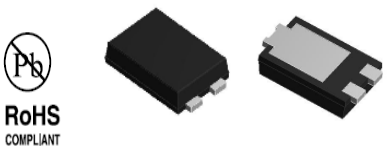
SGC1020S thru SGC1045S

Surface Mount Schottky Rectifier

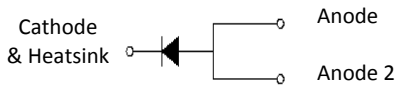
Reverse Voltage 20~45V Forward Current 10A

Features

- Schottky barrier diodes
- Low forward voltage drop
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260 °C, 10 s
- Low profile - typical height of 1.1 mm
- Heatsink design
- High temperature soldering guaranteed: 260℃/10 seconds
- Halogen-free according to IEC 61249-2-21 definition



eSGC (TO-277)



Typical Applications

For low voltage high frequency inverters, DC/DC converters and polarity protection application.

Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter	Symbol	SGC1020S	SGC1030S	SGC1040S	SGC1045S	Unit
Maximum repetitive peak reverse	VRRM	20	30	40	45	V
Maximum RMS voltage	VRMS	14	21	28	31.5	V
Maximum DC blocking voltage	VDC	20	30	40	45	V
Maximum average forward rectified current	IF(AV)[1]	10.0				A
	IF(AV)[2]	5.0				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	IFSM	280				A
Operating junction and storage temperature range	TJ, TSTG	-55 to +150				°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instantaneous forward voltage	I_F=1A	T_A=25℃	V_F	0.30	0.35	Volts
	I_F=2A			0.33	0.38	
	I_F=10A			0.41	0.45	
	I_F=1A	T_A=85℃		0.22	0.27	
	I_F=2A			0.25	0.3	
	I_F=10A			0.36	0.42	
	I_F=1A	T_A=125℃		0.16	0.20	
	I_F=2A			0.20	0.24	
	I_F=10A			0.32	0.36	
Instantaneous reverse current	Rated VR	T_A=25℃	I_R	0.23	0.3	mA
		T_A=85℃		14.5	18	
		T_A=100℃		35	39	
Typical junction capacitance	4.0 V, 1 MHz		C_J	0.95		nF
Typical thermal resistance[1]	juntion to ambient		$R_{\theta JA}$	80		℃/W
	juntion to case		$R_{\theta JC}$	35		
	juntion to mount		$R_{\theta JM}$	20		

Note:1),The thermal resistance from junction to ambient,case or mount,mounted on P.C.B with 30×30mm copper pads,2 OZ,FR4 PCB

2):Mounted on recommended copper pad area,free air.

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

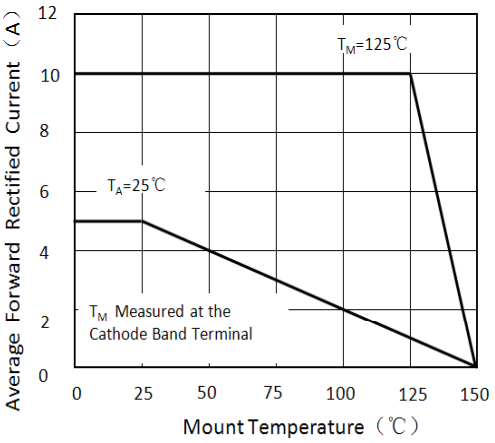


Figure 1.Forward Current Derating Curve

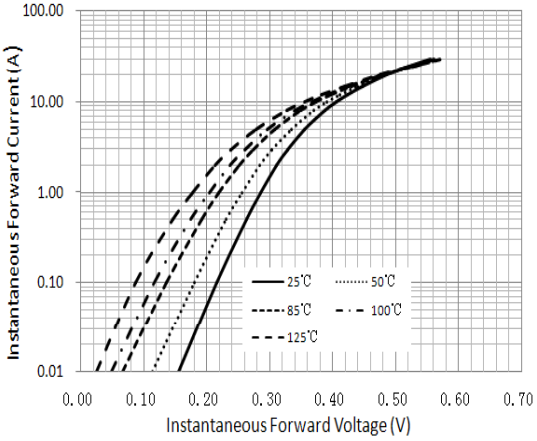


Figure 2. Typical Instantaneous Forward Characteristics

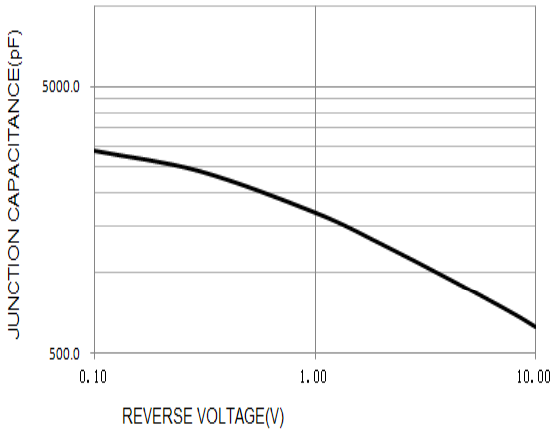


Figure 3. Typical Junction Capacitance

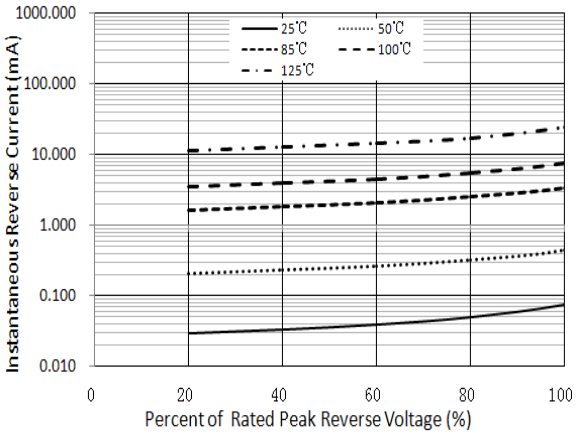


Figure 4. Typical Reverse Characteristics

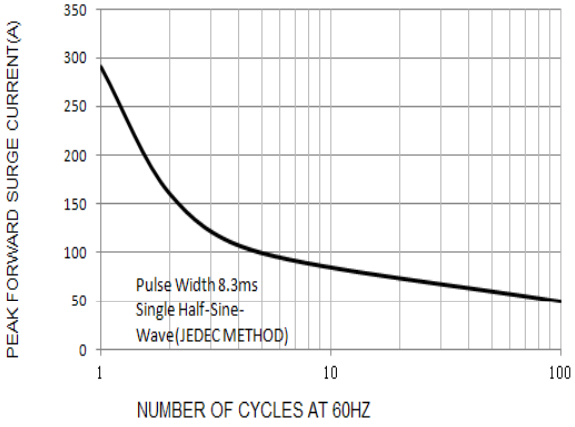
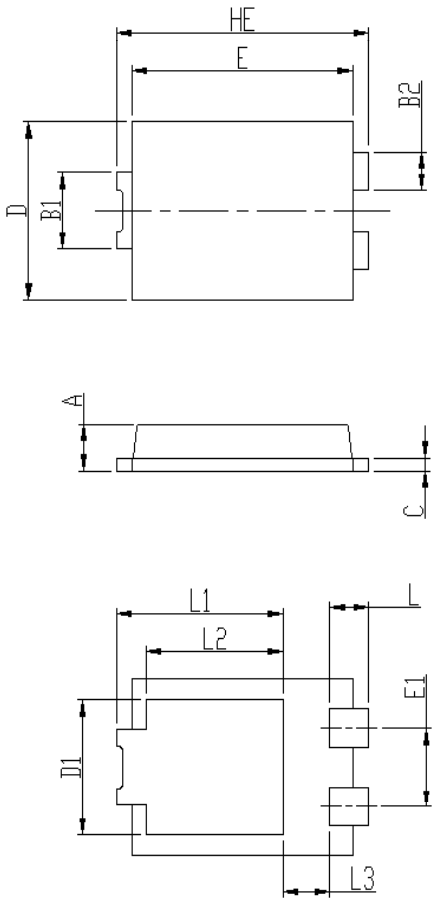


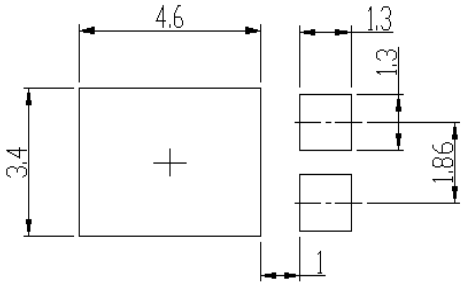
Figure 5.Maximum Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
HE	6.4	6.6	0.252	0.260
E	5.6	5.8	0.220	0.228
D	4.1	4.3	0.161	0.169
B1	1.7	1.9	0.067	0.075
B2	0.8	1	0.031	0.039
A	1.05	1.2	0.041	0.047
C	0.3	0.4	0.012	0.016
L	0.85	1.1	0.033	0.043
L1	4.2	4.4	0.165	0.173
L2	3.52 Typ.		0.139 Typ.	
L3	1.1	1.4	0.043	0.055
D1	3	3.3	0.118	0.130
E1	1.86 Typ.		0.073 Typ.	

Soldering footprint

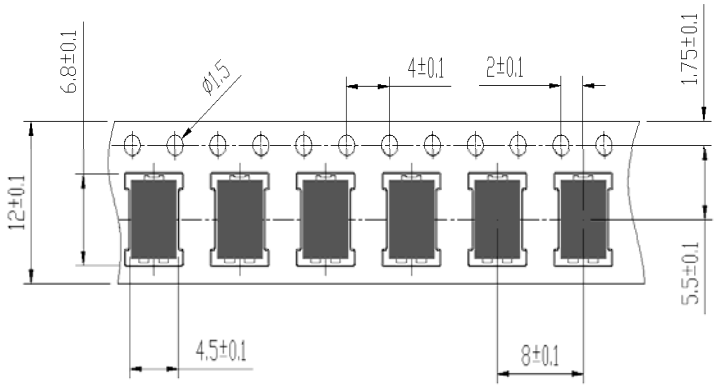


Packing Information

Packing quantities:

5000 pcs/Reel，12mm Tape, 13" Reel

Tape & Reel Specification



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