



AM6G-NZ



Aimtec adds the AM6G-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 AM6G-NZ series provide a 2:1 input voltage range and comes standard with single regulated output voltages of 3.3, 5, 9, 12, 15 and 24VDC with I/O isolation of 1600VDC.

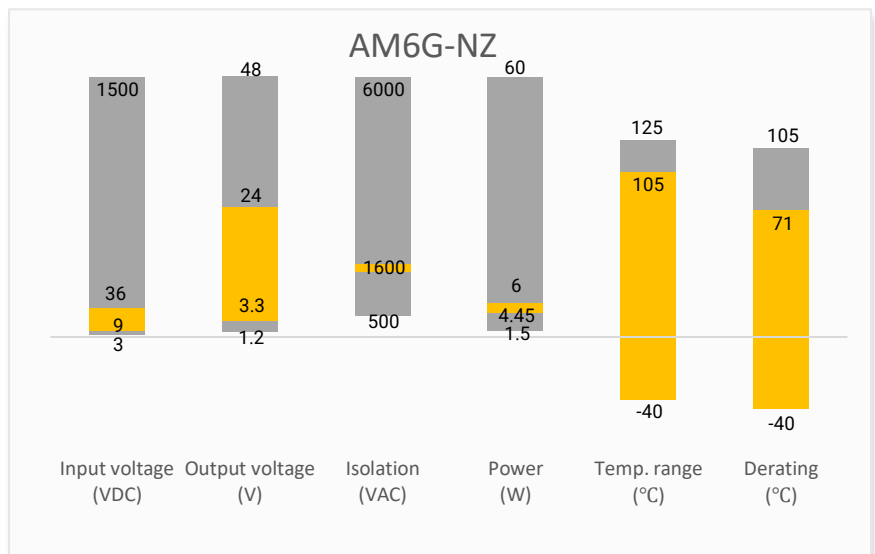
Thanks to its wide -40°C to +105°C operating temperature range, the AM6G-NZ is suitable for applications such as industrial control, grid power, instrumentation and telecommunication. In addition to meeting EN62368 certification, protections for input under-voltage, output short circuit, over-current are also included, increasing the overall safety of your new system design.

Features



- Wide 2:1 Input Range: 9-18VDC & 18-36VDC
- Operating Temp: -40 °C to +105 °C
- Low ripple & noise, up to 50mV(p-p) typ.
- Efficiency up to 87%
- Output short circuit, over current protection, Input under-voltage protection
- Regulated Output

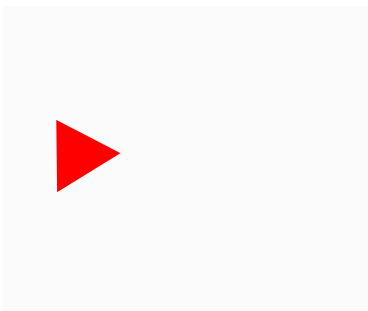
Summary



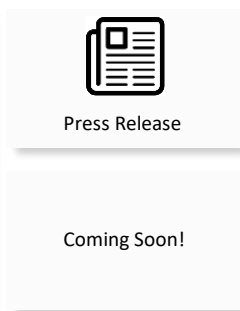
Training



Applications



Product Training Video  
(click to open)



Application Notes



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 (Typ.)
			No Load	Full Load			
AM6G-1203SNZ	12 (9 ~ 18)	3.3	18	502	1350	1800	76
AM6G-1205SNZ	12 (9 ~ 18)	5	18	641	1200	1000	80
AM6G-1209SNZ	12 (9 ~ 18)	9	18	641	667	470	82
AM6G-1212SNZ	12 (9 ~ 18)	12	18	641	500	470	84
AM6G-1215SNZ	12 (9 ~ 18)	15	18	641	400	220	84
AM6G-1224SNZ	12 (9 ~ 18)	24	18	641	250	100	84
AM6G-2403SNZ	24 (18 ~ 36)	3.3	12	245	1350	1800	78
AM6G-2405SNZ	24 (18 ~ 36)	5	12	313	1200	1000	82
AM6G-2409SNZ	24 (18 ~ 36)	9	16	313	667	470	84
AM6G-2412SNZ	24 (18 ~ 36)	12	16	313	500	470	86
AM6G-2415SNZ	24 (18 ~ 36)	15	16	313	400	220	87
AM6G-2424SNZ	24 (18 ~ 36)	24	16	313	250	100	85

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table			VDC
Filter	Capacitance filter			
Absolute maximum rating	1 sec. max	12VDC input models	25	VDC
		24VDC input models	50	VDC
Reflected ripple current		50		mA pk-pk
Start-up voltage	Nominal 12V input models		9	VDC
	Nominal 24V input models		18	
Under voltage protection	Nominal 12V input models	6.5		VDC
	Nominal 24V input models	15.5		
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	1600		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	± 1	± 2	%	
Line regulation	Full load	± 0.5	± 1	%	
Load regulation	5 ~ 100% load	± 0.5	± 1.5	%	
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		50	100	mV pk-pk
Transient recovery time	25% load step change		300	500	µS
Transient response deviation	25% load step change	Output 3.3VDC / 5VDC	±5	±8	%
		Others	±3	±5	

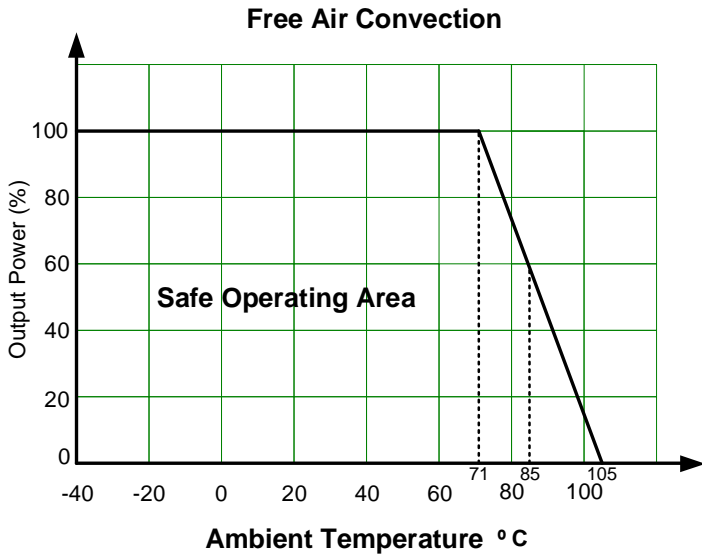
\* At 0 ~ 5% load, the maximum voltage accuracy is ±3%

\*\* 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

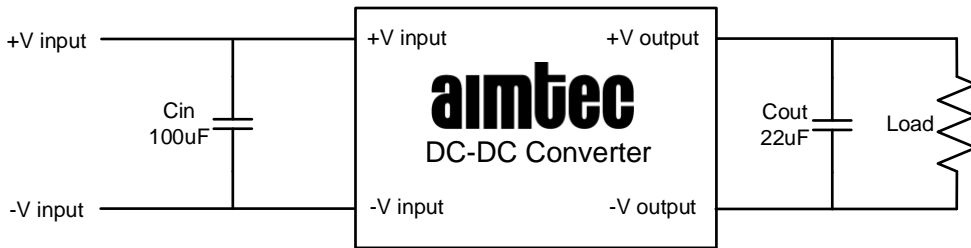
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load. PWM mode	500		KHz
Operating temperature	See derating graph	-40 to +105		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm from case 10 sec max		300	°C
Cooling	Free air convection			
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	4.9			g
Dimensions (L x W x H)	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 with EMC 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

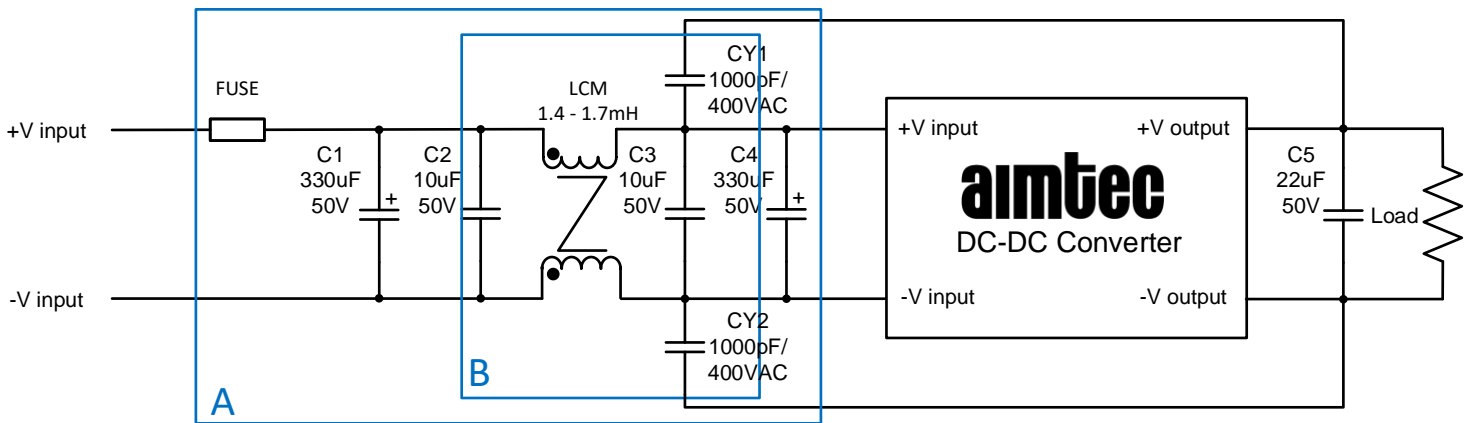
Derating



Typical Application Circuit

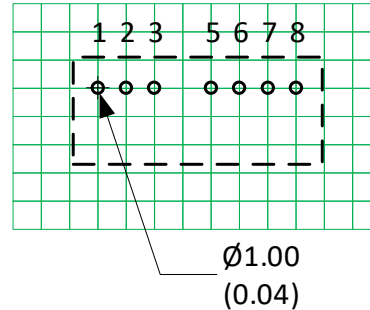
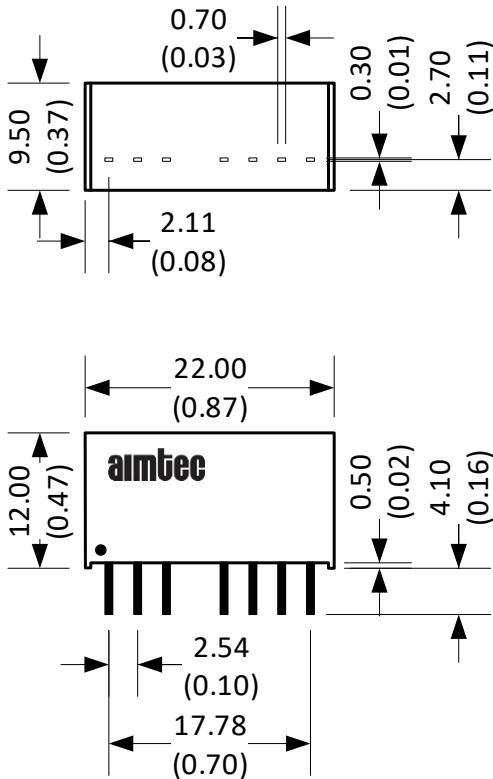


EMC Recommended Circuit



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 :  $\pm 0.10$  ( $\pm 0.004$ )

General tolerance :  $\pm 0.50$  ( $\pm 0.02$ )

### Pin Out Specifications

Pin	Single
1	-V Input
2	+V Input
3	Ctrl On/Off
5	NC
6	+V Output
7	-V Output
8	NC

**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](http://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](http://www.aimtec.com).