15A,45V Schottky Barrier Rectifier

Features

- Low leakage current
- Schottky barrier diode
- 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℃/10 seconds

RoHS
COMPLIANT

eSGC (TO-277B)

Applications

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

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)			
Parameter	**Symbol**	**SGC1545SA**	**Unit**
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum RMS voltage	V_{RMS}	31.5	V
Maximum DC blocking voltage	V_{DC}	45	V
Maximum average forward rectified current	$I_{F(AV)}$	15	A
Peak forward surge current,8.3ms single half sine-wave superimposed on rated load	I_{FSM}	300	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_{thJA}	40	°C /W
Thermal Resistance, Junction to Case	R_{thJC}	15	°C /W
Thermal Resistance, Junction to Lead	R_{thJL}	7	°C /W

Electrical Specifications(T_A=25℃ unless otherwise noted)						
Parameter	**Symbol**	**Test Conditions**		**Typ**	**Max**	**Unit**
Forward drop voltage	V_F	I_F=1A	T_A=25℃	0.30	0.35	V
		I_F=2A		0.33	0.38	
		I_F=15A		0.46	0.49	
		I_F=1A	T_A=85℃	0.23	0.28	
		I_F=2A		0.26	0.32	
		I_F=15A		0.44	0.47	
		I_F=1A	T_A=125℃	0.18	0.22	
		I_F=2A		0.22	0.25	
		I_F=15A		0.43	0.46	
Reverse leakage current @V_R	I_R	T_J =25℃		0.08	0.2	mA
		T_J =85℃		3.5	8	
		T_J =125℃		25	35	
Junction capacitance	C_J	V_R=4.0V, f=1MHZ		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)

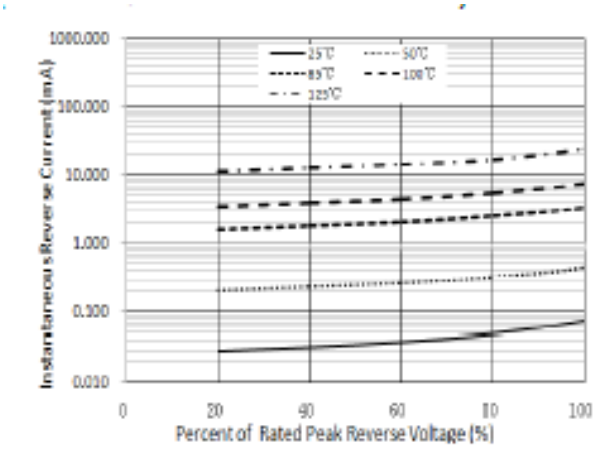


Figure 1. Typical Reverse Characteristics

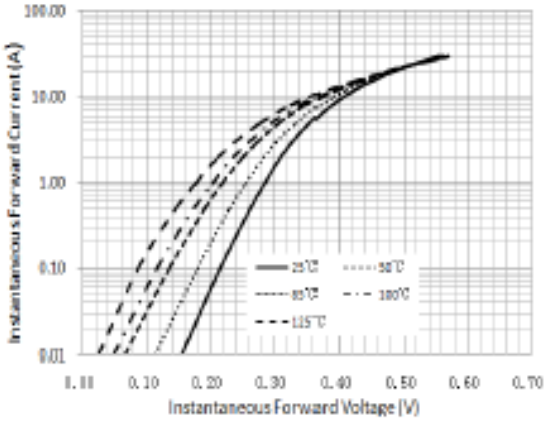


Figure 2. Typical Instantaneous Forward Characteristics

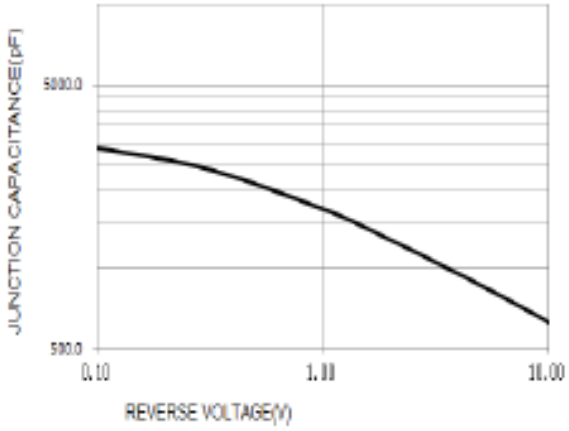


Figure 3. Typical Junction Capacitance

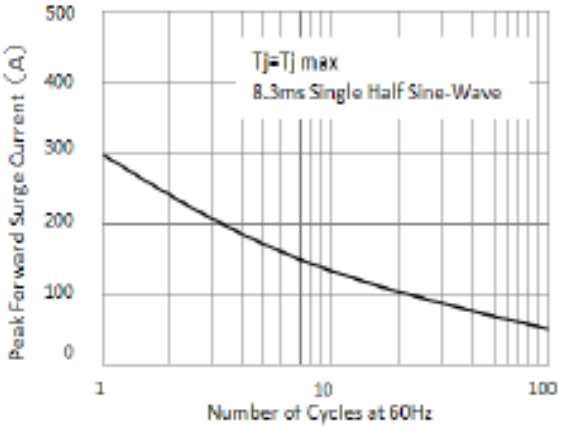


Figure 4.Maximum Non-Repetitive Peak Forward Surge Current

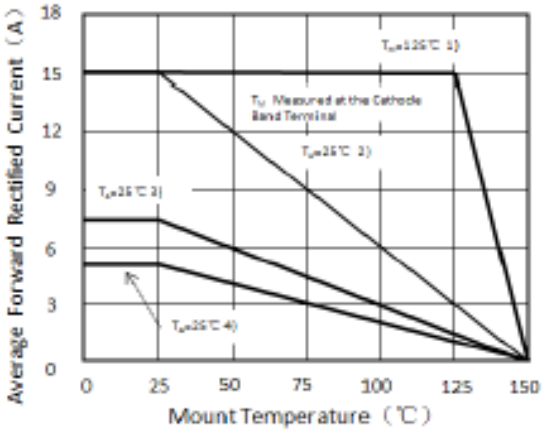


Figure 5.Forward Current Derating Curve

1) Mounted on P.C.B with 30*30mm copper pad area

2) Mounted on P.C.B with 30*30mm copper pad area ($R_{\theta JA}$=28℃/W)

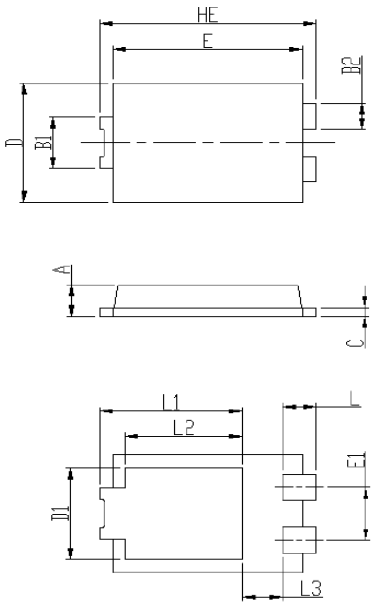
3) Mounted on P.C.B with 30*30mm copper pad area FR4 PCB($R_{\theta JA}$=39℃/W)

4) Fre air, Mounted on recommended copper pad area FR4 PCB($R_{\theta JA}$=85℃/W)

Package Outline Dimensions

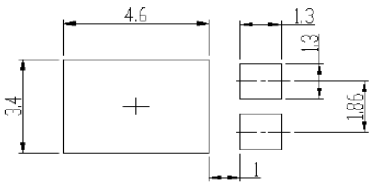
in inches (millimeters)

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



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