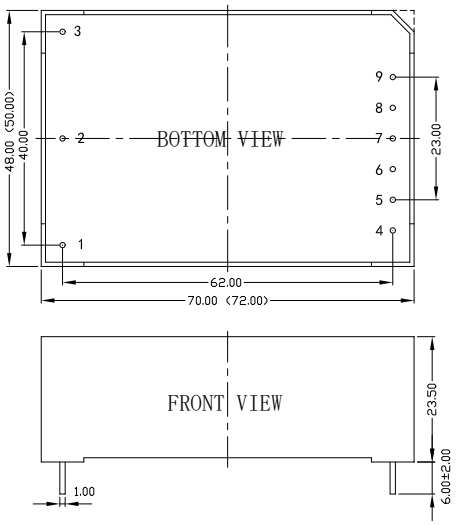


Pin	Function		
	V2S	V2D	V2E
1	NO PIN	NO PIN	NO PIN
2	-VI	-VI	-VI
3	+VI	+VI	+VI
4	NO PIN	NO PIN	NO PIN
5	-Vo	-Vo	-Vo1
6	NO PIN	NO PIN	+Vo1
7	NO PIN	COM	NO PIN
8	NO PIN	NO PIN	-Vo2
9	+Vo	+Vo	+Vo2

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

GHxx-V2Xxx

DC-DC Power Supply Module

Ultra wide input, isolated single/dual output

GH xx – V2 X xx

- xx: Output voltage in volt
- X: S means single output, D means dual-output, E means isolated two outputs
- 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, 210-1200VDC
- High reliability, industrial grade
- Input and output isolation, 4000VDC
- 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 = 600VDC）
			Vo1/Io1	Vo2/Io2	
GH15-V2S05	70.0*48.0*23.5mm (Plastic case)	15W	5V/3000mA	-	73%
GH15-V2S12			12V/1250mA	-	80%
GH15-V2S15			15V/1000mA	-	81%
GH15-V2S24			24V/625mA	-	82%
GH15-V2D05			+5V/1500mA	-5V/1500mA	72%

GH15-V2D12			+12V/625mA	-12V/625mA	78%
GH15-V2D15			+15V/500mA	-15V/500mA	80%
GH15-V2D24			+24V/312mA	-24V/312mA	81%
GH15-V2E0505			5V/2000mA	5V/1000mA	73%
GH15-V2E0512			5V/2000mA	12V/420mA	76%
GH15-V2E0524			5V/2000mA	24V/210mA	78%
GH25-V2S05	72.0*50.0*23.5mm (Metal case)	25W	5V/5000mA	-	74%
GH25-V2S12			12V/2080mA	-	80%
GH25-V2S15			15V/1660mA	-	81%
GH25-V2S24			24V/1040mA	-	83%
GH25-V2D05			+5V/2500mA	-5V/2500mA	72%
GH25-V2D12			+12V/1040mA	-12V/1040mA	81%
GH25-V2D15			+15V/830mA	-15V/830mA	82%
GH25-V2D24			+24V/520mA	-24V/520mA	83%
GH25-V2E0505			5V/3000mA	5V/2000mA	72%
GH25-V2E0512			5V/3000mA	12V/830mA	74%
GH25-V2E0524			5V/3000mA	24V/420mA	75%

Input Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Input voltage range	DC input	210VDC	600VDC	1200VDC
Input current	Vin = 210VDC, GH15-V2Xxx	-	-	120mA
	Vin = 210VDC, GH25-V2Xxx	-	-	200mA
Surge current	Vin = 210VDC	-	22A	-
	Vin = 600VDC	-	60A	-
Input UVP	Input under voltage trigger point	-	188VDC	-
	Input under voltage released point	-	200VDC	-
Input reversed polarity protection	If input polarity is reversed, the PSM should not be damaged.	Available		
External input fuse	1A / (≥1200VDC) external input fuse	Required		

Output Characteristics

Item	Test Condition / Description		MIN	TYP	MAX
Voltage accuracy	Single output model		-	±1%	±2%
	Balanced load*1	Rail 1: -Vo to COM or Vo1	-	±1%	±2%
		Rail 2: COM to +Vo or Vo2	-	±5%	±8%
Line regulation	Single output model, 100%Io		-	±0.5%	±1%
	Balanced load 100%Io	Rail 1: -Vo to COM or Vo1	-	±0.5%	±1%
		Rail 2: COM to +Vo or Vo2	-	±2.5%	±5%
Load regulation	Single output model, 10%-100%Io		-	±0.5%	±1%
	Balanced load 10%-100%Io	Rail 1: -Vo to COM or Vo1	-	±0.5%	±1%
		Rail 2: COM to +Vo or Vo2	-	±2.5%	±5%
Ripple and noise*2	Single output model		-	75mV	150mV
	Balanced load	Rail 1: -Vo to COM or Vo1	-	75mV	150mV
		Rail 2: COM to +Vo or Vo2	-	150mV	300mV
OCP	Output over current protection		≥110%Io, self recovery		
SCP	Output short circuit protection		self recovery		
Minimum load			0	-	-
Start-up delay time	Vin = 210VDC		-	15s	-
	Vin = 600VDC		-	5s	-
Hold-up time	Vin = 600VDC, 100%Io		-	10ms	-
Hot plug			Prohibited		
Paralleled working			Prohibited		

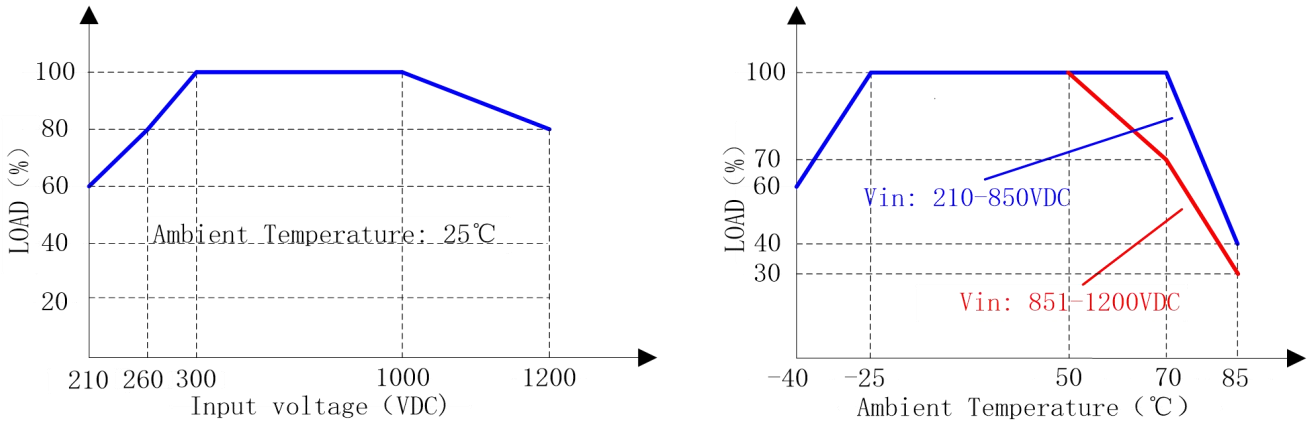
Remark *1: Balanced load means that the output load of Rail 1 and Rail 2 changes in the same proportion.
Remark *2: Oscilloscope probe should be connected with the paralleled combination of a 10uF high frequency low resistance electrolytic capacitor and a 0.1uF ceramic capacitor. Band width is set to 20MHz, and peak to peak value is measured.

General Characteristics

Item	Test Condition / Description	MIN	TYP	MAX
Working temperature		-40℃	-	+85℃
Storage temperature		-40℃	-	+105℃
Storage humidity		-	-	95%RH
Switching frequency		-	65kHz	-
Isolation voltage	Input to output, 60s, ≤5mA	4000VDC	-	-
MTBF	MIL-HDBK-217F@25℃	215000h	-	-

Weight		-	130g	-
Cooling method		Natural air cooling		

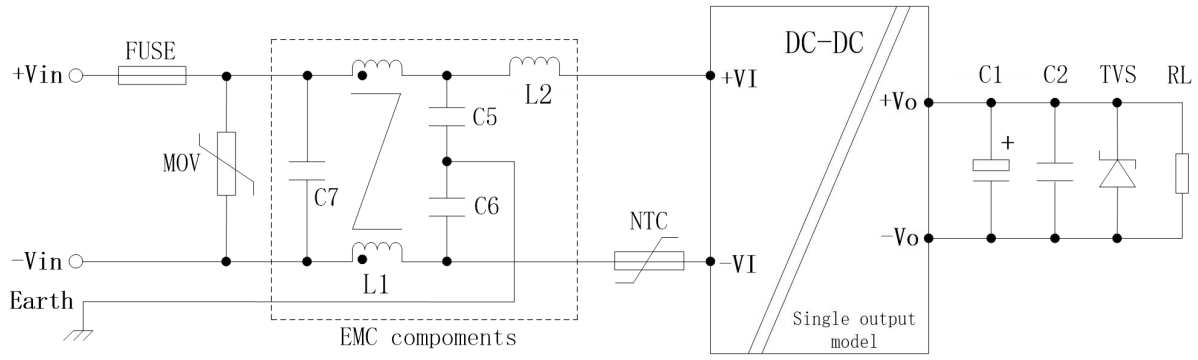
Derating Curves

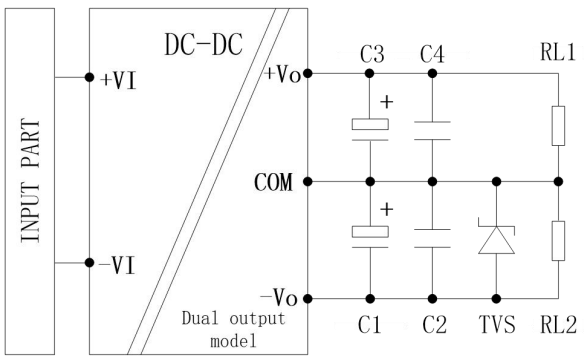


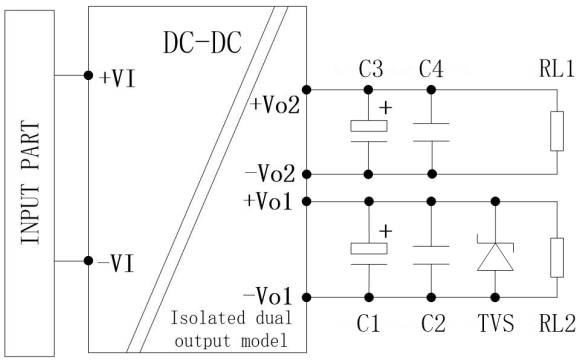
Comment: Both temperature derating and input voltage derating should be considered.

Application Notes

1. Application circuit recommendation







2. Input part recommendation

Component	Function and description	Recommendation
FUSE	Cut off fault circuit	Required, 1A/(≥1200V), time lag type is preferred
MOV	Absorb surge energy	Varistor, 152KD14
NTC	Limit the surge current	Negative temperature coefficient thermistor, 5D-9
C7	EMC component	Three 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	C3	C4	TVS	RL/RL1/RL2
5V	220μF/10V	1μF/50V	220μF/16V	1μF/50V	SMBJ7.0A	User load
12V	220μF/25V	1μF/50V	100μF/35V	1μF/50V	SMBJ20A	User load
15V	220μF/25V	1μF/50V	100μF/35V	1μF/50V	SMBJ20A	User load
24V	100μF/35V	1μF/50V	100μF/50V	1μF/50V	SMBJ30A	User load

Remarks：

a. C1 and C3: Output filter capacitor, high frequency low resistance electrolytic capacitor is recommended.

b. C2 and C4: 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 600VDC and output rated load.
- All parameters listed in the data sheet are tested according to the company's enterprise standards.
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