AM15W-JZ



Encapsulated

The AM15W-JZ is a 15W DC/DC converter which provides an ultra-wide input voltage range of 200-1500VDC. It also features excellent reliability and performance while offering output voltages between 5 and 24V.

The converters also offer a wide operating temperature range of -40°C to +70°C with full power up to +50°C. Output short circuit protection (OSP), over current protection (OCP) and over voltage protection (OVP) come standard.

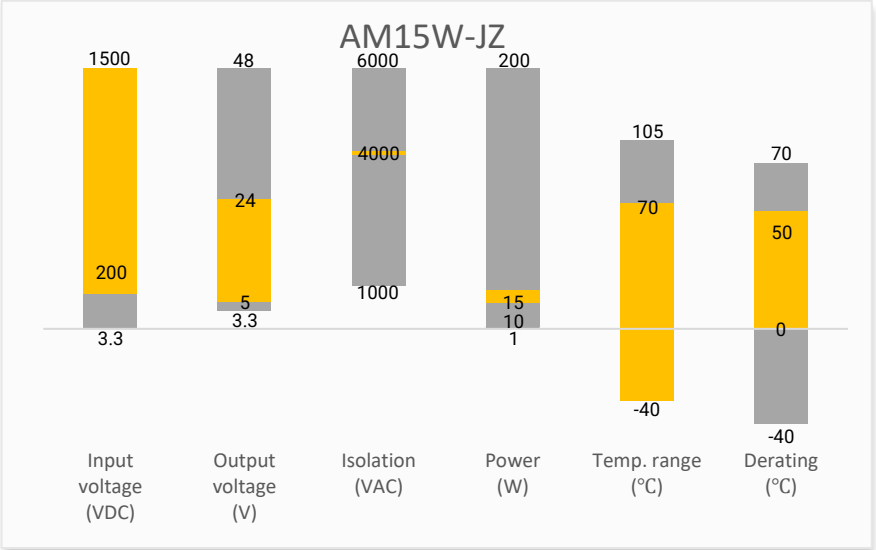
This series is available with an optional chassis mounting plate and DIN rail mount, which offers greater flexibility to the designer. This series is widely used for applications in renewable energy, such as power generation, energy storage, photovoltaic and other renewable energy related equipment.

Features

- Ultra-wide Input: 200 - 1500VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 150mV(p-p), typ.
- Output short circuit, over-current, over-voltage protection

RoHS 3yr Warranty CE UKCA

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications



Industrial | Power Grid | Renewable Energy

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Input Current max (mA)	Output Voltage (VDC)	Output Current max (A)	Isolation (VAC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM15W-80005SJZ	800 (200 - 1500)	30 (120 - 16)	5	2	4000	6000	64
AM15W-80012SJZ	800 (200 - 1500)	30 (120 - 16)	12	1.25	4000	2000	71
AM15W-80015SJZ	800 (200 - 1500)	30 (120 - 16)	15	1	4000	1200	80
AM15W-80024SJZ	800 (200 - 1500)	30 (120 - 16)	24	0.625	4000	470	83
Note: Use suffix "-ST" for chassis and suffix "-STD" for DIN-Rail mounting (ex. AM15W-80005SJZ-ST is chassis mounting and AM15W-80005SJZ-STD is DIN-Rail mounting version.)							

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	Nominal 800	200 – 1500		VDC
Inrush current	200VDC/1500VDC	30/90		A
Input under voltage lockout	ON/OFF	130/155	175/200	VDC
Absolute maximum rating	Duration 10s max.		1600	VDC

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage of 3mA max.	4000		VAC

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	0-100% load	±2.0		%
Line regulation	Full load, main input range	±1.0		%
Load regulation	0-100% load	±1.0		%
Short circuit protection	Continuous, Auto recovery			
Over current protection		≥120		% of Iout
Over voltage protection	5Vout model		8	VDC
	12Vout / 15Vout models		20	VDC
	24Vout models		30	VDC
Temperature coefficient		±0.02	±0.15	%/°C
Ripple & Noise	20MHz bandwidth		150	mV pk-pk
Start-up delay time*	main input range		2	s
Hold-up time	Room temperature, full load, 800VDC	20		ms
* Full input voltage / output load range (The cooling-time between input power-off and power-on again is greater than 15s).				

General Specifications

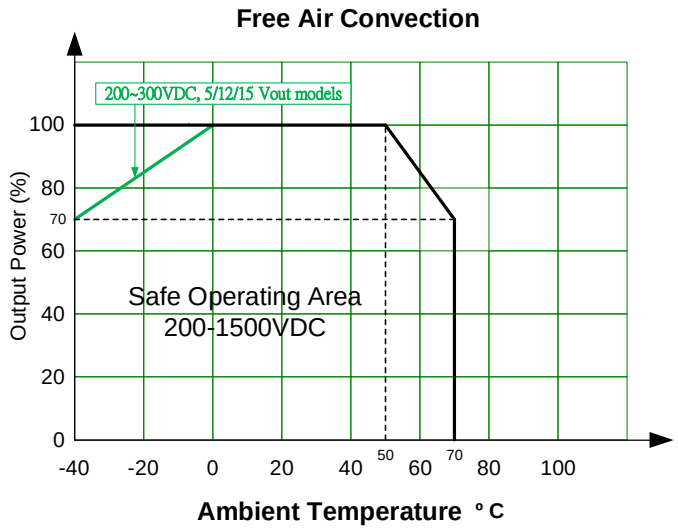
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	65		KHz
Operating temperature	See derating graph	-40 to +70		°C
Storage temperature		-40 to +85		°C
Storage humidity	Non-condensing		95	% RH
Soldering temperature	Wave soldering, 5 - 10 sec.	260 ± 5		°C
	Manual welding, 3 - 5 sec.	360 ± 10		°C
Power derating	-40 °C ~ 0 °C, 200 ~ 300VDC, 5/12/15 Vout models	0.75		%/ °C
	50 °C ~ 70 °C	1.5		%/ °C
	2000m ~ 5000m	6.7		%/Km
Altitude			5000	m
Cooling	Free air convection			
Case material	Black plastic (UL94-V0)			
Weight	PCB mountable models With optional -ST mounting plate With optional -STD mounting plate	200 280 350		g
Dimensions (L x W x H)	PCB mountable models With optional -ST mounting plate With optional -STD mounting plate	3.50 x 2.50 x 0.98 inches (89.0 × 63.5 × 25.0 mm) 5.32 x 2.76 x 1.32 inches (135 × 70.0 × 33.5 mm) 5.32 x 2.76 x 1.54 inches (135 × 70.0 × 39.0 mm)		
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

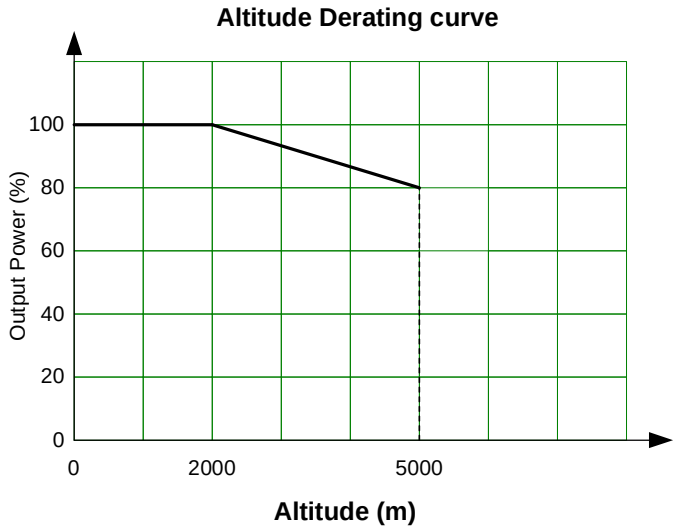
All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

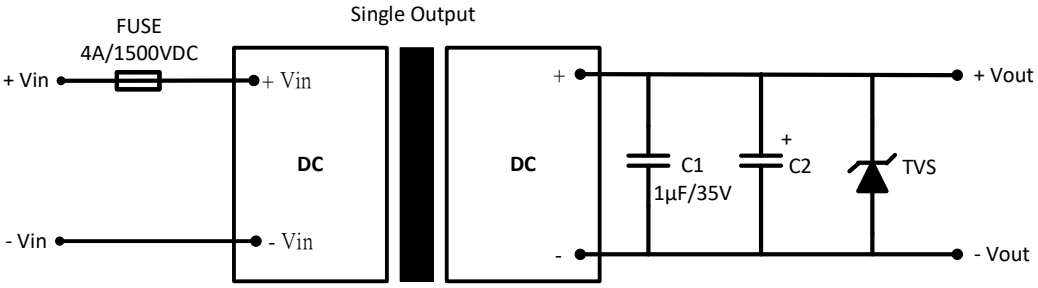
Parameters		
Standards	Information technology Equipment	EN62109-1, BS EN62109-1, design to meet UL1741
	EMI - Conducted and Radiated Emission	CISPR32/EN55032, Class A (with the recommended EMC circuit)
	Electrostatic Discharge Immunity	IEC/EN61000-4-2, Contact ±6KV / Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN61000-4-3, 10V/m, Criteria B
	Electrical Fast Transient/Burst Immunity	IEC/EN61000-4-4, ±2KV, Criteria B IEC/EN61000-4-4, ±4KV, Criteria B (with the recommended EMC circuit)
	Surge Immunity	IEC/EN61000-4-5, ±1KV, Criteria B IEC/EN61000-4-5, ±2KV, Criteria B (with the recommended EMC circuit)
	RF, Conducted Disturbance Immunity	IEC/EN61000-4-6, 10Vr.m.s, Criteria A

Derating





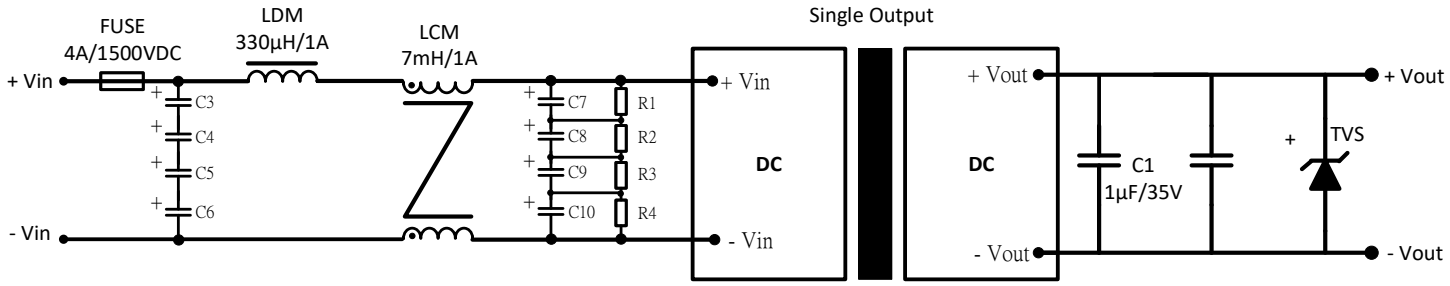
Typical Application Circuit



Model	C2	TVS
5Vout	120µF/35V	SMBJ7.0A
12Vout / 15Vout	120µF/35V	SMBJ20A
24Vout	68µF/35V	SMBJ30A

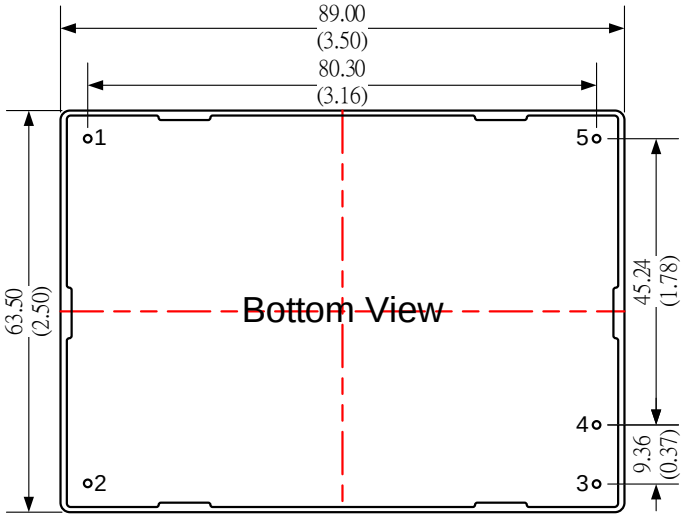
Note:
We recommend using an electrolytic capacitor with high frequency and low ESR rating for C2 (refer to manufacture's datasheet). Choose a capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor, used to filter high-frequency noise.
TVS is a recommended suppressor diode to protect the application in case of a converter failure.

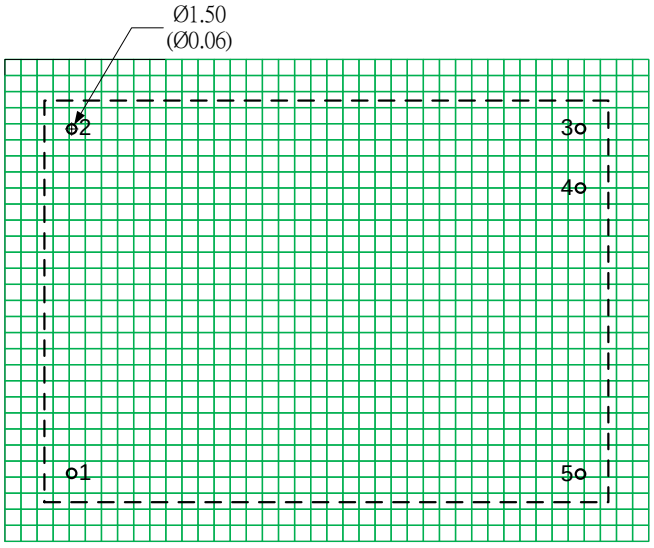
EMC recommended Circuit



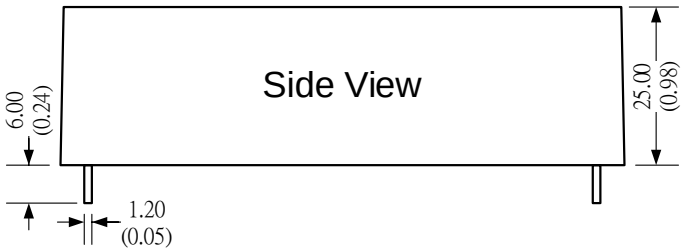
Component	Recommended value
C3, C4, C5, C6	Safety capacitor 104K/275VAC
C7, C8, C9, C10	10µF/450VDC
R1, R2, R3, R4	1MΩ/2W
LDM	330µH/1A
LCM	7mH/1A (Three insulated wire)
Fuse	4A/1500VDC, required

Dimensions





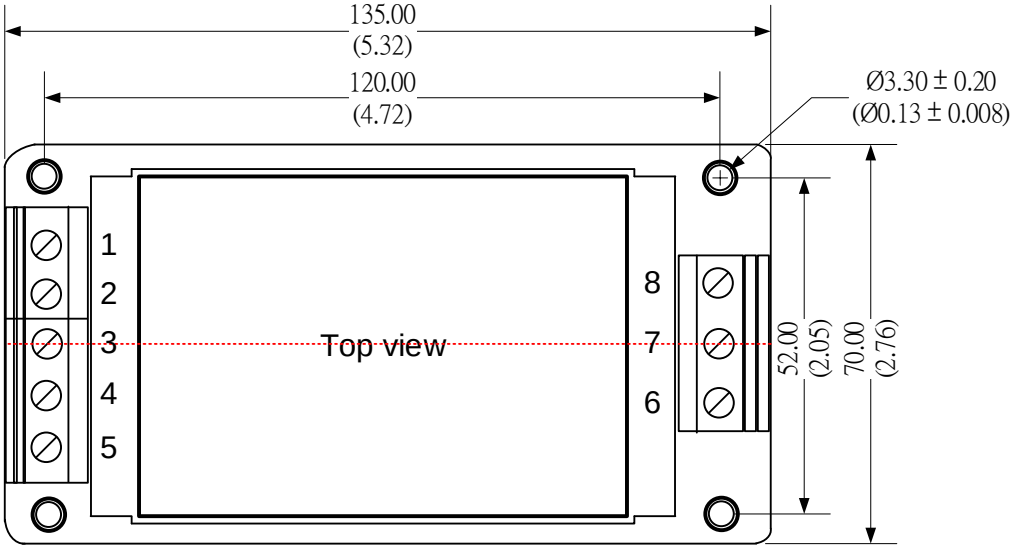
Grid 2.54*2.54mm



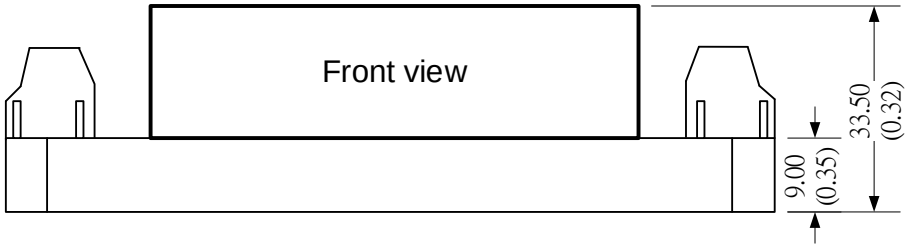
Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Diameter ± 0.10 (± 0.004)

Pin Output Specifications	
Pin	Single
1	+V Input
2	-V Input
3	+V Output
4	-V Output
5	NC

Dimensions with -ST option

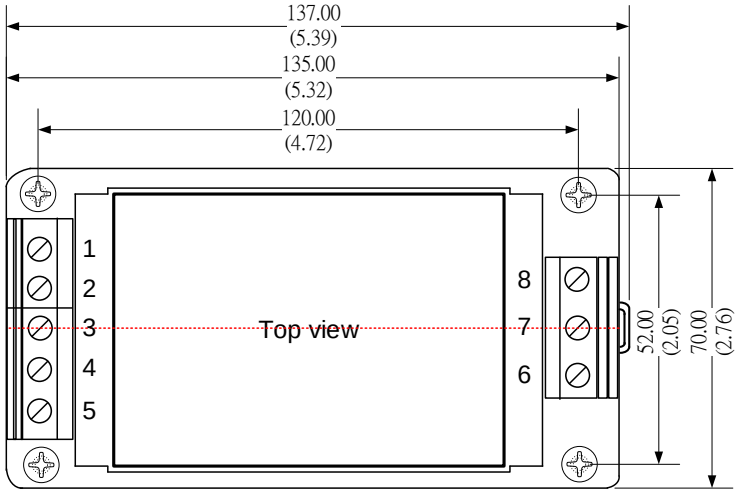


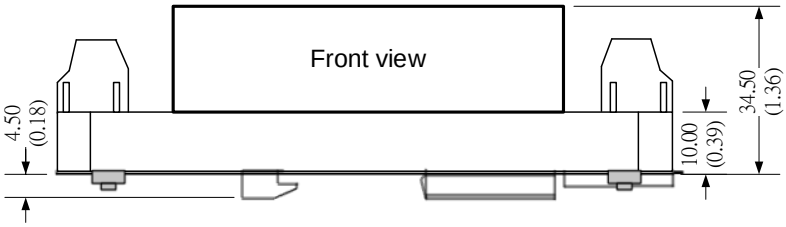
Pin Output Specifications	
Pin	Single
1	-V Input
2	NC
3	NC
4	NC
5	+V Input
6	NC
7	-V Output
8	+V Output



Dimensions: mm (inch)
Case Tolerance: ±1.00 (0.04)
Wire gauge: 24-12AWG

Dimensions with -STD option





Pin Output Specifications	
Pin	Single
1	-V Input
2	NC
3	NC
4	NC
5	+V Input
6	NC
7	-V Output
8	+V Output

Dimensions: mm (inch)
General Tolerance: ±1.00 (0.04)
Wire gauge: 24-12AWG
DIN rail type: TS35,rail need to connect safety ground.

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.