MBR0520

SCHOTTKY BARRIER DIODE

1. Features

SOD-123

- Ideal for printed circuit board.
- Low forward voltage drop and fast switching.
- Guard ring for enhanced ruggedness.
- High Conductance.

2. Mechanical Data

- Case:Molded Plastic,SOD-123.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking:SC
- Mounting Position : Any.

3. Maximum Ratings

Electrical Characteristics Rating at 25℃ ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
DC reverse voltage	V_R	20	V
Mean rectifying current	I_O	0.5	A
Peak Forward Surge Current (at tp ≤ 8.3 ms)	I_{FSM}	5.5	A
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	340 [1]	˚C/W
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	150	˚C/W
Junction Temperature Range	T_J	-65 to+125	˚C
Storage Temperature Range	T_{stg}	-65 to+150	˚C

4. Electrical Characteristics (T_a=25℃ unless otherwise noted)

Parameters	Symbol	Cindition	Min	TYP	Max	Unit
Forward Voltage	V_F	I_F =0.1A	-	-	0.375	V
		I_F =0.5A	-	-	0.44	
Maximum Leakage Current	I_{RM}	V_R = 20V	-	-	150	μA
Total Capacitance	C_{tot}	f=100KHz to 1MHz, V_R = 5 V	-	-	110	pF

Note：

1. FR-4 or FR-5 = 3.5 X 1.5 inches using minimum recommended land pads.

5. Rating And Characteristic Curves

Fig.1 Typical Forward Voltage

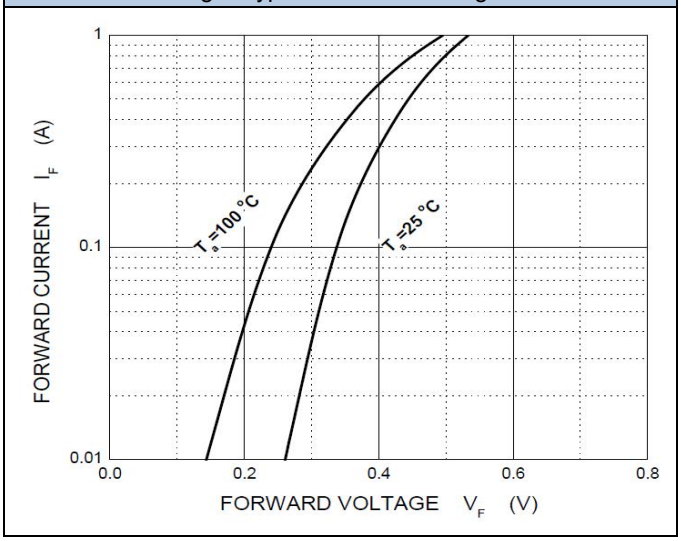


Fig.2 Typical Reverse Current

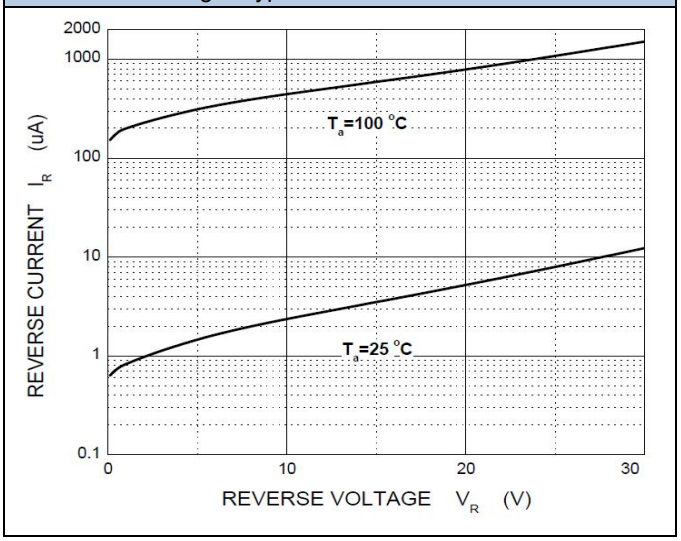
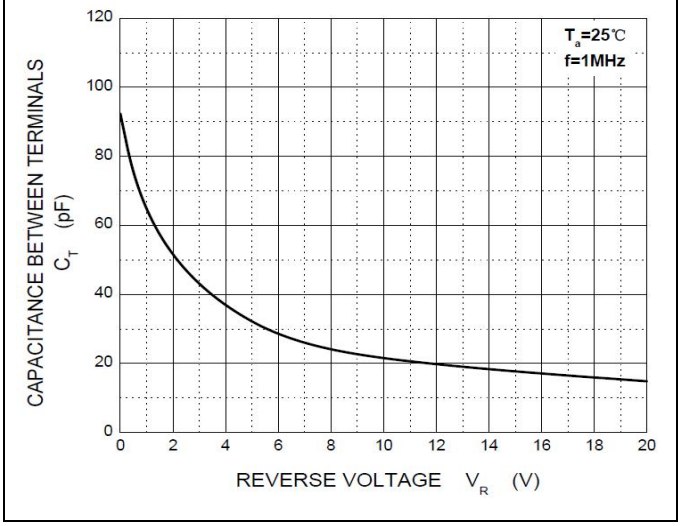
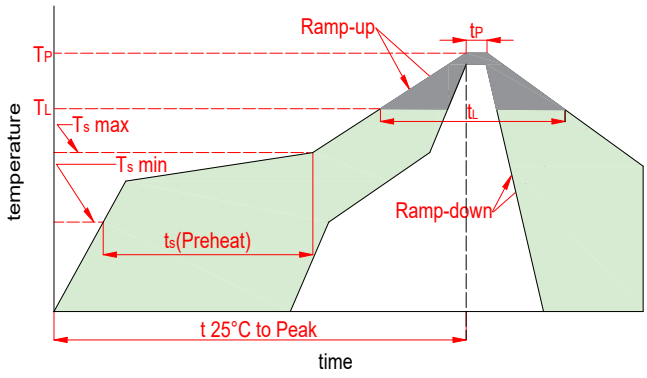


Fig.3 Typical Capacitance

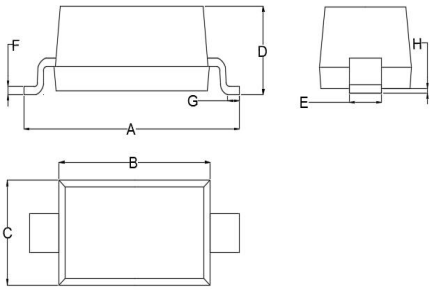


6. Soldering Parameters



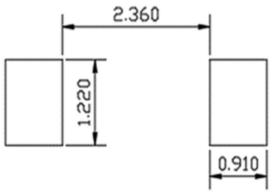
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s(min))	150℃
	Temp. max(T_s(min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_S(max) to T_L-Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		$260^{+0/-5}$℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions

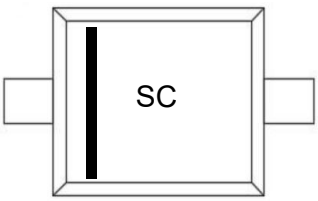


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.136	0.152	3.450	3.850
B	0.100	0.110	2.550	2.800
C	0.059	0.067	1.500	1.700
D	0.035	0.049	0.900	1.250
E	0.018	0.028	0.450	0.700
F	0.004	0.006	0.090	0.150
G	0.008	0.020	0.200	0.500
H	0.000	0.004	0.010	0.100

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Type	Tape Width (mm)	Quantity(pcs)
SOD-123	MBR0520	8	3000

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