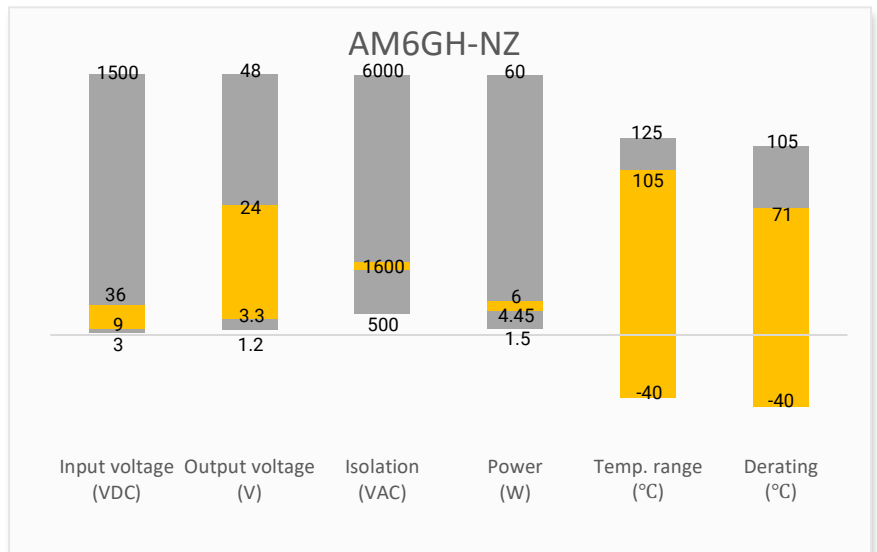
The AM6GH-NZ provides a 4:1 input voltage range and comes standard with single regulated output voltages of 3.3, 5, 9, 12, 15 and 24VDC & dual regulated output voltages of ± 5 , ± 9 , ± 12 , ± 15 and ± 24 VDC with I/O isolation of 1600VDC.

Thanks to its wide -40°C to $+105^{\circ}\text{C}$ (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.

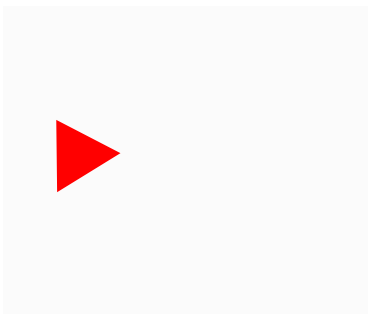
Features

- Wide 4:1 Input Range: 9VDC – 36VDC
- Operating Temp: -40°C to $+105^{\circ}\text{C}$
- 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

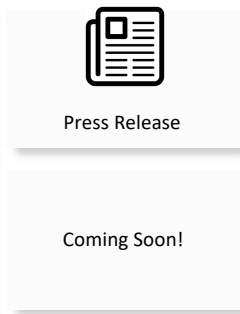
Summary



Training



Product Training Video
(click to open)



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 (μ F)	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 (μ F)	Efficiency (%) Full Load
			No Load	Full Load			
AM6GH-2405DNZ	24 (9 ~ 36)	\pm 5	16	320	\pm 600	\pm 470	80
AM6GH-2409DNZ	24 (9 ~ 36)	\pm 9	16	309	\pm 333	\pm 220	83
AM6GH-2412DNZ	24 (9 ~ 36)	\pm 12	16	309	\pm 250	\pm 120	83
AM6GH-2415DNZ	24 (9 ~ 36)	\pm 15	16	309	\pm 200	\pm 100	83
AM6GH-2424DNZ	24 (9 ~ 36)	\pm 24	16	313	\pm 125	\pm 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	\geq 1000		M Ω
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_{out1}	± 1	± 2	%
	5 ~ 100% load, Dual V_{out2}	± 2	± 3	%
Line regulation	Full load, Single / Dual V_{out1}	± 0.5	± 1	%
	Full load, Dual V_{out2}	± 1	± 1.5	%
Load regulation	5 ~ 100% load, Single / Dual V_{out1}	± 0.8	± 1.5	%
	5 ~ 100% load, Dual V_{out2}	± 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	μ S
Transient response deviation	25% load step change, Output 3.3V / 5V / ± 5 V	± 5	± 8	%
	25% load step change, Others	± 3	± 5	%

* At 0 ~ 5% load, the Single / Dual V_{out1} maximum voltage accuracy is $\pm 3\%$, the Dual V_{out2} maximum voltage accuracy is $\pm 5\%$
** Ripple and Noise are measured at 20MHz bandwidth by using a 1 μ F (M/C) and 22 μ F (E/C) parallel capacitor and typical input with full load

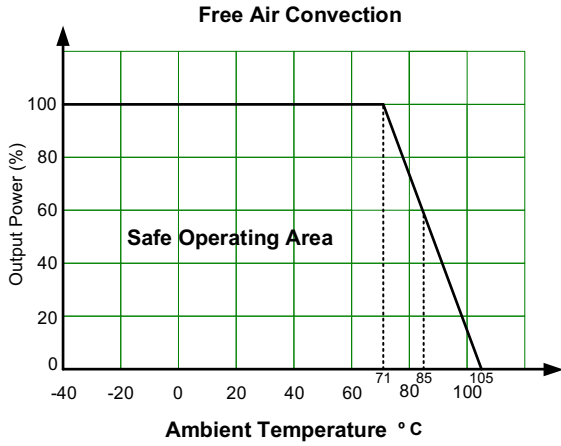
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load. PWM mode	500		KHz
Operating temperature	See derating graph, Single output	-40 to +105		°C
	See derating graph, Dual output	-40 to +85		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm 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, $t=+25^{\circ}$ 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 ± 4 KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ± 2 KV, Criteria B C with recommended circuit A
	Surge Immunity	IEC 61000-4-5 L-L ± 2 KV, Criteria B with EMC recommended circuit A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 3Vr.m.s, Criteria A

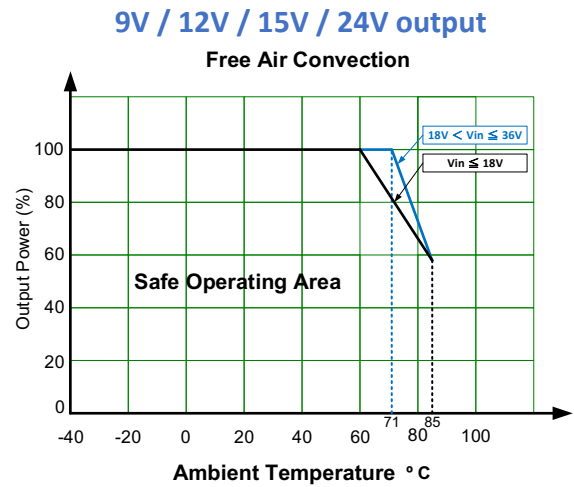
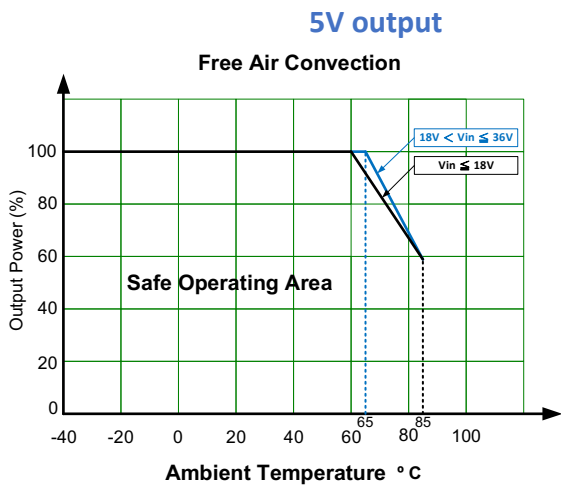
Derating



Single output



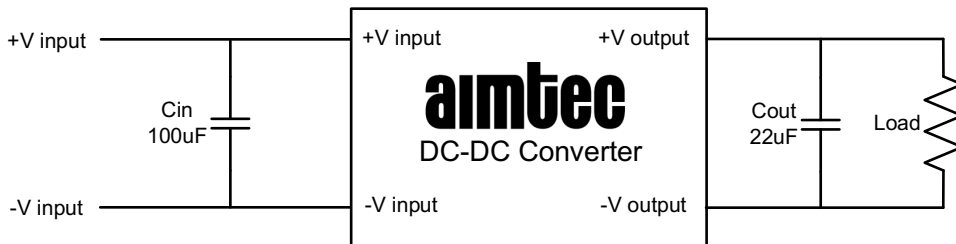
Dual output



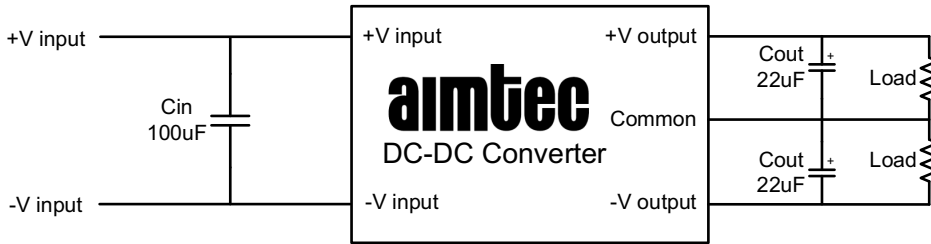
Typical Application Circuit



Single output

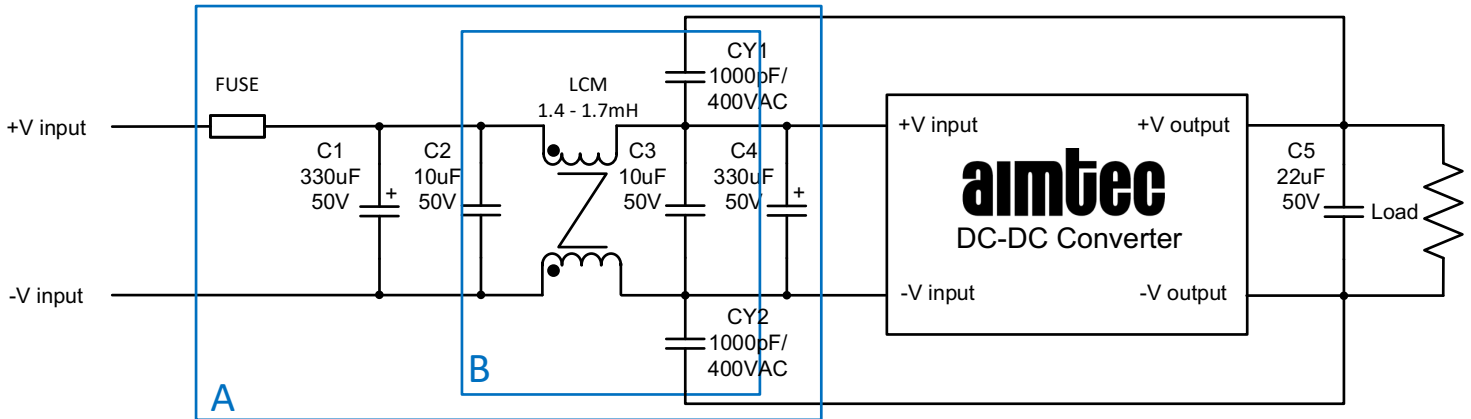


Dual output

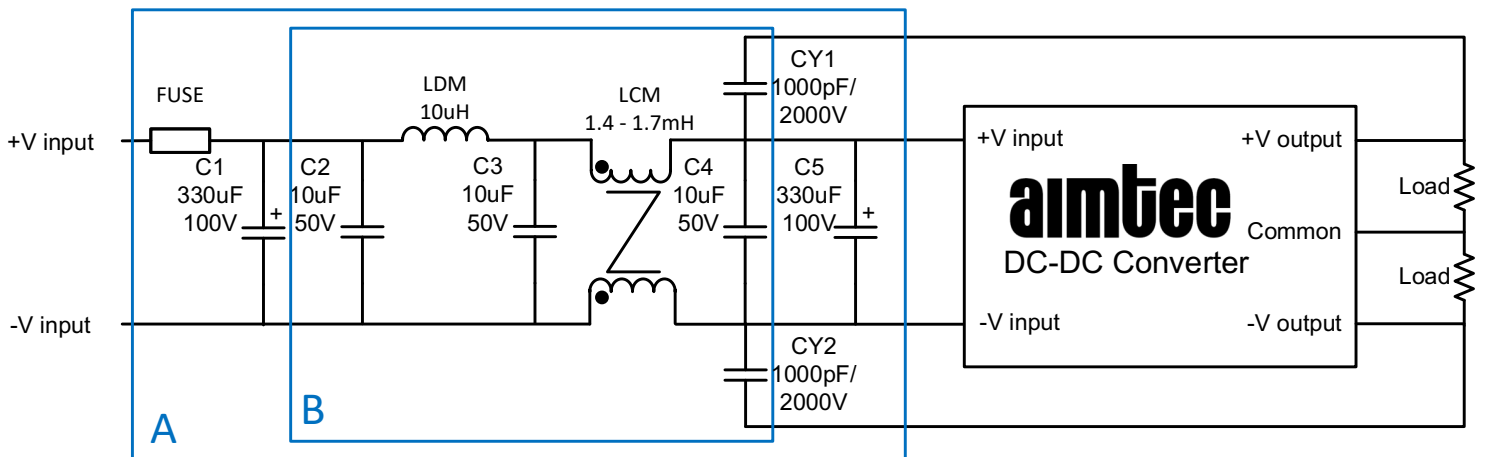


EMC Recommended Circuit

Single output

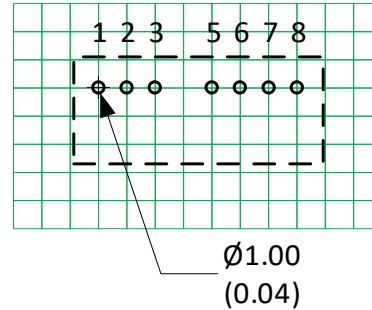
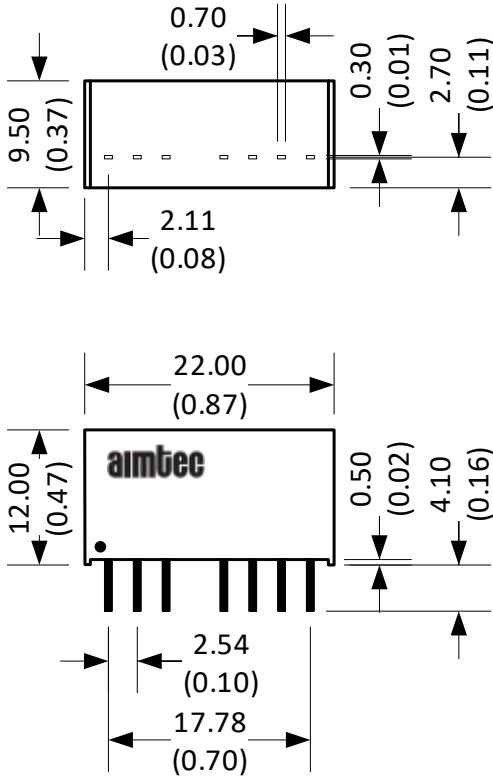


Dual output



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

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.