

10A,20-45V Schottky Barrier Rectifiers

Features

- Low leakage current
- Schottky barrier diodes
- Low forward voltage drop
- Very low profile - typical height of 1.1 mm
- 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



eSGC (TO-277B)

Applications

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

Maximum Ratings & Electrical Characteristics (T _A =25°C unless otherwise noted)						
Parameter	Symbol	SGC1020S	SGC1030S	SGC1040S	SGC1045S	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	45	V
Maximum RMS voltage	V _{RMS}	14	21	28	31.5	V
Maximum DC blocking voltage	V _{DC}	20	30	40	45	V
Maximum average forward rectified current	I _{F(AV)}	10				A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	200				A
Operating junction temperature range	T _J	-55 to +150				°C
Storage temperature range	T _{STG}	-55 to +150				°C

Thermal-Mechanical Specifications (T _A =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R _{θJA}	40	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	15	°C/W
Thermal Resistance, Junction to Lead	R _{θJL}	7	°C/W

Electrical Specifications (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Typ	Max	Unit	
Forward drop voltage	V _F	I _F =1A	T _A =25°C	0.30	0.35	V
		I _F =2A		0.33	0.38	
		I _F =8A		0.42	0.44	
		I _F =10A		0.44	0.45	
		I _F =1A	T _A =125°C	0.16	0.20	
		I _F =2A		0.20	0.24	
		I _F =8A		0.38	0.42	
		I _F =10A		0.40	0.43	
Reverse leakage current	I _R	V _R =35V	T _J =25°C	0.07	0.3	mA
		V _R =40V		0.08	0.3	
		V _R =35V	T _J =100°C	4.5	35	
		V _R =40V		5.0	39	
Typical junction capacitance	C _J	4.0V 1 MHz	950		pF	

Note:

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

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

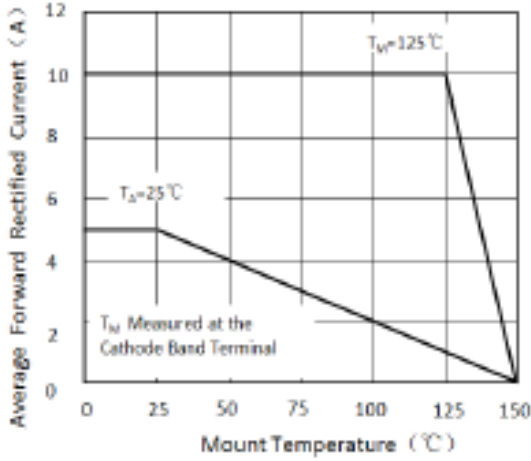


Figure 1. Forward Current Derating Curve

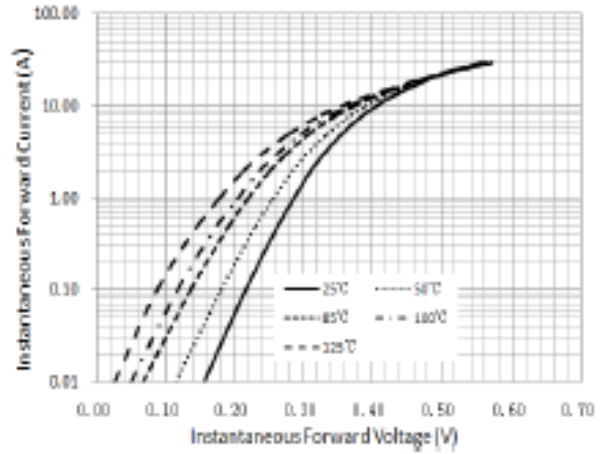


Figure 2. Typical Instantaneous Forward Characteristics

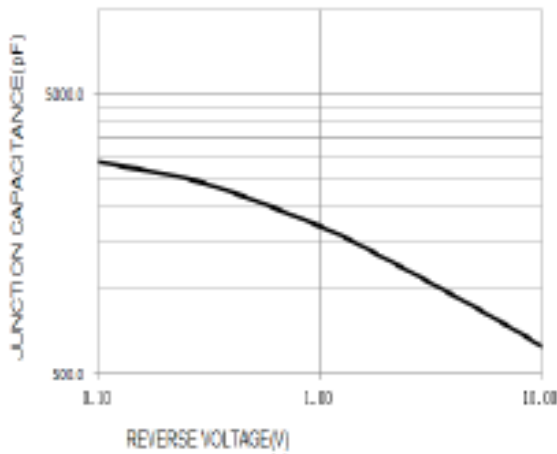


Figure 3. Typical Junction Capacitance

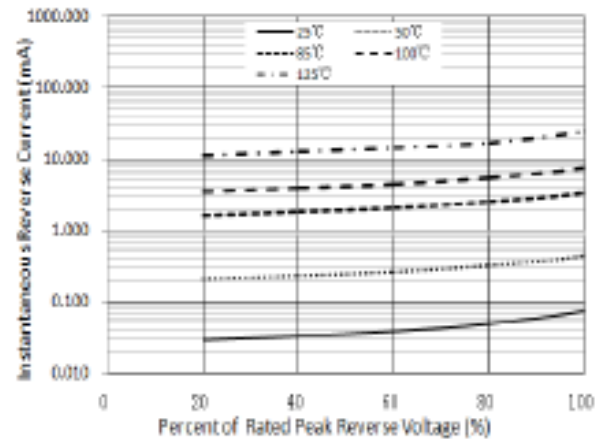


Figure 4. Typical Reverse Characteristics

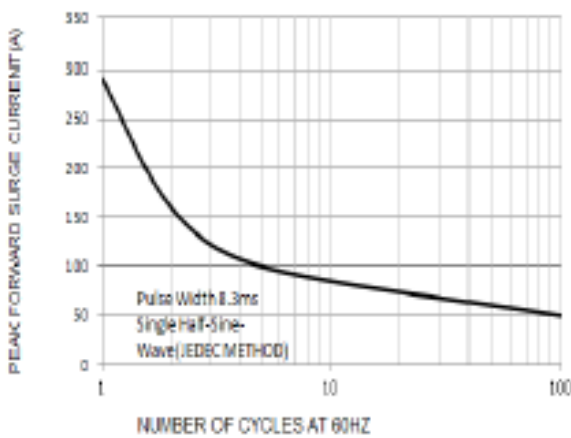
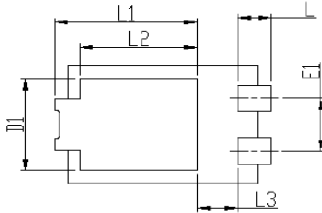
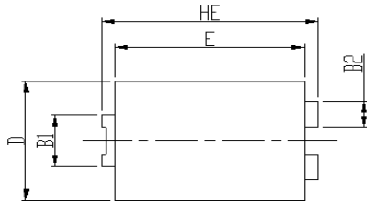


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions

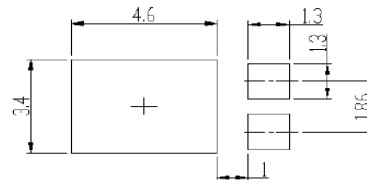
in inches (millimeters)

eSGC (TO-277B)



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



Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.11	Modify document format
Rev.C	2023.12.29	Modify package name

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