AMDGT-JZ

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SIP7 Package

The AMDGT-JZ is a 2.4W SIP7 DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a standard input voltage range of 5-24VDC as well as dual output voltage of -9V to +15V. This compact SIP7 design will surely benefit your new IGBT gate deriving design.

This series offers great operating temperatures, from -40℃ to +105℃ with full power up to 85℃. It also features an isolation of 5000VAC for high reliability and system safety. Furthermore, a high MTBF of 3,500,000h, output short circuit protection (OSCP) come standard with the series.

The AMDGT-JZ is suitable for IGBT gate driver, UPS, inverter, VFD, instrumentation, industrial controls, industrial applications, motor driver applications.

Features

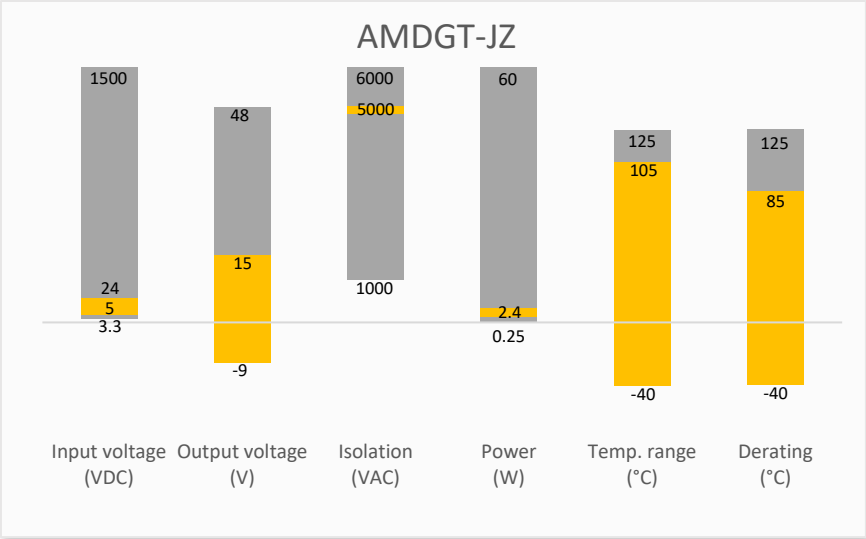
- High I/O Isolation of 5000VAC
- Extreme low isolation capacitance of 3.5pF
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Industry standard SIP7 pin-out
- Efficiency up to 87%
- Unregulated output
- IGBT gate driver direct support

RoHS

3yr Warranty

CE

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT

Industrial

Telecom

Portable Equipment

Models & Specifications

Dual Output						
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Full | No load typ. (mA)	Output Current max (mA)*	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AMDGT-051509DA50JZ	5 (4.5-5.5)	15 (14.55~16.05) / -8.7 (-8.32~-9.2)	382 / 62	80 / -40	±1000	82
AMDGT-121509DA50JZ	12 (10.8-13.2)	15 (13.5~15) / -8.3 (-7.92~-8.82)	242 / 8	100 / -100	±2200	87
AMDGT-12W1509DA50JZ	12 (9.0-15.0)	15 (13.5~15) / -8.3 (-7.92~-8.82)	242 / 8	100 / -100	±2200	87
AMDGT-151509DA50JZ	15 (13.5-16.5)	15 (14.25~15.75) / -8.3 (-7.92~-8.82)	195 / 8	100 / -100	±2200	87
AMDGT-241509DA50JZ	24 (21.6-26.4)	15 (14.55~16.05) / -8.8 (-8.37~-9.27)	135 / 9	100 / -100	±2200	82
* Performance will be degraded if the load is not within the output current range.						

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Absolute maximum rating	Maximum duration 1000ms, 5Vin	> -0.7	9	VDC
	Maximum duration 1000ms, 12Vin	> -0.7	18	VDC
	Maximum duration 1000ms, 15Vin	> -0.7	21	VDC
	Maximum duration 1000ms, 24Vin	> -0.7	30	VDC

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	>5000		VAC
Resistance (I/O)	500VDC	>1000		MΩ
Isolation capacitance (I/O)	100KHz/0.1V	3.5	5	pF
Continuous barrier withstand voltage	Input – Output (According to 61800-5-1)	>1700		V
CMTI (I/O)		±200		kV/µs

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	10%~100% load, see output voltage tolerance curve		10	%
Line regulation	Full Vin change, 5Vin models	±1.1	±1.4	%
	Full Vin change, Others	±1.1	±1.5	%
Load regulation	10-100% load	>6	15	%
Ripple & Noise	20MHz bandwidth, 5Vin model	50	150	mV pk-pk
	20MHz bandwidth, Others	50	100	mV pk-pk
Temperature coefficient	Full load	±0.04	±0.1	%/°C

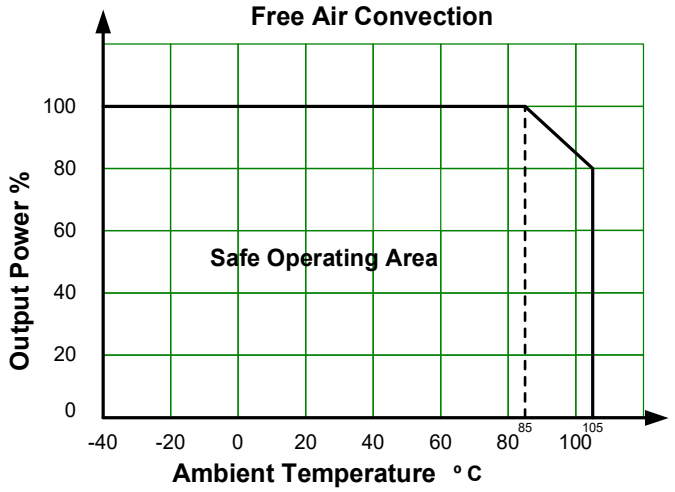
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		200		KHz
Short circuit protection	Continuous, Auto recovery			

Operating temperature	With derating	-40 ~ +105		°C
Storage temperature		-55 ~ +125		°C
Case temperature rise	Room temperature, full load	30	60	°C
Soldering temperature	1.5mm away from case, duration ≤ 10sec		300	°C
Cooling	Free air convection	--	--	LFM
Storage humidity		>5	95	% RH
Case material	Black plastic			
Weight		4.3		g
Dimensions (L x W x H)	0.77 x 0.39 x 0.49 inches (19.50 x 9.80 x 12.50 mm)			
MTBF	3 500 000 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.				

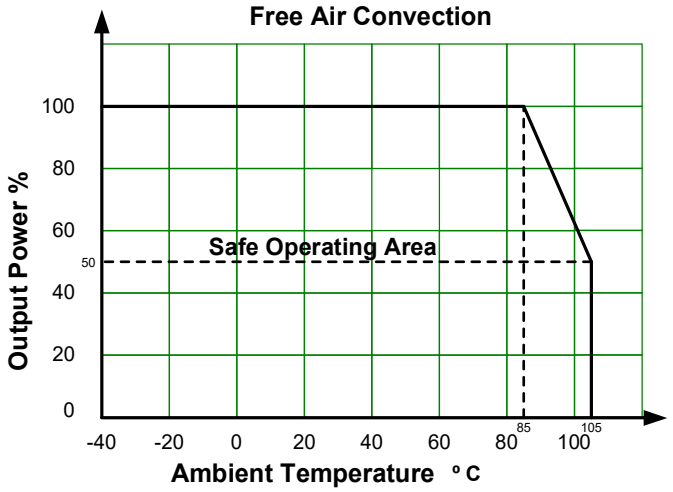
Safety Specifications		
Parameters		
Agency approvals	CE EN62368-1	
Standards	Design to meet	UL62368-1
	EMC - Conducted and radiated emission	CISPR32/EN55032, class A with the recommended EMI circuit CISPR32/EN55032, class B with the recommended EMI circuit (5Vin model only)
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV, Criteria B (5Vin models) IEC 61000-4-2 Contact ±8KV, Criteria B (Others)

Derating

5Vin models

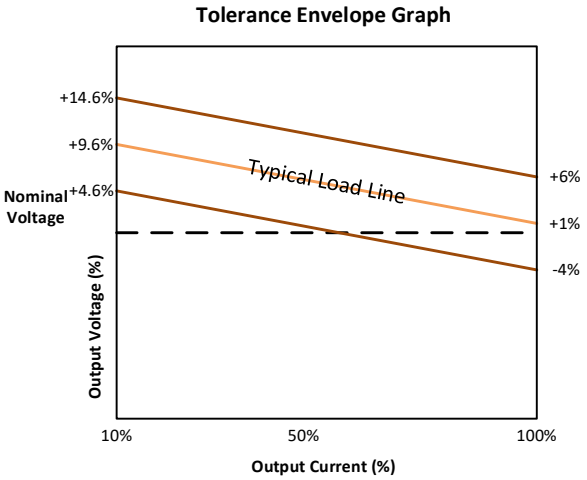


Others

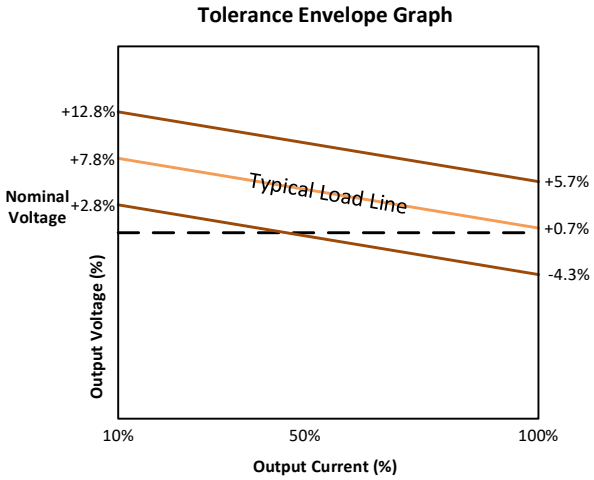


Output voltage tolerance

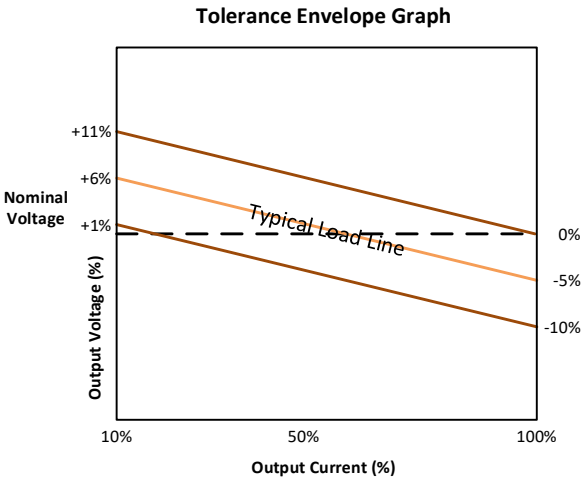
5Vin / +Vout



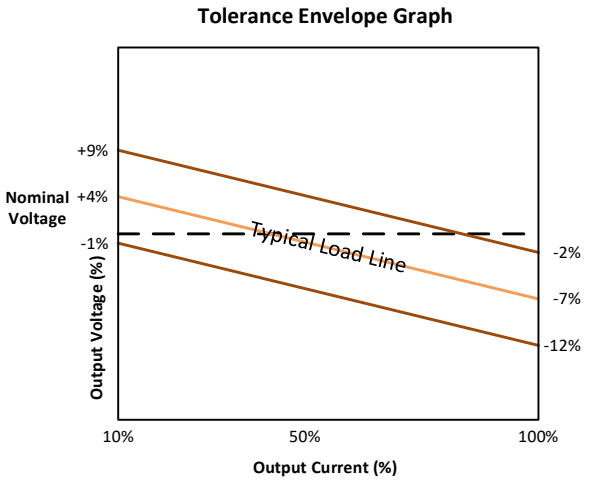
5Vin / -Vout



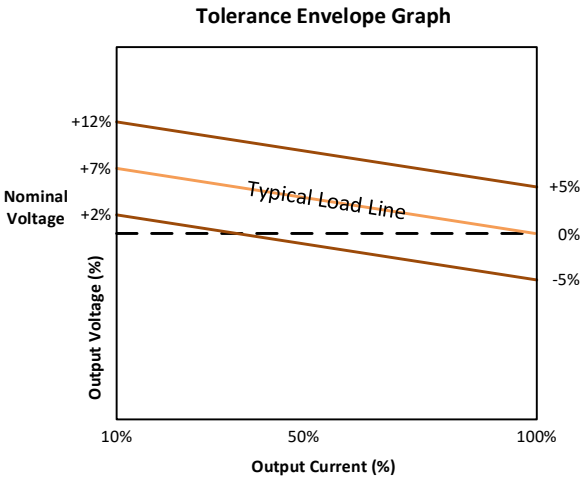
12Vin / +Vout



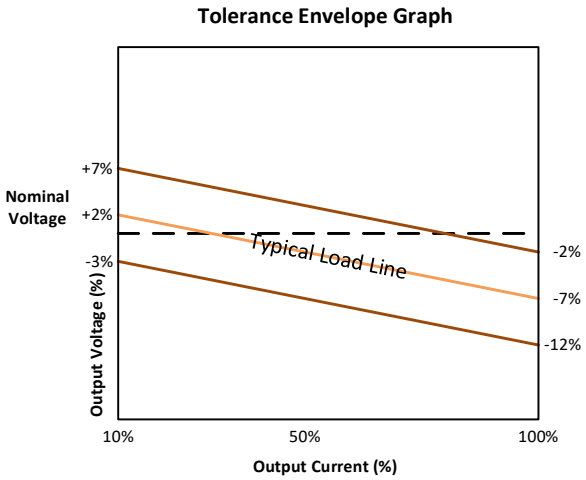
12Vin / -Vout



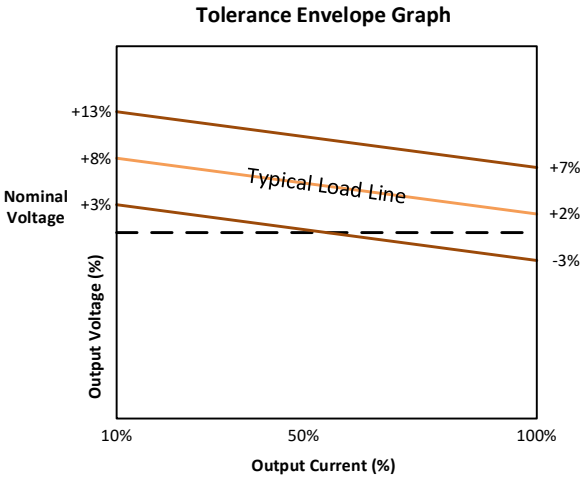
15Vin / +Vout



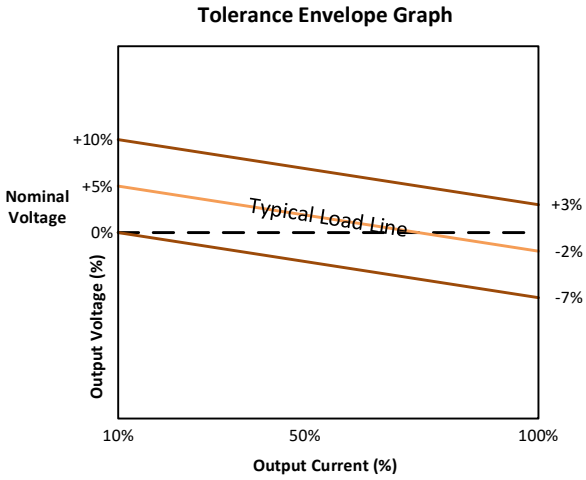
15Vin / -Vout



24Vin / +Vout



24Vin / -Vout



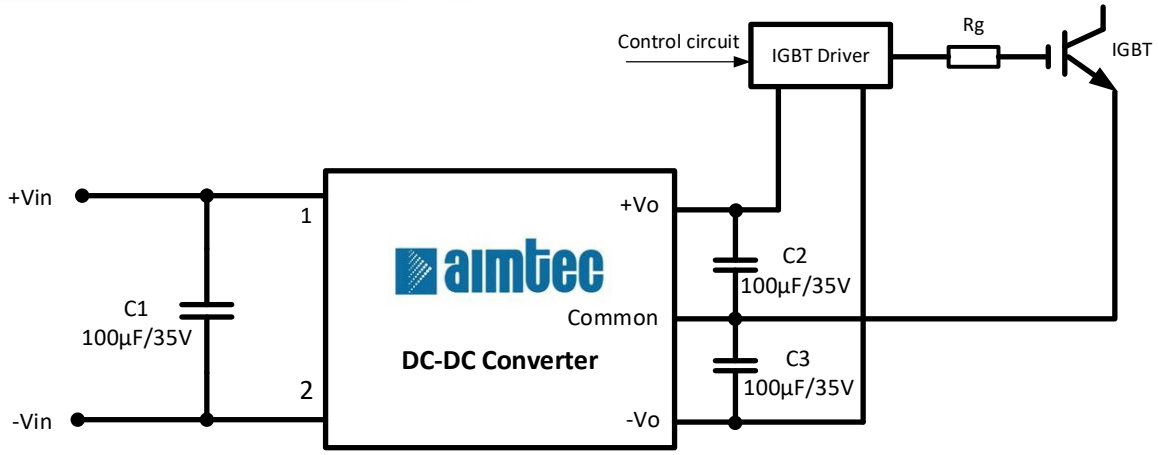
Test configurations





C1/C2/C3 : Low ESR capacitors

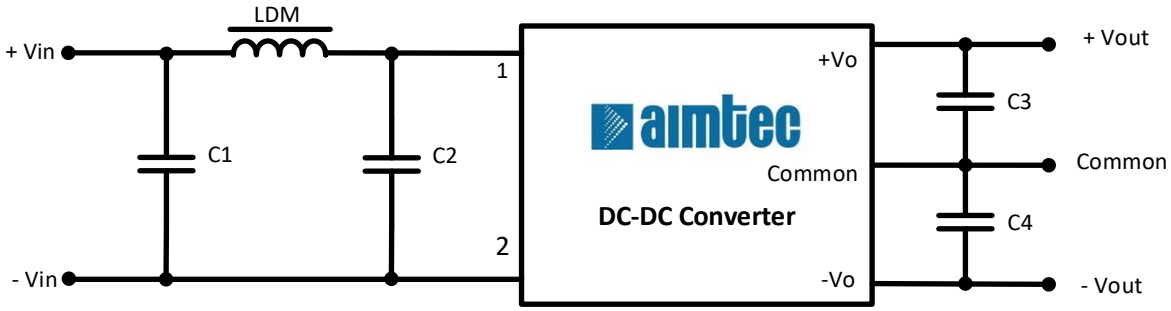
Typical application circuit



C1/C2/C3 : Low ESR capacitors

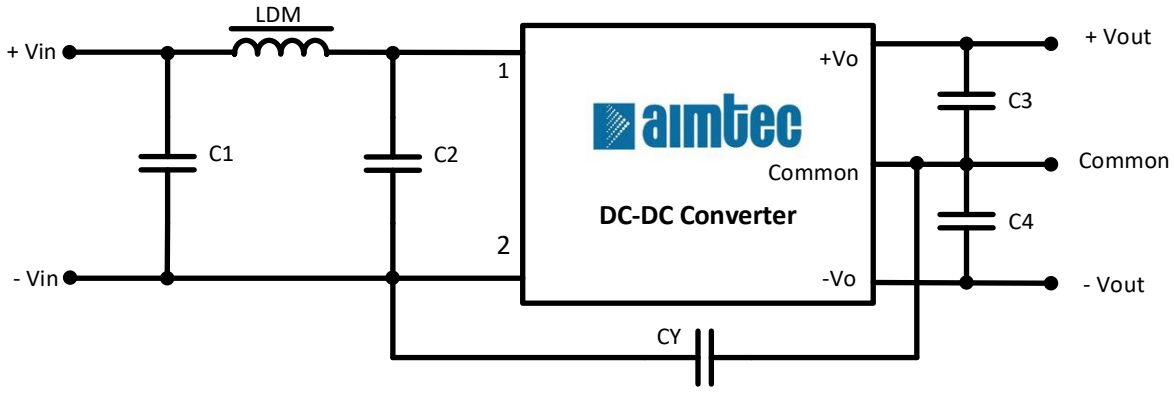
Recommended EMI circuit

CLASS A for all models



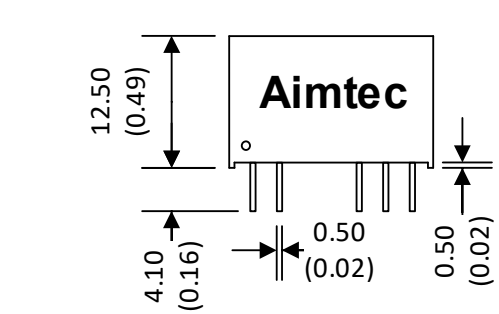
Vin	C1 / C2	C3 / C4	LDM
5V	4.7µF/16V	10µF/50V (Low ESR)	6.8µH
Others	1µF/50V	100µF/35V (Low ESR)	33µH

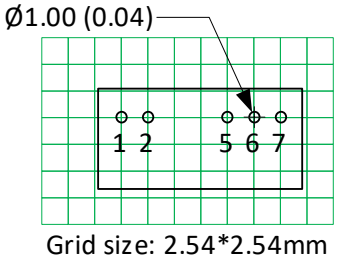
CLASS B for 5Vin model only



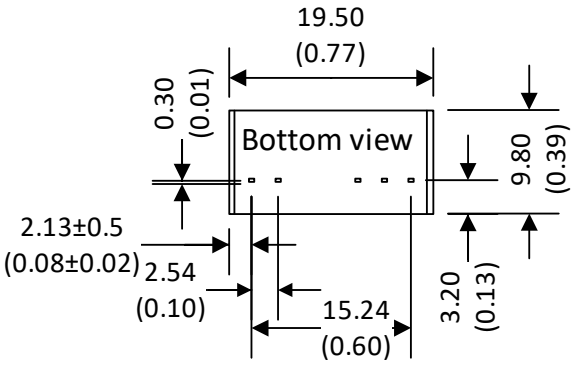
Vin	C1 / C2	C3 / C4	LDM	CY
5V	4.7µF/16V	10µF/50V (Low internal resistance)	6.8µH	330pF

Dimensions





Pin	Pin Out Specifications
1	+V Input
2	-V Input
5	-V Output
6	Common
7	+V Output



Note:
Unit: mm (inch)
General tolerance: ±0.1 (0.004)
Pin tolerance: ±0.5 (0.02)

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