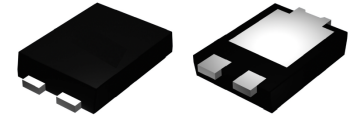


## Features

- Low leakage current
- Schottky barrier rectifiers
- Low forward voltage drop
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds

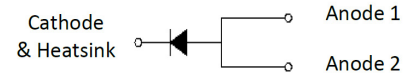


**RoHS**  
COMPLIANT

TO-277

## Applications

For use of fast switching in RF module, lighting, cellular phone, portable device, power supplies and other consumer applications.



Schematic Diagram

## Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	SGC1020S	SGC1030S	SGC1040S	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	20	30	40	V
Maximum RMS Voltage	V <sub>RMS</sub>	14	21	28	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	20	30	40	V
Maximum Average Forward Rectified Current	I <sub>F(AV)</sub>	10			A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200			A
Typical Thermal Resistance, Junction to Ambient <sup>1</sup>	R <sub>θJA</sub>	40			°C/W
Typical Thermal Resistance, Junction to Case <sup>1</sup>	R <sub>θJC</sub>	15			°C/W
Typical Thermal Resistance, Junction to Lead <sup>1</sup>	R <sub>θJL</sub>	7			°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150			°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150			°C

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward Drop Voltage	V <sub>F</sub>	I <sub>F</sub> =1A, T <sub>A</sub> =25°C	0.30	0.35	V
		I <sub>F</sub> =2A, T <sub>A</sub> =25°C	0.33	0.38	
		I <sub>F</sub> =8A, T <sub>A</sub> =25°C	0.42	0.44	
		I <sub>F</sub> =10A, T <sub>A</sub> =25°C	0.44	0.45	
		I <sub>F</sub> =1A, T <sub>A</sub> =125°C	0.16	0.20	
		I <sub>F</sub> =2A, T <sub>A</sub> =125°C	0.20	0.24	
		I <sub>F</sub> =8A, T <sub>A</sub> =125°C	0.38	0.42	
		I <sub>F</sub> =10A, T <sub>A</sub> =125°C	0.40	0.43	
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =35V, T <sub>J</sub> =25°C	0.07	0.3	mA
		V <sub>R</sub> =40V, T <sub>J</sub> =25°C	0.08	0.3	
		V <sub>R</sub> =35V, T <sub>J</sub> =100°C	4.5	35	
		V <sub>R</sub> =40V, T <sub>J</sub> =100°C	5.0	39	
Typical Junction Capacitance	C <sub>J</sub>	4.0V, 1MHZ	950		pF

Note:

1. Mounted on copper pad area of 30 x 30mm to each terminal.

## Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

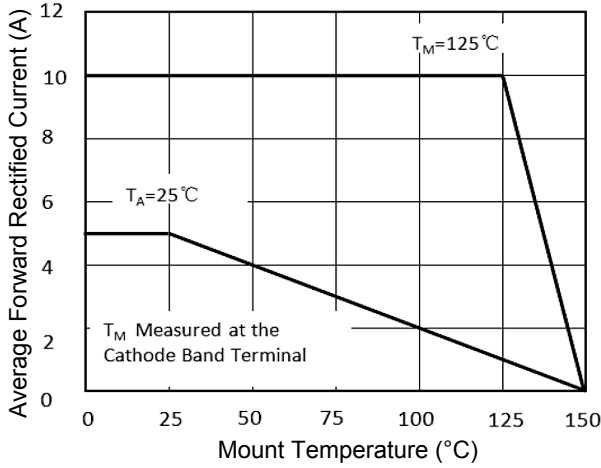


Figure 1. Forward Current Derating Curve

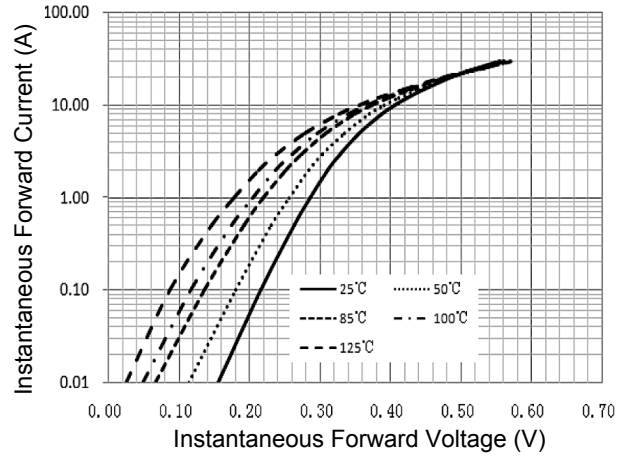


Figure 2. Typical Instantaneous Forward Characteristics

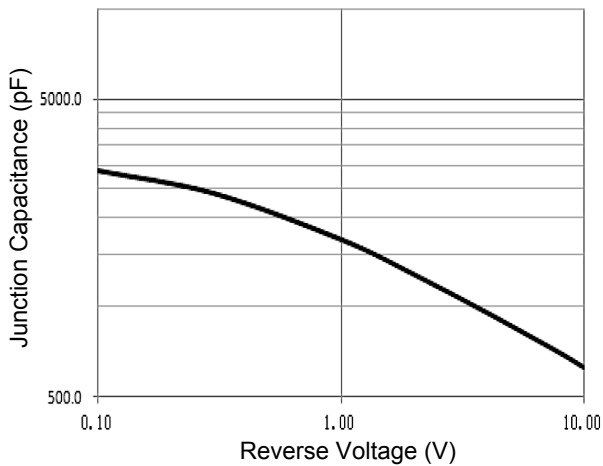


Figure 3. Typical Junction Capacitance

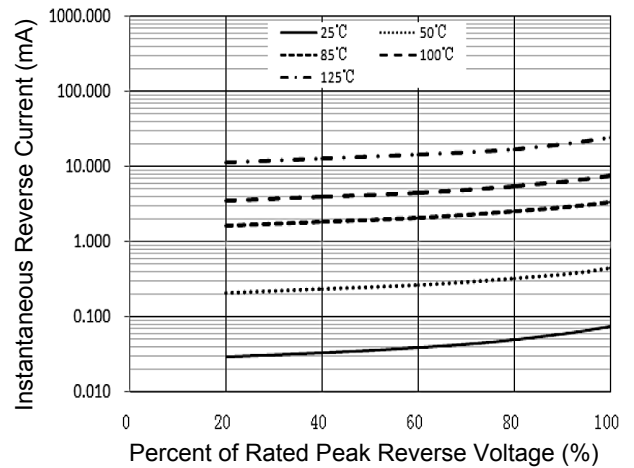


Figure 4. Typical Reverse Characteristics

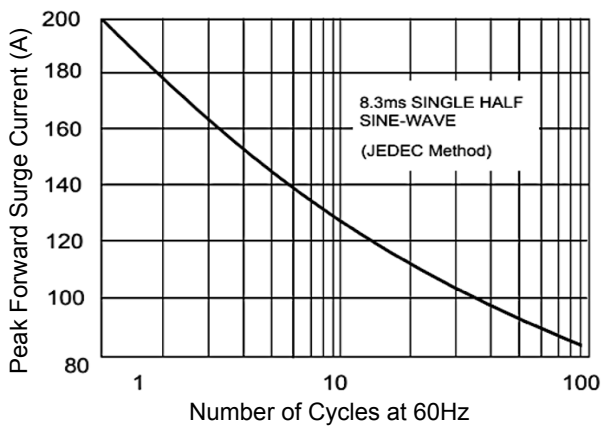
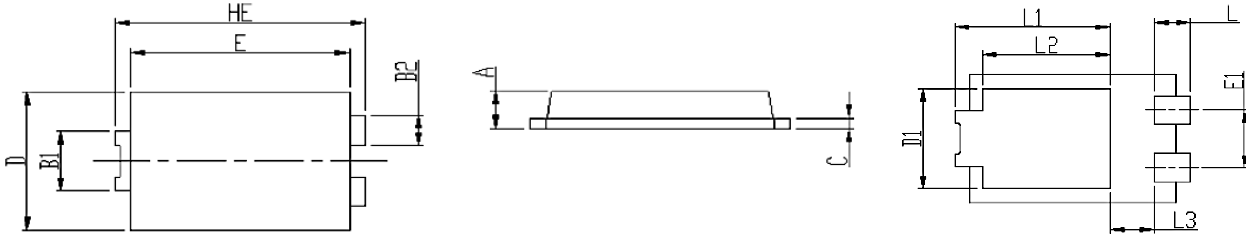


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current

# SGC1020S thru SGC1040S

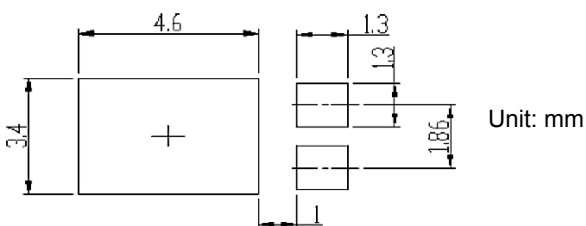
Surface Mount Schottky Rectifiers  
 Reverse Voltage 20V to 40V Forward Current 10A

## Package Outline Dimensions (TO-277)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
HE	6.40	6.60	0.252	0.260
E	5.60	5.80	0.220	0.228
D	4.10	4.30	0.161	0.169
B1	1.70	1.90	0.067	0.075
B2	0.80	1.00	0.031	0.039
A	1.05	1.20	0.041	0.047
C	0.30	0.40	0.012	0.016
L	0.85	1.10	0.033	0.043
L1	4.20	4.40	0.165	0.173
L2	3.52 TYP		0.139 TYP	
L3	1.10	1.40	0.043	0.055
D1	3.00	3.30	0.118	0.130
E1	1.86 TYP		0.073 TYP	

## Recommended Pad Layout



## Order Information

Device	Package	Marking	Carrier	Quantity
SGC1020S	TO-277	C1020S	Tape & Reel	5,000 Pcs / Reel
SGC1030S	TO-277	C1030S	Tape & Reel	5,000 Pcs / Reel
SGC1040S	TO-277	C1040S	Tape & Reel	5,000 Pcs / Reel