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AM3GU-JZ



SIP 8

Aimtec introduces the AM3GU-JZ series of DC/DC converters, which are Aimtec's first 8:1 ultra-wide input voltage range products. The impressive 4.5-36VDC input voltage can help power applications with widely varying inputs. These converters can also help reduce the total BOM by replacing multiple DC/DC converters with different narrower input voltage ranges with one cost-effective isolated DC-DC solution.

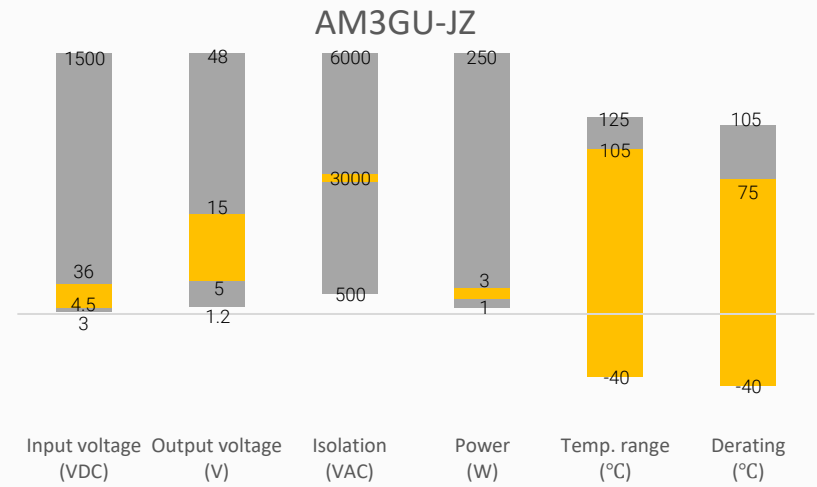
With 5, 12, 15, ± 5, ± 12, ± 15VDC output voltage options, the AM3GU are well suited for industrial and commercial applications. These products have an impressive operating temperature range of -40°C to 105°C with full power up to 75°C. They also feature isolation of 3000VDC and a high MTBF of 1,000,000h for improved reliability and system safety. Features such as output short circuit protection (OSCP), output over-current protection (OCP), and input under-voltage protection (UVLO) come standard with this family of products.

The AM3GU-JZ series are ideal for battery operated circuits, IoT, analog circuits, grid power, LED, instrumentation, industrial controls, communication, and civil applications.

Features

- Ultra-wide 8:1 Input Range: 4.5VDC – 36VDC
- Operating Temp: -40 °C to +105 °C
- Low ripple & noise, up to 100mV(p-p) max
- Efficiency up to 79%
- Output short circuit, over current protection, Input under-voltage protection
- Regulated Output
- No load power consumption low to 0.12W

Summary



Training

Press Release

Coming Soon!

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 (µF)	Efficiency (%) Full Load
			No Load	Full Load			
AM3GU-1205SH30JZ	12 (4.5 ~ 36)	5	16	334	600	1000	77
AM3GU-1212SH30JZ	12 (4.5 ~ 36)	12	16	325	250	330	79
AM3GU-1215SH30JZ	12 (4.5 ~ 36)	15	16	325	200	220	79

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			
AM3GU-1205DH30JZ	12 (4.5 ~ 36)	± 5	16	334	± 300	± 470	77
AM3GU-1212DH30JZ	12 (4.5 ~ 36)	± 12	16	325	± 125	± 220	79
AM3GU-1215DH30JZ	12 (4.5 ~ 36)	± 15	16	325	± 100	± 100	79

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			4.5	VDC
Under voltage protection		3.5		VDC

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, 1mA max	> 3000		VDC
Resistance	I/O resistance at 500VDC	> 1000		MΩ
Capacitance	I/O capacitance at 100KHz/0.1V	40		pF

Output Specification

Parameters	Conditions		Typical	Maximum	Units
Voltage accuracy			± 1	± 3	%
Line regulation	Full load (Vin min to Vin max)	+ Vout		± 0.5	%
		- Vout		± 1	
Load regulation	5 ~ 100% load	+ Vout		± 1	%
		- Vout		± 1.5	
Cross regulation	Dual outputs, Vo1 50% load, Vo2 25%~100% load			± 5	%
Over current protection			> 110	300	% of Iout
Short circuit protection	Continuous, Auto recovery				

Temperature coefficient	Full load			± 0.03	%/ °C
Ripple & Noise*	20MHz bandwidth, 5 ~ 100% load		60	100	mV pk-pk
Transient recovery time	25% load step change		300	500	µS
Transient response deviation	25% load step change	Output 5V / ± 5V	±5	±8	%
		Others	±3	±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					

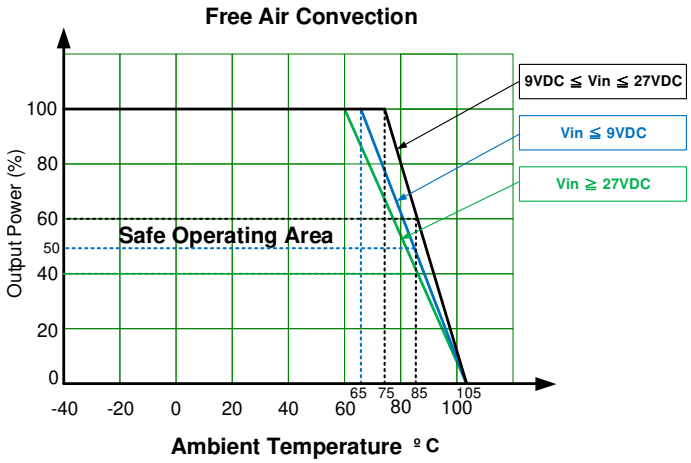
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load. PWM mode	300		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	PCB mountable model	4.5		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

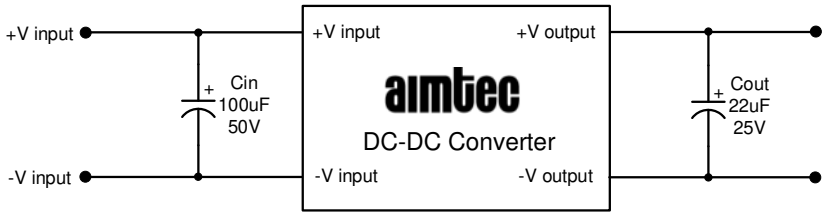
Parameters		
Agency approvals	EN/BS EN 62368-1	
Standards	Designed to meet UL 62368-1(Only for single output models)	
	EMC - Conducted and radiated emission	CISPR32/EN55032, CLASS A with EMI CLASS A recommended circuit CISPR32/EN55032, CLASS B with EMI CLASS B recommended circuit
	Electrostatic Discharge 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 EMS recommended circuit
	Surge Immunity	IEC 61000-4-5 L-L ±2KV, Criteria B with EMS recommended circuit
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 3Vr.m.s, Criteria A

Derating

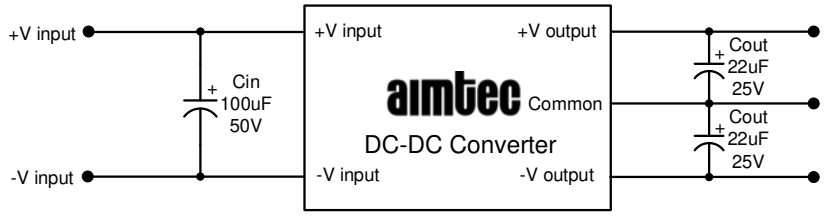


Typical Application Circuit

Single output



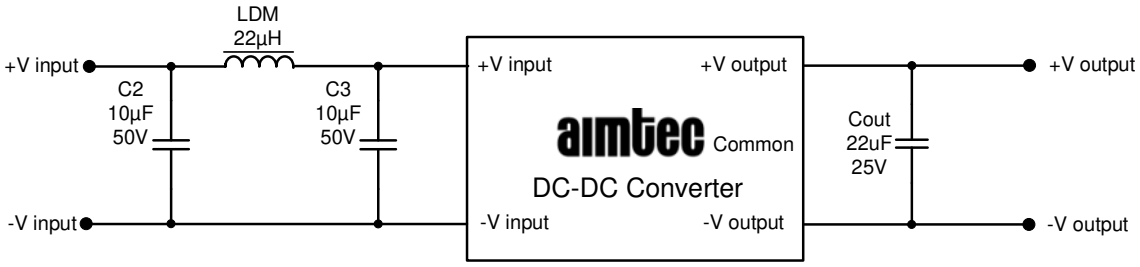
Dual output



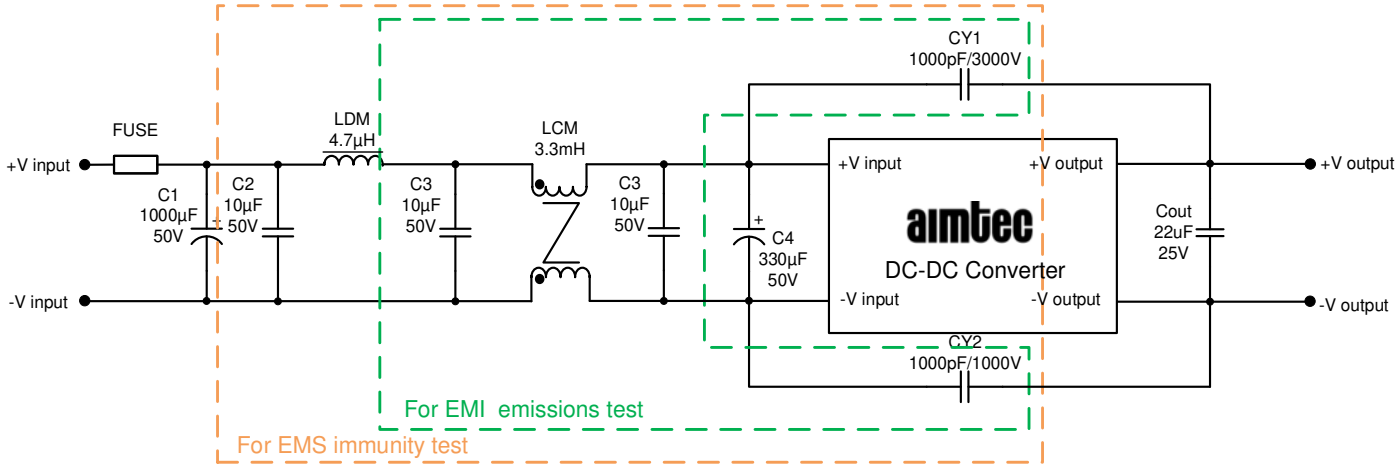
The products do not support parallel connection of their output.

EMC Recommended Circuit

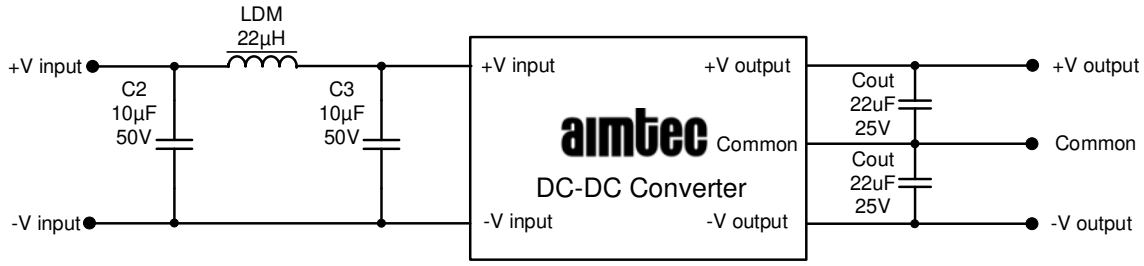
For EMI CLASS A recommended circuit, single output models



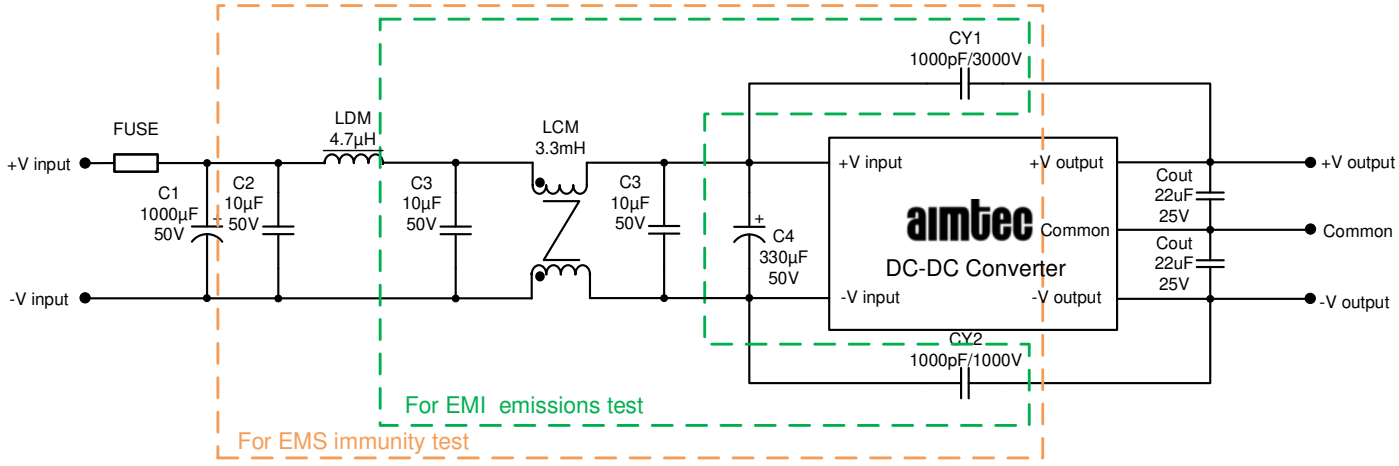
For EMI CLASS B and EMS recommended circuit, single output models



For EMI CLASS A recommended circuit, dual output models

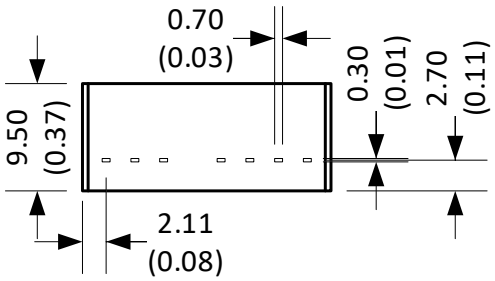


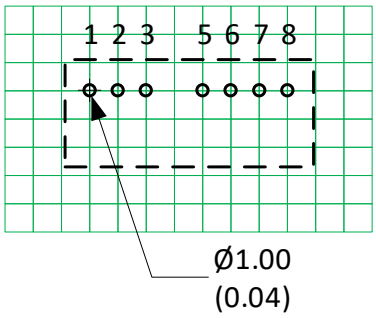
For EMI CLASS B and EMS recommended circuit, dual output models



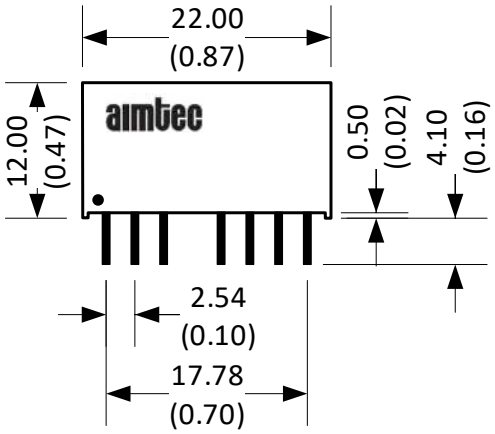
Fuse : Choose according to actual input current.

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	NC	NC
5	NC	NC
6	+V Output	+V Output
7	-V Output	Common
8	NC	-V Output

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