Typical Features

- Input voltage range: 250-1500VDC (6:1)
- Input anti-reverse, under voltage protection
- Output short circuit, over-current, over-voltage protection
- Input/Output isolation voltage 4000VAC
- Input voltage up to 1700VDC (transient, duration 2S)
- High efficiency, high reliability, low ripple & noise
- Applied to photovoltaic power generation and high voltage frequency conversion
- Operating Temperature: -40°C~+85°C
- Industrial grade design, international standard size

Application Field

BK150-800SXXGE1D6*Series* *is a 250-1500VDC ultra-high voltage input high efficiency and high reliability DC-DC switching voltage regulator power module, which can be widely used in photovoltaic power generation and high voltage frequency conversion and other applications, to provide stable working voltage for load equipment, and its own multiple protection functions can improve the safety performance of the power supply and load when the module power supply is abnormal. This series of products must refer to the recommended circuit when the electromagnetic compatibility is relatively harsh environment.*

Typical Product List

Product model	Output power	Output voltage and current		Output efficiency	Maximum capacitive load
		voltage	current	800VDC %/TYP	（u F）
	（W）	（V）	（mA）		
BK150-800S24GE1D6	150	24	6250	88%	1500
BK150-800S28GE1D6		28	5360	89%	1500
BK150-800S32GE1D6		32	4688	90%	1000
BK150-800S35GE1D6		35	4286	90%	1000

Note 1: Due to limited space, the above is only a partial list of products, if you need products other than the list, please contact our sales department.

Note 2: The typical value of output efficiency is based on the product full load aging for half an hour.

Note 3: The fluctuation range of full-load efficiency (%,TYP) in the table is ±2%, and the full-load output efficiency is equal to the total output power divided by the input power of the power module.

Input Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	--	250	800	1500	VDC
		Please refer to Input Voltage Dearting Curve at Back			
Input Current	250VDC@75%Load	--	--	800	mA
	800VDC@100%Load	--	--	400	
	1500VDC@100%Load	--	--	300	

Input Under-Voltage Protection	Undervoltage protection start point	130	--	190	VDC
	Undervoltage protection release point	160	--	220	
Input no-load Current	Output no-load	--	--	--	mA
External Fuse Recommend	--	4A/1500VDC Slow fusing, necessary			

Output specification

Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	0%~100%Load		--	±2.0	±3.0	%
Minimum Load	Full Input voltage range		10	--	--	
Line Regulation			--	±1.0	±1.5	
Load Regulation	20%~100% nominal load		--	±2.0	±3.0	
Ripple & Noise	20MHz bandwidth (peak peak value)		--	--	300	mV
Coefficient of temperature drift	--		--	±0.03	--	%
Turn On Delay Time	Normal temperature @ output full load		--	3000	--	mS
Power off holding time	Normal temperature @ output full load	800VDCinput	--	50	--	
		1500VDCinput	--	50	--	
Power-on overshoot	0%~100%load		--	--	10	%
Dynamic response to overshoot amplitude	25%-50%-25% 50%-75%-50%		--	±5.0	±6.0	
Dynamic response recovery time			--	--	500	mS
Output protection	Overcurrent	Full input voltage range	≥110%Io, Hiccup, Self recovery			
	Overvoltage		Feedback clamp limit			
	Short circuit		Continuous @ Hiccup			

General Specification

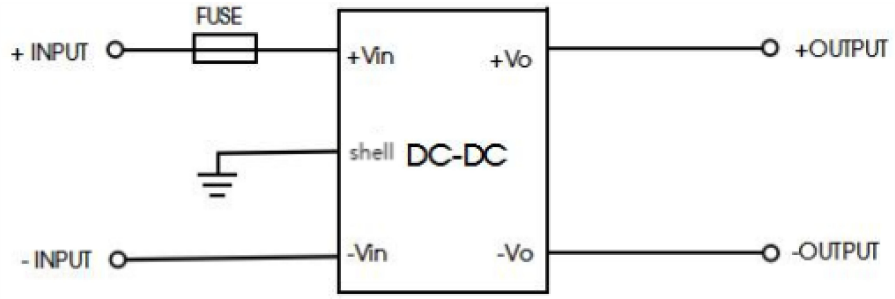
Item		Operating Condition	Min.	Typ.	Max.	Unit
Isolation Voltage	I/P-O/P	Test for 5 seconds, leakage current ≤5mA	4000	--	--	VAC
	I/P- PE	Test for 5 seconds, leakage current ≤5mA	4000	--	--	
Insulation Resistance	I/P-O/P	500VDC	--	100	--	MΩ
Operating Temperature		--	-40	--	+85	℃
		Perform temperature derating based on the temperature derating curve. For the derating curve, see the following (product feature curve)				
Storage Temperature		--	-40	--	+105	
Casing Temperature Rise		Ta=30℃@ Output 100% load	--	54	--	

Storage Humidity	--	--	--	95	%RH
Welding Temperature	Wave soldering welding	260±5℃，time5-10S			
	Manual welding	400±10℃，time4-10S			
Switching Frequency	--	--	65	--	KHz
Altitude	--	--	--	2000	m
Mean Time Between Failure	--	SR-332@25℃＞250000H			

Physical Specification

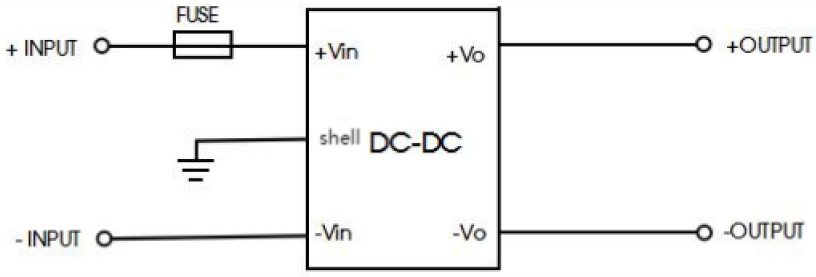
Case Material		Plastic Case
Package Dimension	Horizontal package	201.0X70.0X42.0mm
Product Weight		550g
Cooling method		Free air convection

Design reference



Output voltage	FUSE
28V	4A/1500DC
24V	Must Accept

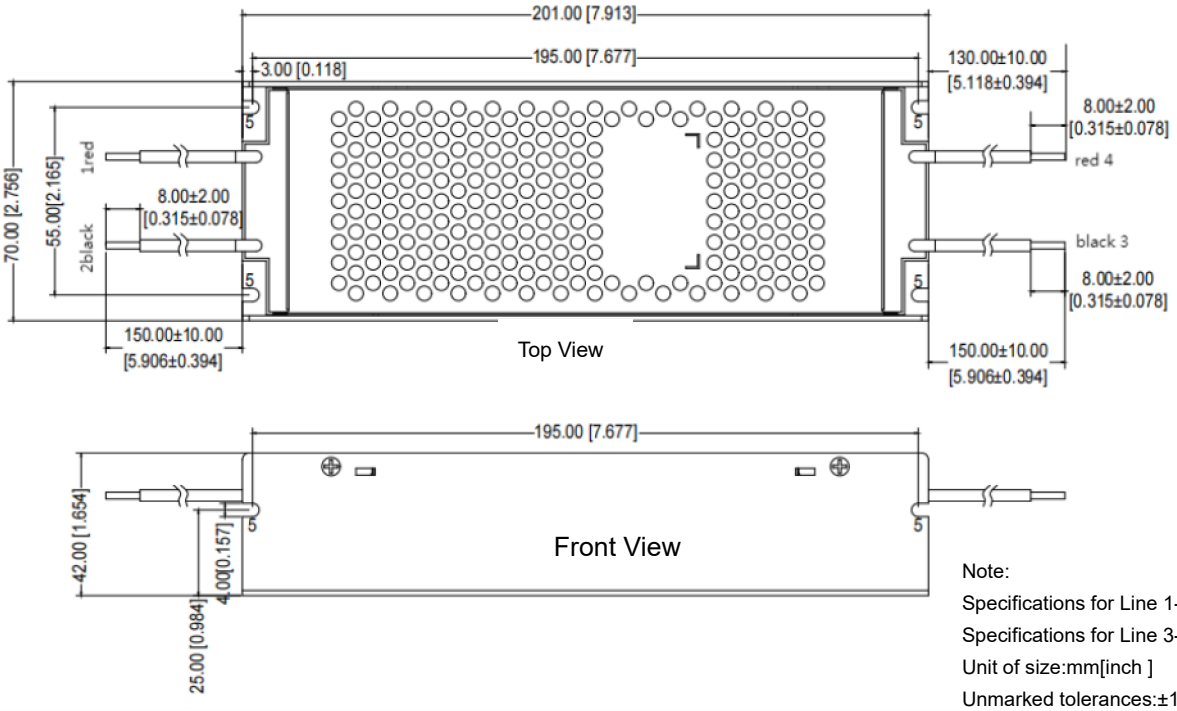
EMC Peripheral Recommended Circuit



Component	Effect	Recommended Value	Remark
FUSE -（Safety tube）	If the module is abnormal, it is blown off	Select according to the actual input current of the customer	Must add

Package Size and Pin Function Diagram

Third Angle Projection



Note:
Specifications for Line 1-2:UL3239 18AWG
Specifications for Line 3-4:UL1015 14AWG
Unit of size:mm[inch]
Unmarked tolerances:±1.00mm[±0.039inch]

Pin	1	2	3	4	5
Single (S)	+Vin	-Vin	-Vo	+Vo	PE

Package Description

Package code	L *W *H	
GE1D6	201.0X70.0X42.0mm	7.906X2.750X1.656inch

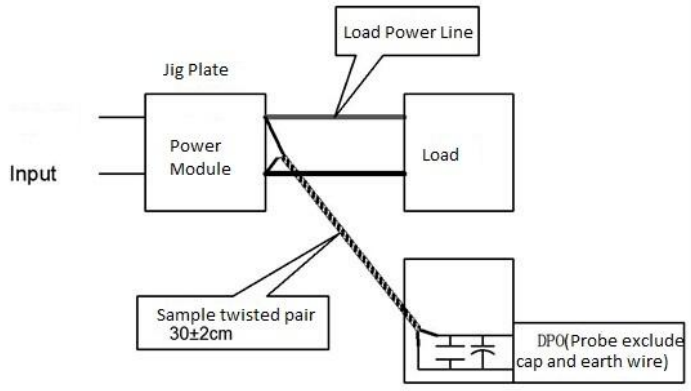
Ripple& Noise Test: (Twisted Test Method 20MHz bandwidth)

Test method:

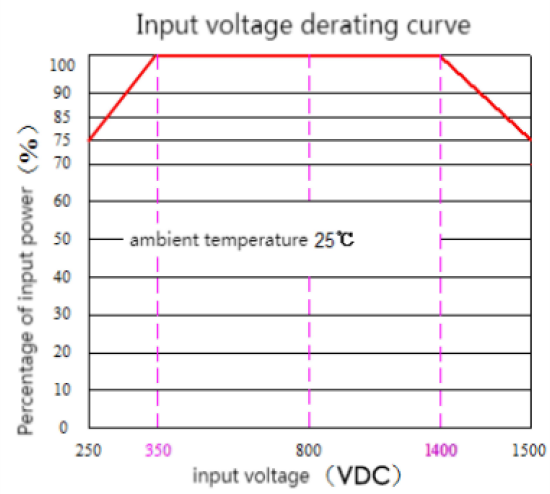
1. Ripple noise is connected using 12# twisted pair cable, the oscilloscope bandwidth is set to 20MHz, 100M bandwidth probe, and 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor are connected in parallel on the probe end, and the oscilloscope sampling uses Sample sampling mode.

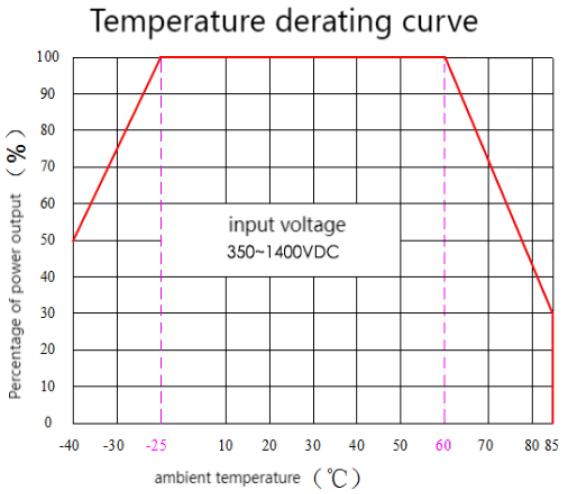
2. Output ripple noise test diagram:

Connect the power input end to the input power supply, and the power output is connected to the electronic load through the fixture board. The test is performed using a 30cm±2 cm sampling line to directly sample from the power output port. The power line selects the corresponding wire diameter with insulated wire according to the output current.



Product characteristic curve





Note:

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. The product input terminal must be connected to a fuse;
3. If the product works below the minimum required load, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
4. If the product works beyond the product load range, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
5. Unless otherwise specified, the above data are measured at Ta=25℃, humidity<75%, input nominal voltage and output rated load (electronic load);
6. All the above index test methods are based on our company's standards;

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