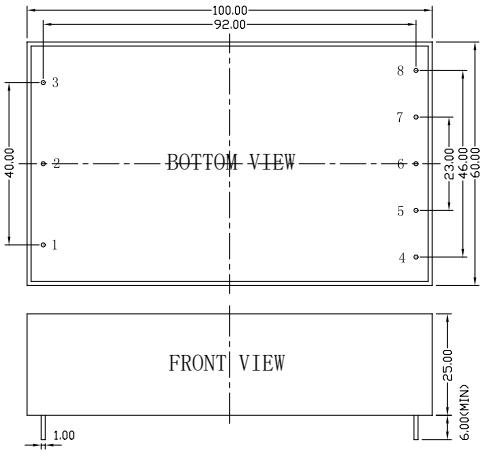
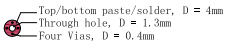


Pin PCB PAD recommendation



Pin	Function
1	NO PIN
2	-VI
3	+VI
4	NO PIN
5	-Vo
6	NO PIN
7	+Vo
8	NO PIN

Unit: mm
Pin diameter tolerance: ±0.10
General tolerance: ±0.50

GH25(40)-V2Sxx-S-UL

DC-DC Power Supply Module
Ultra wide input, isolated single output

GH xx - V2 S xx - S - UL

- UL — Designed based on safety standards
- S — Input voltage range code, S for 300-1500VDC
- xx — Output voltage in volt
- S — S means single output
- V2 — Internal reserved letter and number
- xx — Rated output power in watt
- GH — Product series name, normally including two or three letters

Product Characteristics

- Ultra wide input voltage range, 300-1500VDC
- Designed based on EN62109 and UL1741
- Input and output isolation, 4000VAC
- Input protection: UVP, reversed polarity protection
- Output protection: OCP, SCP
- No minimum load requirement
- Applications: photovoltaic power station, energy storage system, other high voltage input industrial equipment

Model Selection Table

Model	Dimensions (L*W*H)	Rated power	Rated output voltage/current		Typical efficiency (Vin=1000VDC)
			Vo	Io	
GH25-V2S05-S-UL	100*60*25mm	20W	5V	4000mA	70%
GH25-V2S12-S-UL		25W	12V	2080mA	72%
GH25-V2S24-S-UL			24V	1040mA	74%
GH25-V2S28-S-UL			28V	890mA	75%
GH25-V2S32-S-UL			32V	780mA	77%

GH40-V2S05-S-UL		30W	5V	6000mA	75%
GH40-V2S12-S-UL		40W	12V	3330mA	78%
GH40-V2S24-S-UL			24V	1660mA	80%
GH40-V2S28-S-UL			28V	1430mA	81%
GH40-V2S32-S-UL			32V	1250mA	82%

Input Characteristics

Item	Test Condition / Description		MIN	TYP	MAX
Input voltage range	DC input		300VDC	1000VDC	1500VDC
Input current	Vin = 300VDC		-	-	130mA
	Vin = 1000VDC		-	-	50mA
Surge current	Vin = 300VDC	GH25-V2Sxx-S-UL	-	30A	-
		GH40-V2Sxx-S-UL	-	60A	-
Input UVP	Input under voltage trigger point		-	250VDC	-
	Input under voltage released point		-	265VDC	-
Input reversed polarity protection	If input polarity is reversed, the PSM should not be damaged.		Available		
External input fuse	1A/1500VDC, time lag type is preferred		Required		

Output Characteristics

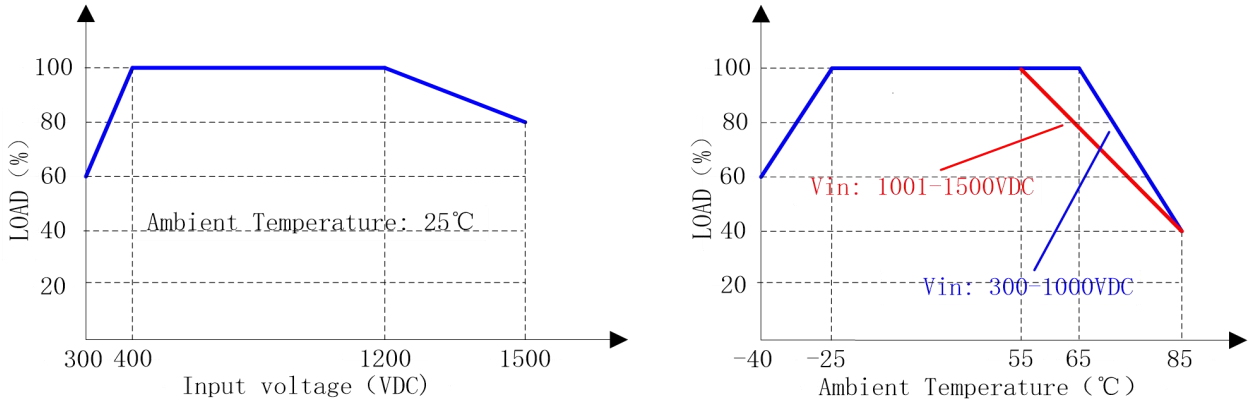
Item	Test Condition / Description		MIN	TYP	MAX
Voltage accuracy			-	±2%	-
Line regulation	100%Io		-	±1%	-
Load regulation	10%-100%Io		-	±1%	-
Ripple and noise*1	20MHz bandwidth (Peak-peak value)	Vo = 5V	-	100mV	-
		Others models	-	200mV	-
OCP	Output over current protection		≥110%Io, Self recovery		
SCP*2	Output short circuit protection		Self recovery		
Minimum load			0	-	-
Start-up delay time	Vin = 1000VDC		-	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 1000VDC, 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℃	-	+85℃
Storage temperature		-40℃	-	+105℃
Storage humidity		-	-	95%RH
Switching frequency	Vin = 1000VDC, 100%Io	-	85kHz	-
Isolation voltage	Input to output, 60s, ≤5mA	4000VAC	-	-
MTBF	MIL-HDBK-217F@25℃	215000h	-	-
Weight		-	250g	-
Cooling method		Natural air cooling		

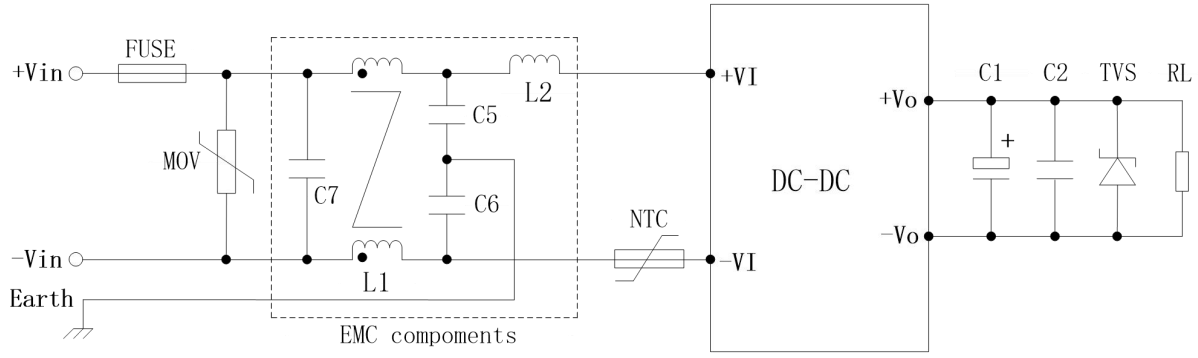
Derating Curves



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, 1A/1500VDC, time lag type is preferred
MOV	Absorb surge energy	Varistor, two 112KD14 in series
NTC	Limit the surge current	Negative temperature coefficient thermistor, 5D-9
C7	EMC component, X-CAP	Four 0.33uF safety X1 capacitors in series
L1	EMC component	Commond 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
5V	220μF/10V	1μF/50V	SMBJ7.0A	User load
12V	220μF/25V		SMBJ20A	User load
24V	100μF/35V		SMBJ30A	User load
28V			SMBJ33A	User load
32V	100μF/50V		SMBJ40A	User load

Remarks：

a. C1: Output filter electrolytic capacitor, high frequency low resistance electrolytic capacitor is recommended.

b. C2: Ceramic capacitor to suppress high frequency noise.

c. 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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