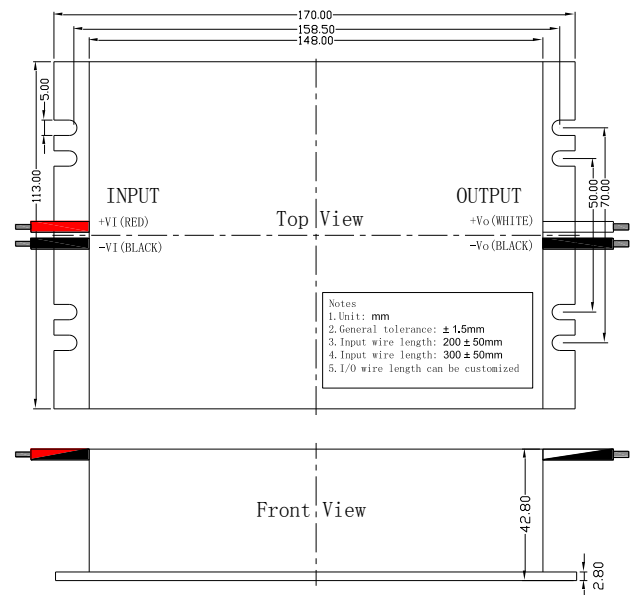




GH150-V3Sxx-S-CE

DC-DC Power Supply Module

Ultra wide input, isolated single output

Product Characteristics

- Ultra wide input voltage range, 300-1500VDC
- Standard, CE-LVD (IEC/EN 62109-1)
- Input and output isolation, 4000VDC
- Applications: photovoltaic power station, energy storage system, other high voltage input industrial equipment
- Input reversed polarity protection, UVP
- Output protection, OCP and SCP
- No minimum load requirement

Model Selection Table

Model	Dimensions (L*W*H)	Output power	Rated output voltage/current			Typical efficiency (Vin=1000VDC)
			Vo	Maximum duration current Io	Shortterm overload current Io	
GH150-V3S12-S-CE	170.0*113*42.8 mm	80Wnormal *120W pulse	12V	6670mA / *10000mA		80%
GH150-V3S15-S-CE			15V	5330mA / *8000mA		82%
GH150-V3S24-S-CE		100W normal *150W pulse	24V	4160mA / *6250mA		83%
GH150-V3S28-S-CE			28V	3570mA / *5350mA		85%
GH150-V3S32-S-CE			32V	3130mA / *4680mA		86%
GH150-V3S48-S-CE			48V	2080mA / *3120mA		88%

*Comment: for most applications, such as solar tracker, energy storage system, where pulse power is needed while average power is not high, GH150-V3S24-S-CE is suitable, please reference to the derating curves.

Input Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Input voltage range	DC input	300VDC	1000VDC	1500VDC
Input current	Vin = 300VDC	-	750mA	-
	Vin = 1500VDC	-	200mA	-
Surge current	Vin = 300VDC	-	300A	-
Input UVP	Input under voltage trigger point	-	250VDC	-
	Input under voltage released point	-	265VDC	-
Input reversed polarity protection	If input polarity is reversed, the PSU should not be damaged	Available		
External input fuse	5A/1500V, time lag type is preferred	Required		

Output Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Voltage accuracy		-	±2%	-
Line regulation	100%Io	-	±1.5%	-
Load regulation	10%-100%Io	-	±1.5%	-
Ripple and noise* ¹	20MHz bandwidth (Peak-peak value)	-	400mV	-
OCP	Output overcurrent protection	≥110%Io, Self recovery		
SCP* ²	Output short circuit protection	Self recovery		
Minimum load		0	-	-
Start-up delay time		-	2s	-
Hold-up time		-	10ms	-
Hot plug		Prohibited		
Paralleled working		Prohibited		

Remark*¹: Oscilloscope probe should be connected with the paralleled combination of a 10uF high frequency low resistance electrolytic capacitor and a 0.1uF ceramic capacitor.

Remark*²: If input voltage is higher than 1200VDC, short circuit time shall be less than 3 seconds, otherwise PSM may be damaged.

General Characteristics

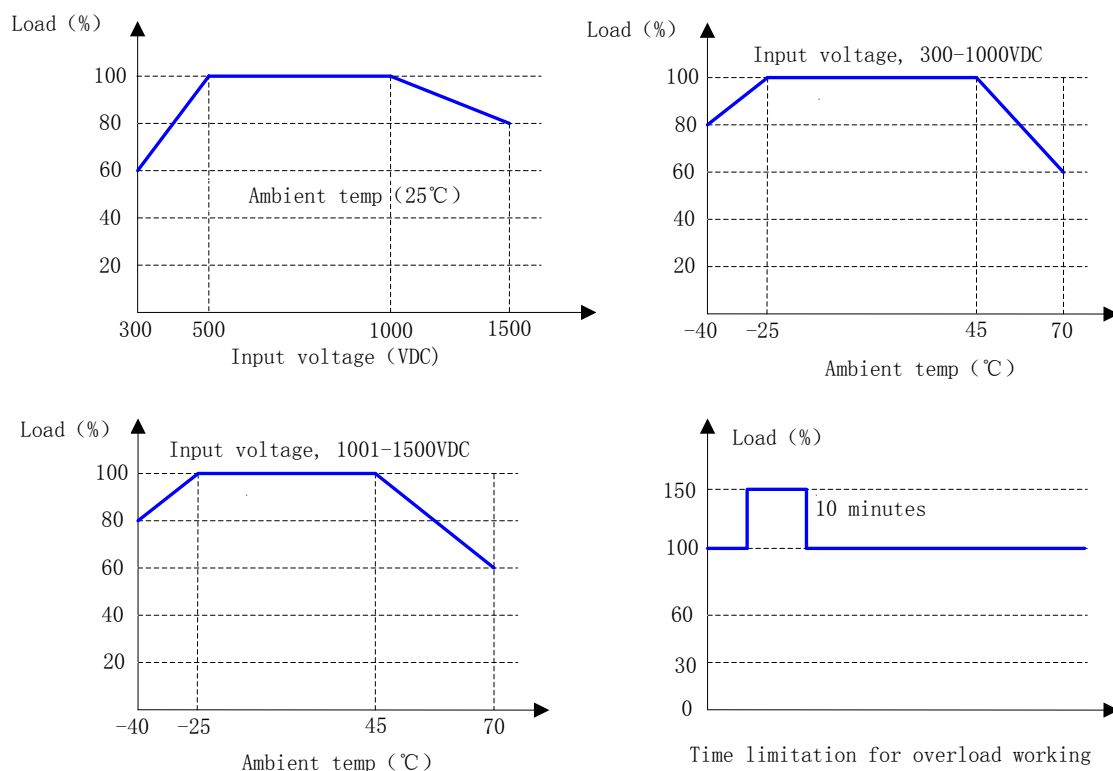
Item	Test Condition / Description	MIN	TYP	MAX
Working temperature		-40℃	-	+70℃
Storage temperature		-40℃	-	+85℃
Storage humidity		-	-	95%RH
Switching frequency		-	65kHz	-

Isolation voltage	Input to output, 60s, $\leq 5\text{mA}$	4000VDC	-	-
MTBF	MIL-HDBK-217F@25°C	215000h	-	-
Weight		-	1300g	-
Cooling method	Forced air cooling is recommended	Natural air cooling		

To comply with the requirement of CE-LVD (IEC/EN 62109-1), below comments should be considered:

1. This converter should be installed in environment classed indoor, PD2, altitude below 5000m, OVC II.
2. The internal circuit was protected by IP5X enclosure, but the protection of input and output wires should be provided by final system, further evaluation was required by end product standard.

Derating Curves



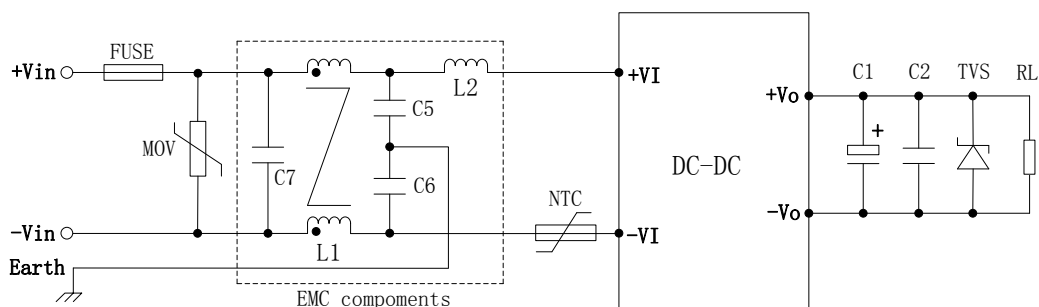
Comment1: Both temperature derating and input voltage derating should be considered.

Comment2: The feature of time limitation for continuous working can meet the requirement of solar tracker, where the motor works 10 seconds, then stops 10 minutes (with the duty of 1/60).

For other application, the actual load and temperature should be considered for more evaluation.

Application Notes

1. Application circuit recommendation



2. Input part recommendation

Component	Function and description	Recommendation
FUSE	Cut off fault circuit	Required, 5A, time lag type is preferred
NTC	Limit the surge current	Negative temperature coefficient resistor, 5D-20
MOV	Absorb surge energy	Varistor, two 112KD14 MOVs in series
C7	EMC component, X-CAP	Four 0.33uF safety X1 capacitors in series
L1	EMC component	Common mode inductor, >10mH
L2	EMC component	Differential mode inductor, 330μH
C5, C6	EMC component	Three 1nF safety Y1 capacitors in series

3. Output part recommendation

Output voltage	C1	C2	TVS	RL
12V	680μF/25V	1μF/50V	1.5KE18CA	User load
15V	680μF/25V	1μF/50V	1.5KE20CA	
24V	470μF/35V	1μF/50V	1.5KE30CA	
28V	470μF/35V	1μF/50V	1.5KE36CA	
32V	220μF/50V	1μF/50V	1.5KE39CA	
48V	100μF/63V	1μF/100V	1.5KE62CA	

Remarks:

- C1: Output filter electrolytic capacitor, high frequency low resistance electrolytic capacitor is recommended.
- C2: Ceramic capacitor to suppress high frequency noise.
- TVS: Transient suppression diode to protect post-stage circuit (user load).

Notes:

- If not specified, the test condition is ambient temperature 25℃, humidity < 75%, input voltage 1000VDC and output rated load.
- All parameters listed in the data sheet are tested according to the company's enterprise standards.
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