



1. Features

SOD-123

- Low forward voltage
- Package Designed for Optimal Automated Board Assembly



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:MC
- Mounting Position : Any.



3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
DC reverse voltage	V_R	30	V
Mean rectifying current	I_O	1	A
Peak Forward Surge Current (at $t_p \leq 8.3$ ms)	I_{FSM}	5.5	A
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	230 ¹	°C/W
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	108 ¹	°C/W
Junction Temperature Range	T_J	-65 to+125	°C
Storage Temperature Range	T_{stg}	-65 to+125	°C

4. Electrical Characteristics ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameters	Symbol	Cindition	Min	TYP	Max	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 1\text{mA}$	30	-	-	V
Forward Voltage	V_F	$I_F = 0.1\text{A}$	-	-	0.35	V
		$I_F = 0.7\text{A}$	-	-	0.5	
Reverse Current	I_R	$V_R = 30\text{V}$	-	-	0.2	mA
		$V_R = 5\text{V}$	-	-	50	μA

Note:

1. FR-4 or FR-5 = 3.5 X 1.5 inches using a 1 inch Cu pad.



5. Rating And Characteristic Curves

Fig.1 Typical Forward Voltage

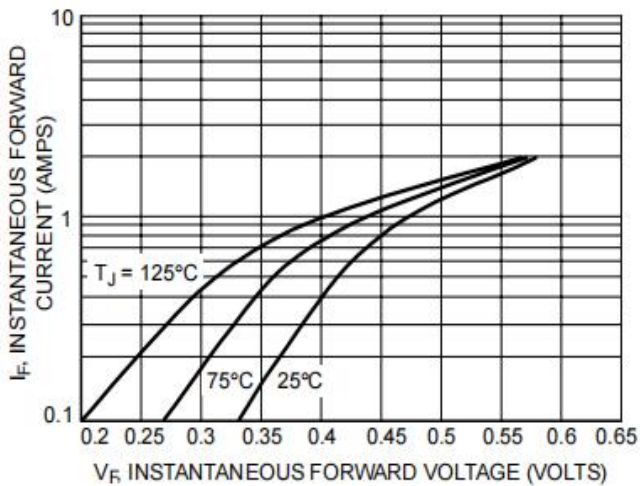


Fig.2 Typical Reverse Current

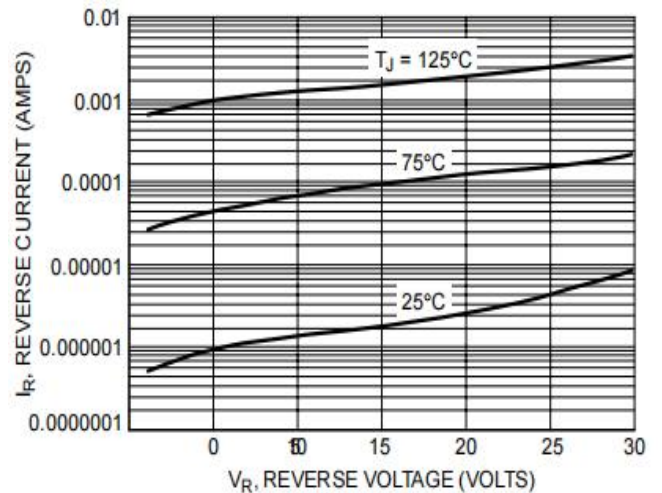


Fig.3 Typical Capacitance

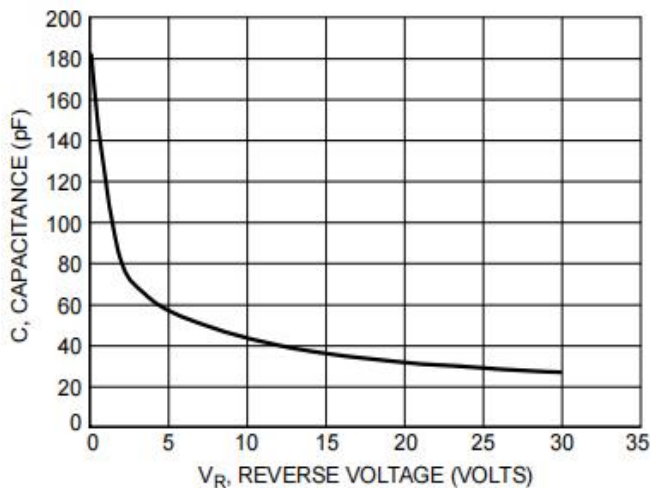


Fig.4 Current Derating, Lead, $R_{\theta JL} = 108^\circ\text{C/W}$

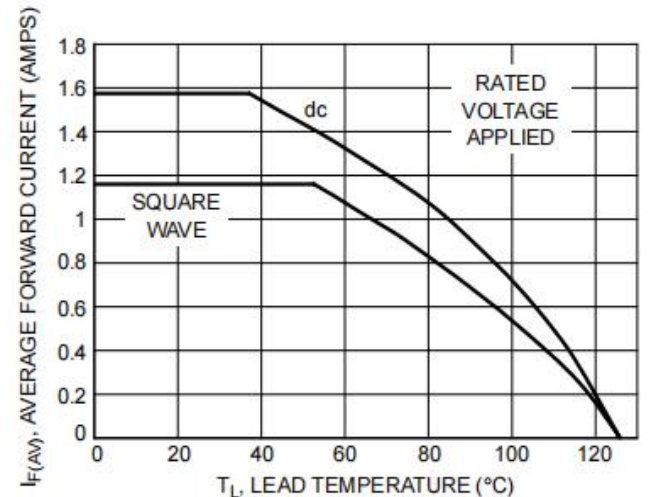


Fig.5 Current Derating, Lead, $R_{\theta JL} = 108^\circ\text{C/W}$

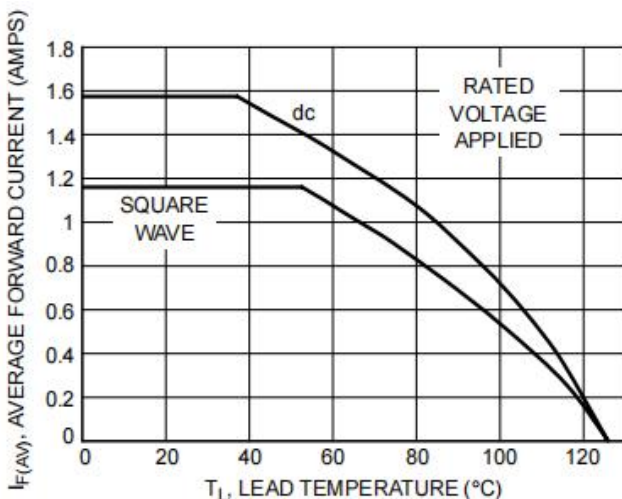
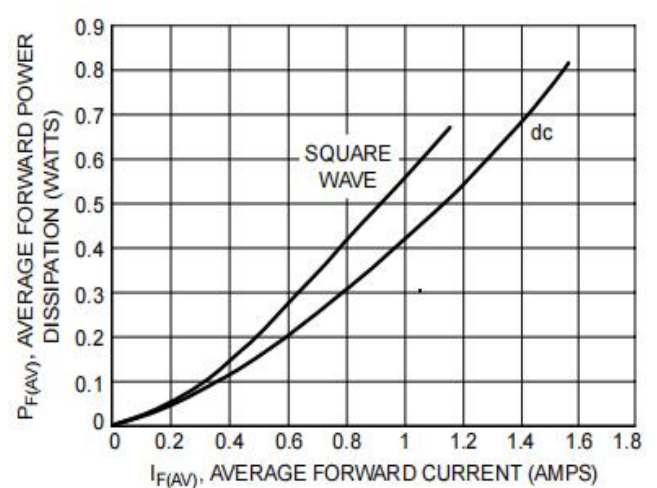
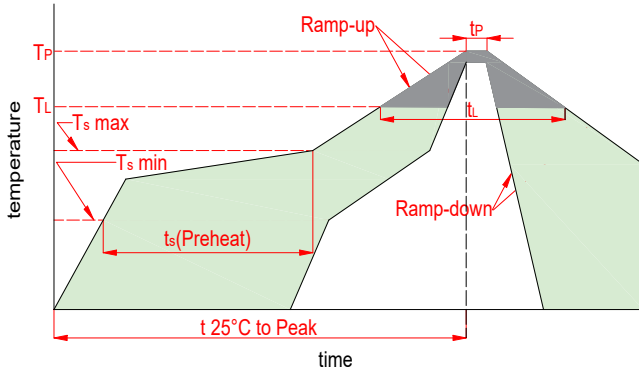


Fig.6 Forward Power Dissipation



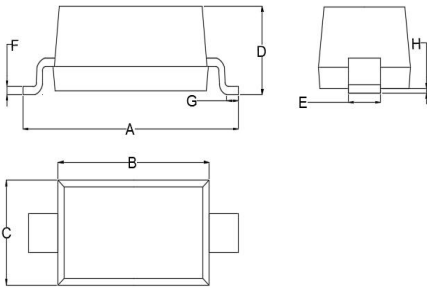


6. Soldering Parameters



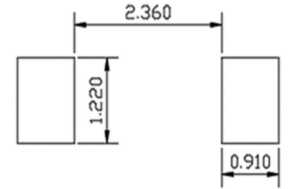
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+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

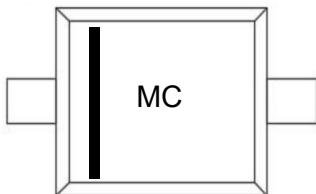


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.136	0.152	3.450	3.850
B	0.100	0.110	2.550	2.800
C	0.059	0.067	1.500	1.700
D	0.035	0.049	0.900	1.250
E	0.018	0.028	0.450	0.700
F	0.004	0.006	0.090	0.150
G	0.008	0.020	0.200	0.500
H	0.000	0.004	0.010	0.100

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Type	Tape Width (mm)	Quantity(pcs)
SOD-123	MBR130W	8	3000



Important Notice and Disclaimer

- Reproducing and modifying information of the document is prohibited without from XINNUO.
- XINNUO reserves the right to make changes to this document and its products and specifications.
- XINNUO disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- XINNUO does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the here in document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. XINNUO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown her are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify XINNUO for any damages resulting from such improper use or sale.
- Since XINNUO uses lot number as the tracking base, please provide the lot number for tracking when complaining.