

GH50-V2Sxx-C-UL DC-DC Power Supply Module Ultra wide input, isolated single output

GH xx - V2 S xx - C - UL

- Product series name, normally including two or three letters
- Rated output power in watt
- Internal reserved letter and number
- S means single output
- Output voltage in volt, in constant voltage working status
- Constant current mode (CC) and constant voltage mode (CV)
- Designed based on safety standards

Product Characteristics

- Ultra wide input voltage range, 300-1500VDC
- Designed based on safety standards
- Input and output isolation, 4000VDC
- Applications: photovoltaic power station, energy storage system, other high voltage input industrial equipment
- Input protection: UVP, reversed polarity protection
- Output protection: OCP, SCP
- No minimum load requirement

Model Selection Table

Model	Dimensions (L*W*H)	Rated power	Rated output voltage/current		Typical efficiency (Vin=1000VDC)
			CC mode	CV mode	
GH50-V2S24-C-UL	134*66*40mm	50W	CC mode	13-24V/2080mA	80%
			CV mode	24V/1800mA	
GH50-V2S28.5-C-UL	134*66*40mm	50W	CC mode	13-28.5V/1700mA	81%
			CV mode	28.5V/1400mA	
GH50-V2S32-C-UL	134*66*40mm	50W	CC mode	18-32V/1560mA	82%
			CV mode	32V/1300mA	

Input Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Input voltage range	DC input	300VDC	1000VDC	1500VDC
Input current	Vin = 1000VDC, with output full load	-	130mA	-
Surge current	Vin = 300VDC	-	100A	-
Input UVP	Input under voltage protection trigger point	-	250VDC	-
	Input under voltage protection released point	-	265VDC	-
Input reversed polarity protection	If input polarity is reversed, the PSM should not be damaged.	Available		
External input fuse	3A/1500VDC external input fuse	Required		

Output Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Voltage accuracy		-	±2%	-
Current accuracy		-	±10%	-
Line regulation	100%Io	-	±1%	-
Load regulation	10%-100%Io	-	±1%	-
Ripple and noise*1	20MHz bandwidth (Peak-peak value)	-	200mV	400mV
OCP	Output over current protection	≥110%Io, Self recovery		
SCP*2	Output short circuit protection	Self recovery		
Minimum load		0	-	-
Start-up delay time		-	15s	-
Hold-up time	Vin = 1000VDC, 100%Io	-	10ms	-
Hot plug		Prohibited		
Paralleled working		Prohibited		

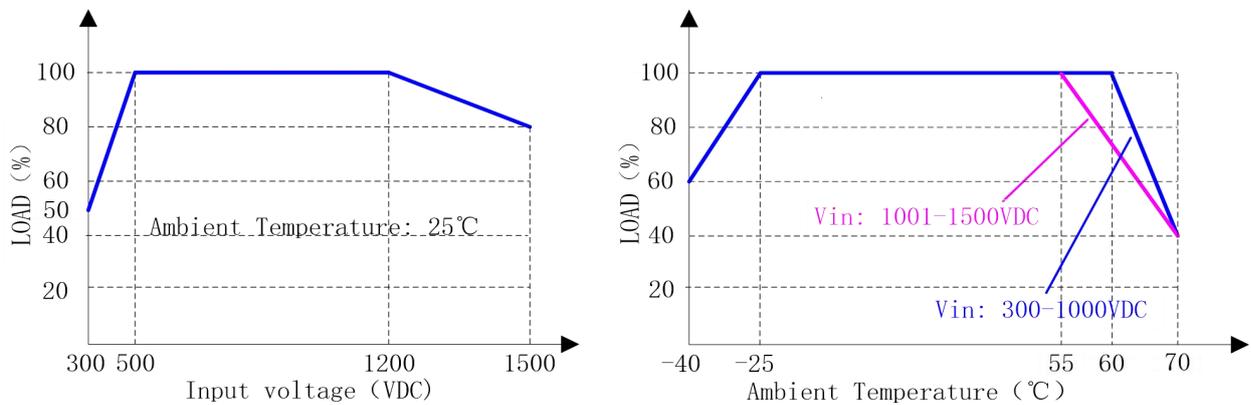
Remark *1: Oscilloscope probe should be connected with the paralleled combination of a 10uF high frequency low resistance electrolytic capacitor and a 0.1uF ceramic capacitor.

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°C	-	+70°C
Storage temperature		-40°C	-	+105°C
Storage humidity		-	-	95%RH
Switching frequency		-	85kHz	-
Isolation voltage	Input to output, 60s, ≤5mA	4000VDC	-	-
MTBF	MIL-HDBK-217F@25°C	215000h	-	-
Weight		-	450g	-
Cooling method		Natural air cooling		

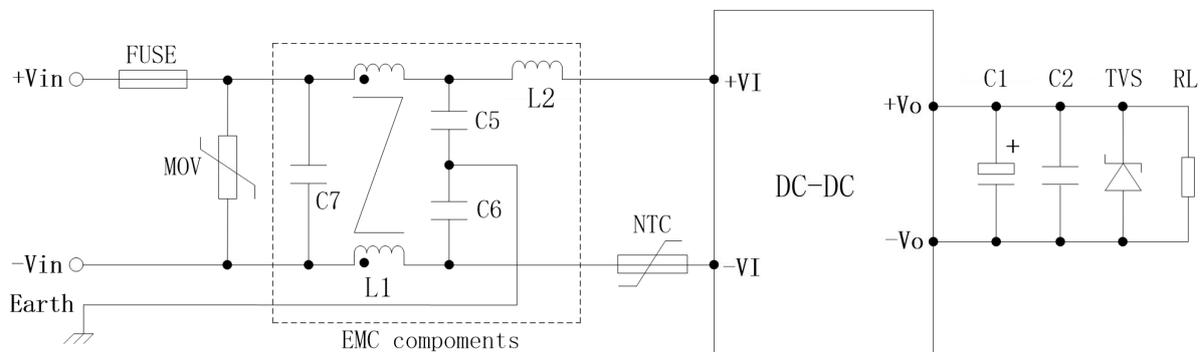
Derating Curves



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

Application Notes

1. Application circuit recommendation



2. Input part recommendation

Component	Function and description	Recommendation
FUSE	Cut off fault circuit	Required, 3A/1500VDC, time lag type is preferred
MOV	Absorb surge energy	Varistor, two 112KD20 in series
NTC	Limit the surge current	Negative temperature coefficient thermistor, 5D-20
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
24V	100μF/35V	1μF/50V	1.5KE30CA	User load
28.5V	100μF/50V	1μF/50V	1.5KE36CA	User load
32V	100μF/50V	1μF/50V	1.5KE39CA	User load

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°C, 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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