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AM15W-LPZ

Encapsulated

The AM15W-LPZ series is a 15W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide input voltage range of 100-1000VDC, which will benefit your new system design.

This series offers operating temperatures, from -40°C to 70°C. Furthermore, an isolation of 4000VAC, a MTBF of over 300,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

The AM15W-LPZ series is suitable for photovoltaic and green energy systems, power grid, industrial controls, instrument, communications applications.

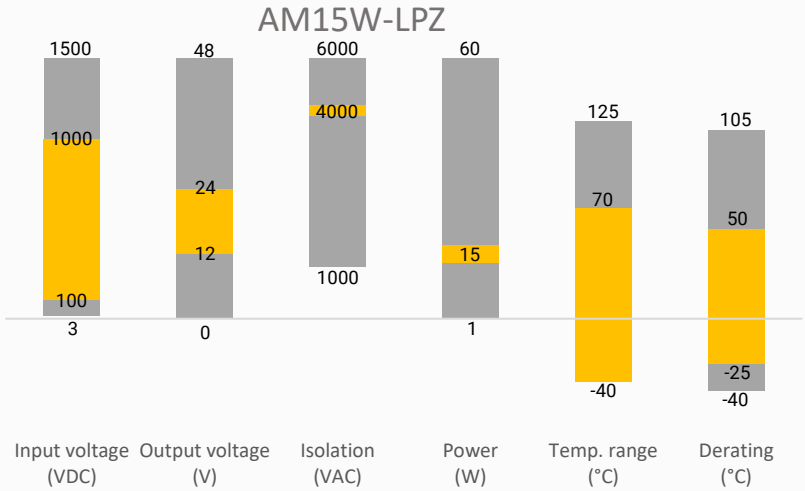
Features

- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 100mV (p-p), typ.
- Regulated Output
- Output short circuit, over-current, over-voltage, input under voltage protection

RoHS

3 yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Green Energy | Power Grid | Industrial | Telecom | Instrumentation

Models & Specifications

Single Output						
Model	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (VDC)	Output Current Max (mA)	Maximum Capacitive Load (µF)	Efficiency @500VDC TYP.(%)
AM15W-50012SA40LPZ	500 (100 ~ 1000)	15	12	1250	1500	76
AM15W-50015SA40LPZ	500 (100 ~ 1000)	15	15	1000	1000	80
AM15W-50024SA40LPZ	500 (100 ~ 1000)	15	24	625	680	81

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Input current	200 VDC	--	120	mA
	500 VDC	--	40	mA
	1000 VDC	--	20	mA
Inrush current	200 VDC	15	--	A
	1000 VDC	40	--	A
Input under-voltage protection	Under-voltage protection begins	> 40	85	VDC
	Under-voltage protection release	> 60	95	VDC
Input reverse polarity protection	Built-in protection function			
External input fuse	2A/1000 VDC, Required			

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	± 1	± 3	%
Line regulation	Full load	± 1	± 3	%
Load regulation	0 ~ 100% load	± 0.5	± 1.5	%
Ripple & Noise*	20MHz bandwidth	100	200	mV
Hold-up time	Full load, 500 VDC input	5	--	ms
	Full load, 1000 VDC input	8	--	ms
Start-up time	--	2	--	S

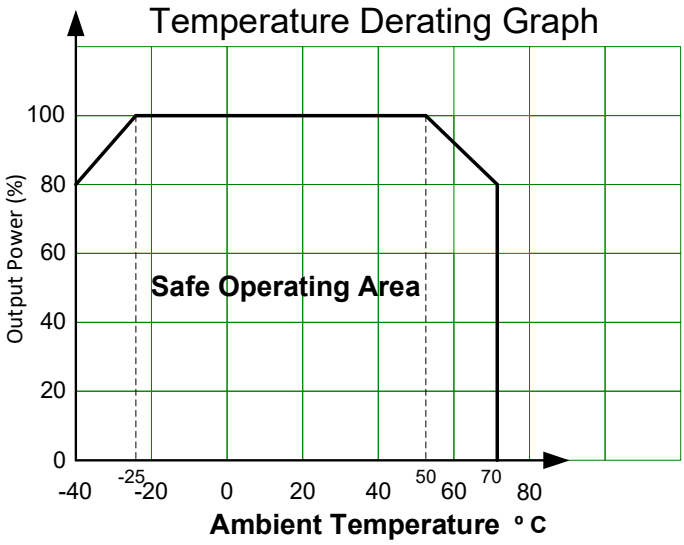
* Ripple and Noise are measured at 20MHz bandwidth with a 47µF electrolytic capacitor and a 0.1µF ceramic capacitor. Please refer to the application note for specific details.

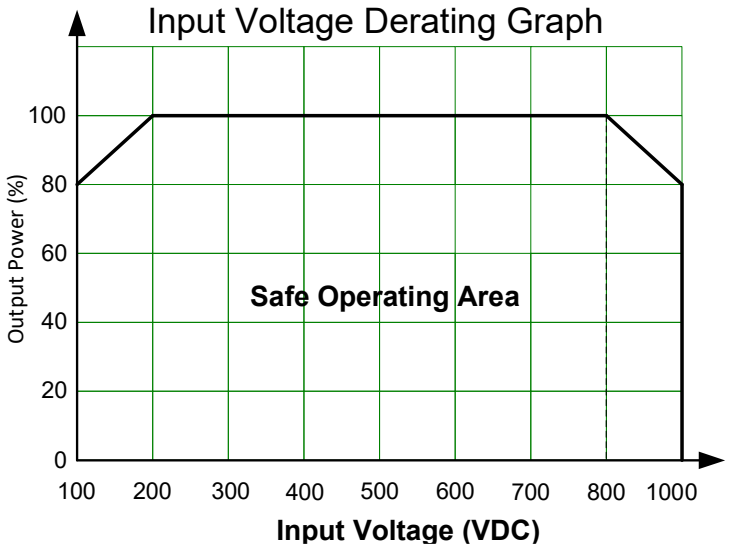
Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage (I/O)	60 sec, leakage current < 5mA	> 4000	--	VAC
Resistance (I/O)	500VDC, 25 °C, 70%RH	> 100	--	MΩ

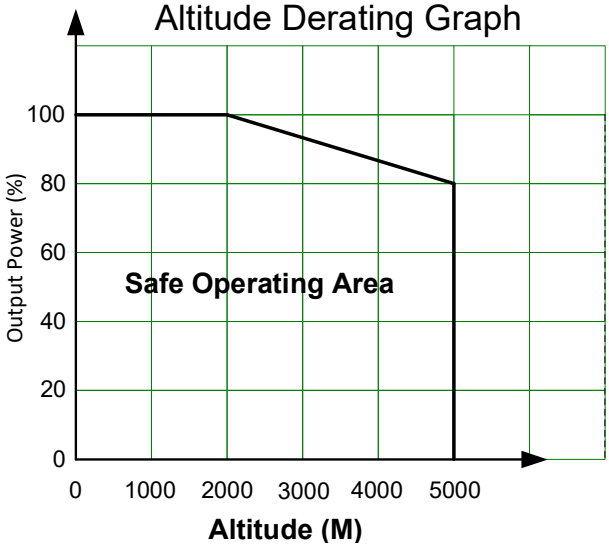
General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Switching frequency		65	--	KHz
Short circuit protection	Hiccup, self-recovery			
Over current protection	self-recovery	> 110	--	% of Iout
Over voltage protection	12Vout, voltage loop clamping	--	16	VDC
	15Vout, voltage loop clamping	--	20	VDC
	24Vout, voltage loop clamping	--	30	VDC
Operating temperature	See power derating	-40 to +70	--	°C
Storage temperature	--	-40 to +105	--	°C
No-load power consumption		0.5	--	W
Storage humidity	--	> 10	95	% RH
Case temperature	--	--	95	°C
Power derating	-40 to -25°C	1.33	--	% / °C
	+50 to +70°C	1	--	% / °C
	100 ~ 200 VDC	0.2	--	% / VDC
	800 ~ 1000 VDC	0.1	--	% / VDC
	2000m – 5000m	6.67	--	%/Km
Temperature coefficient	--	± 0.02	--	%/ °C
Altitude application	See power derating	--	5000	m
Soldering temperature	duration ≤ 5sec	260		°C
Cooling	Free air convection			
Casing material	Black plastic (flammability to UL 94V-0)			
Weight		120	--	g
Dimensions (L x W x H)	2.76 x 1.89 x 0.93 inches (70.00 × 48.00 × 23.50 mm)			
MTBF	>300 000 hrs (MIL-HDBK -217F, t=+25°C)			
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		
Standards	Designed to meet IEC/EN 62109-1, CSA-C22.2 No.107.1-16	
	EMI - Conducted and radiated emission	CISPR32/EN55032, Class A with recommended EMC circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ± 6KV / Air ± 8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ± 2KV, Criteria B IEC/EN 61000-4-4, ± 4KV, Criteria B with recommended EMC circuit
	Surge Immunity	IEC/EN 61000-4-5, L- L ± 1KV, Criteria B IEC/EN 61000-4-5, L- G ± 2KV, Criteria B with recommended EMC circuit
	CS, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 10Vrms, Criteria A

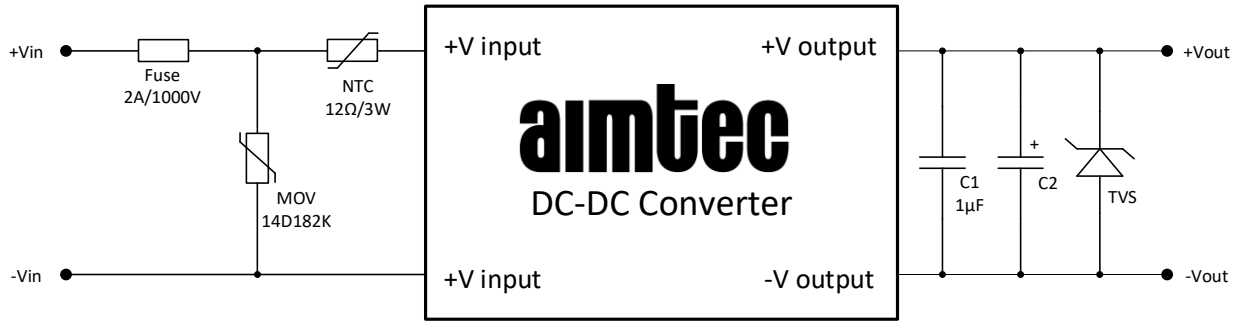
Derating


Temperature Derating Graph
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
-40
-25
-20
0
20
40
50
60
70
80
Ambient Temperature °C


Input Voltage Derating Graph
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
100
200
300
400
500
600
700
800
1000
Input Voltage (VDC)


Altitude Derating Graph
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
0
1000
2000
3000
4000
5000
Altitude (M)

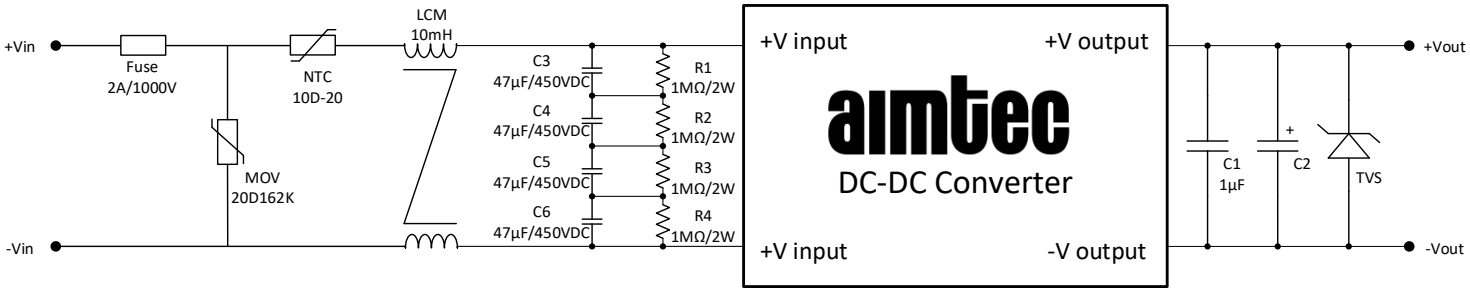
Typical Application Circuit



Vout	C2	TVS
12V	560µF	SMBJ15A
15V	470µF	SMBJ18A
24V	220µF	SMBJ28A

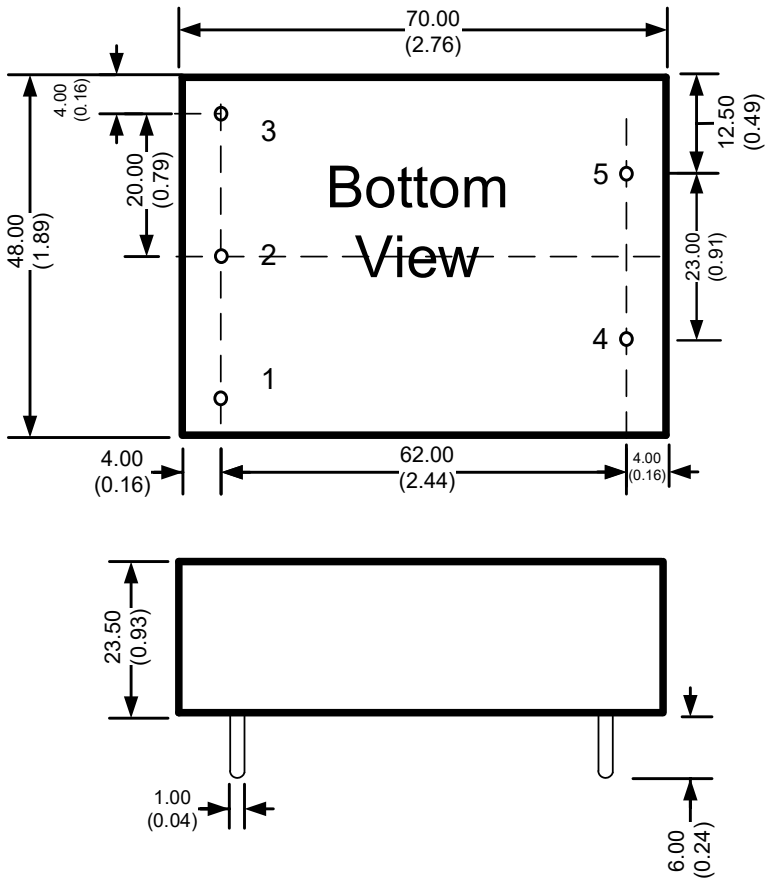
Fuse is required for the application.
C1: 1µF ceramic capacitor.
C2: low ESR, high frequency electrolytic capacitor with a voltage rating at least 20% higher than the maximum operating voltage.

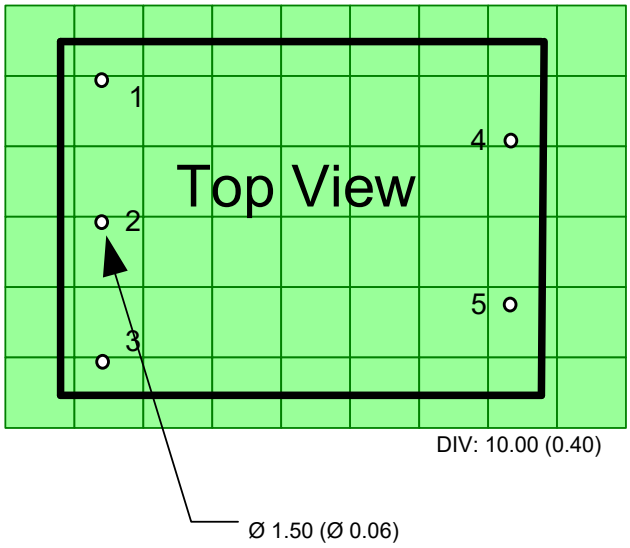
Recommended EMC Circuit



This external circuit is not required for general-purpose operation, but is recommended for EMC enhancement when higher EFT and surge immunity levels are required.

Dimensions





Dimensions mm (inch)
General Tolerance ±1.00 (±0.04)
Pin Diameter ± 0.15 (± 0.006)
Pin Distance: ± 0.50 (± 0.020)

Pin	Single
1	No Pin
2	-V Input
3	+V Input
4	-V Output
5	+V Output