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AM50W-LPZ



Encapsulated

The AM50W-LPZ series is a 50W 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 200-1200VDC, which will benefit your new system design.

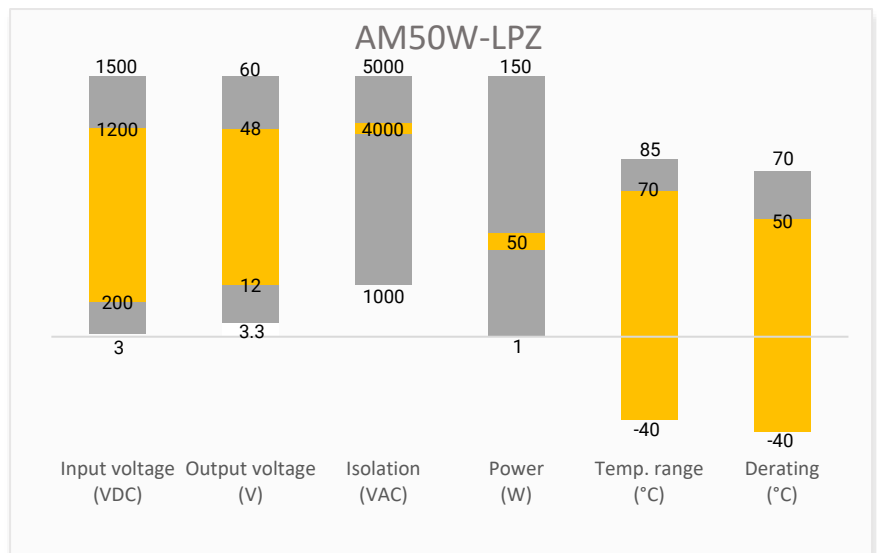
This series offers operating temperatures, from -40°C to 70°C. Furthermore, an isolation of 4000VAC, a MTBF of over 300,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

The AM50W-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

Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Green Energy



Power Grid



Industrial



Telecom

Models & Specifications



Single Output

Model	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (VDC)	Output Current Max (A)	Maximum Capacitive Load (μF)	Efficiency @600VDC TYP.(%)
AM50W-60012SA40LPZ	600 (200 ~ 1200)	50	12	4.17	1500	83
AM50W-60015SA40LPZ	600 (200 ~ 1200)	50	15	3.33	1500	83
AM50W-60024SA40LPZ	600 (200 ~ 1200)	50	24	2.08	560	85
AM50W-60036SA40LPZ	600 (200 ~ 1200)	50	36	1.39	470	85
AM50W-60048SA40LPZ	600 (200 ~ 1200)	50	48	1.04	220	86

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input current	200 VDC	--	320	mA
	600 VDC	--	100	mA
Inrush current	600 VDC	60	--	A
	1200 VDC	100	--	A
Input under-voltage protection	Under-voltage protection begins	> 100	190	VDC
	Under-voltage protection release	> 150	200	VDC
Input reverse polarity protection	Built-in protection function			
External input fuse	4A/1200 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
	Full load, 600 VDC input	5	--	ms
Hold-up time	Full load, 600 VDC input	5	--	ms
	Full load, 1200 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.

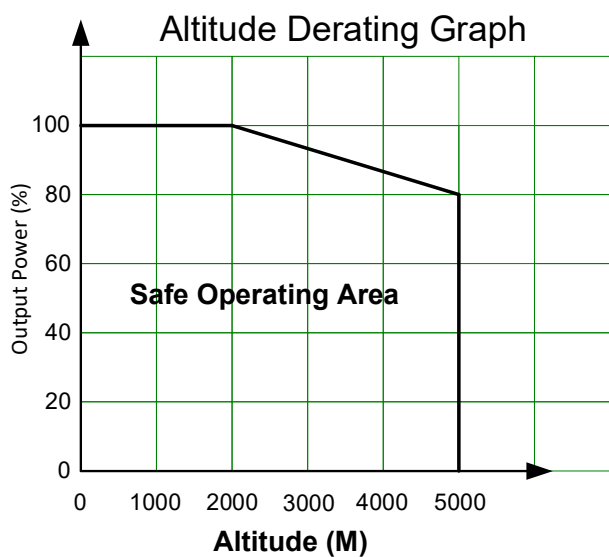
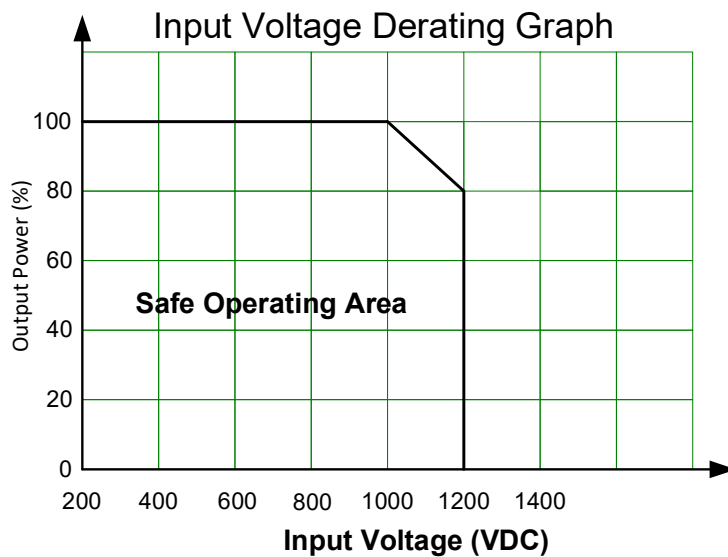
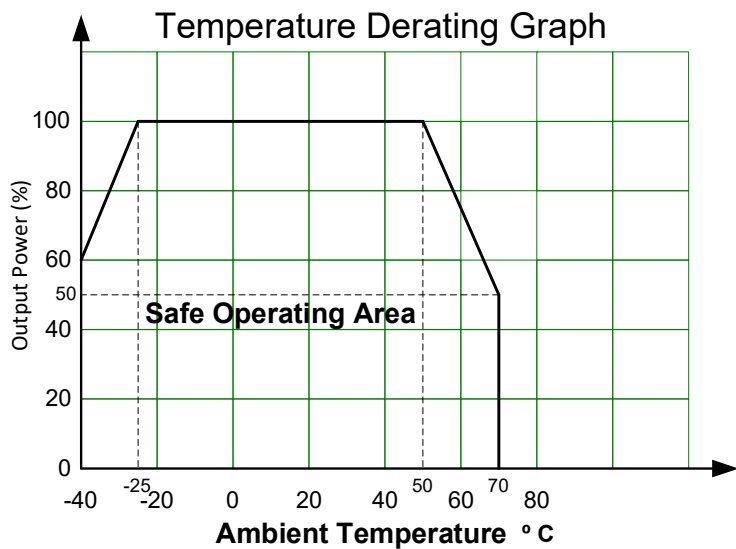
Isolation Specification

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

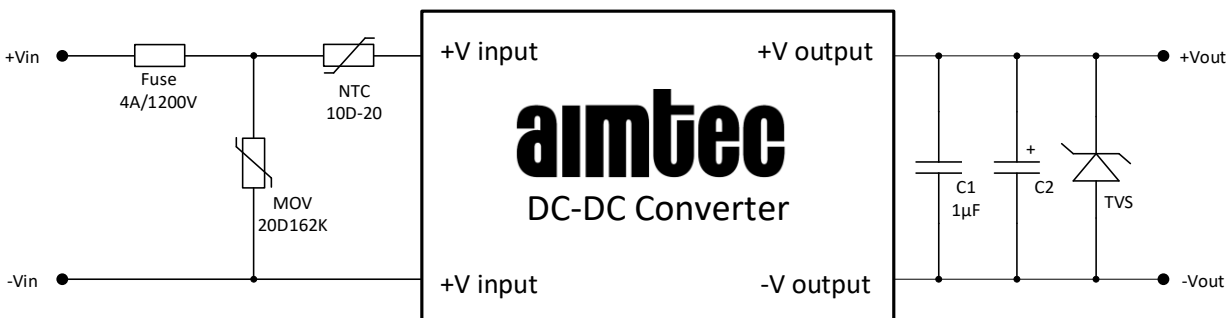
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	--	65	--	KHz
Short circuit protection	Hiccup, self-recovery			
Over current protection	self-recovery	> 110	--	% of Iout
Over voltage protection	12Vout, voltage loop clamping	--	16	VDC
	15Vout, voltage loop clamping	--	20	VDC
	24Vout, voltage loop clamping	--	30	VDC
	36Vout, voltage loop clamping	--	45	VDC
	48Vout, voltage loop clamping	--	60	VDC
Operating temperature	See power derating	-40 to +70	--	°C
Storage temperature	--	-40 to +85	--	°C
No-load power consumption		0.5	--	W
Storage humidity	--	> 10	95	% RH
Case temperature	--	--	95	°C
Power derating	-40 to -25°C	2.67	--	% / °C
	+50 to +70°C	2.5	--	% / °C
	1000 ~ 1200 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	--	180	--	g
Dimensions (L x W x H)	3.50 x 2.50 x 0.98 inches (89.0 x 63.5 x 25.0mm)			
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



Typical Application Circuit



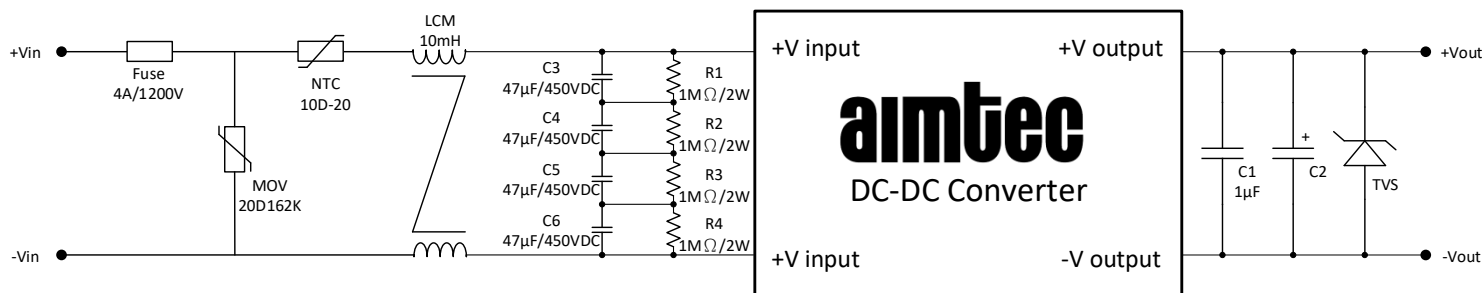
Vout	C2	TVS
12V	220μF	SMBJ20A
15V	220μF	SMBJ20A
24V	120μF	SMBJ30A
36V	120μF	SMBJ40A
48V	68μF	SMBJ60A

Fuse is required for the application.

C1: 1μF ceramic capacitor.

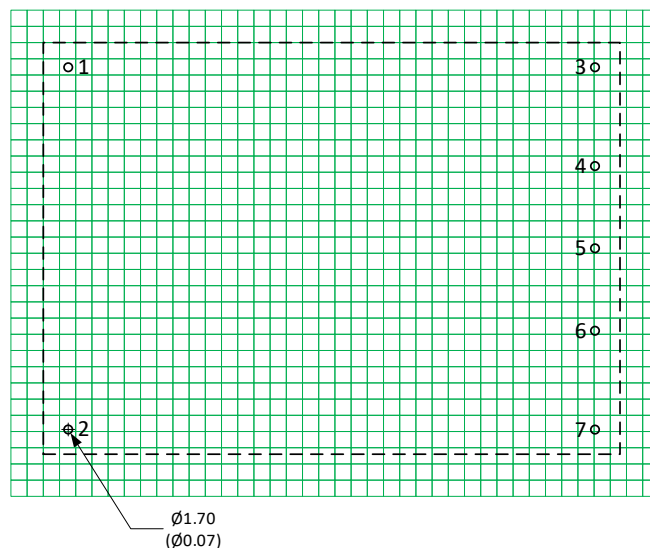
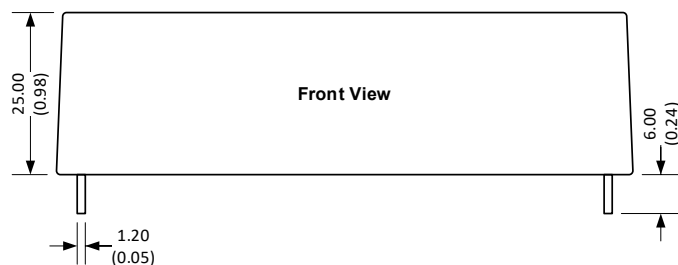
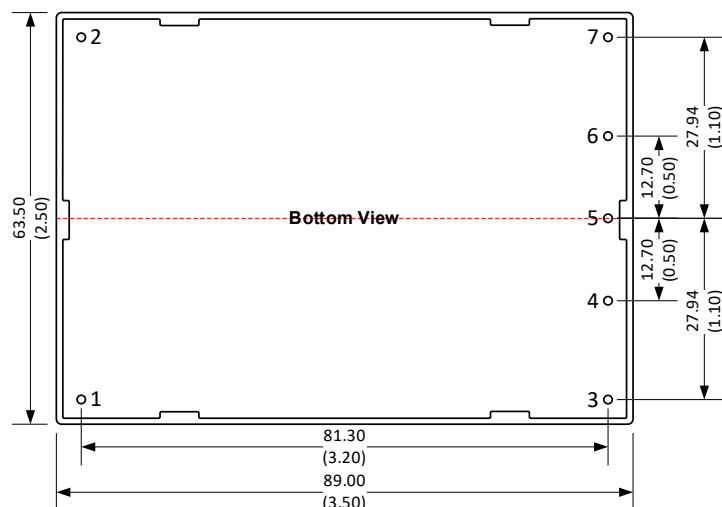
C2: low ESR, high frequency electrolytic capacitor with a voltage rating at least 20% higher than the maximum operating voltage.

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



Note : Grid 2.54*2.54 mm

Notes:

All dimensions are typical in millimeters (inches).

Pin diameter tolerances : ± 0.15 (± 0.006)

Pin distance tolerances : ± 0.50 (± 0.02)

General tolerance : ± 1.00 (± 0.04)

Pin Output Specifications			
Pin	Single	Pin	Single
1	-V Input	5	-V Output
2	+V Input	6	No pin
3	+V Output	7	No pin
4	No pin		--

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