

MBR0520~MBR0580

ROHS

SOD-123 Plastic-Encapsulate Diodes

Features

- ◆ Lead Free Finish/RoHS Compliant
- ◆ Extremely Low Thermal Resistance
- ◆ For Surface Mount Application and High Current Capability

Mechanical Data

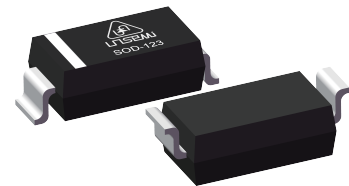
- ◆ Case: SOD-123
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Polarity: Color band denotes cathode end
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Lead Finish : Lead Free
- ◆ Device Marking:
MBR0520 : R2 , MBR0530 : R3 , MBR0540 : R4
MBR0560 : R6 , MBR0580 : R8

Mechanical Characteristics



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SOD-123



Functional Diagram



Parameter	Symbol	MBR 0520	MBR 0530	MBR 0540	MBR 0560	MBR 0580	Units
Repetitive Peak Reverse Voltage	VRRM	20	30	40	60	80	V
Reverse Voltage	VR	20	30	40	60	80	V
Average Forward Current	IO	0.5					A
Non-repetitive Peak Forward Surge Current @t=8.3ms	IFSM	5.5					A
Power Dissipation	PD	0.41					W
Thermal Resistance Junction to Ambient	R _{θJA}	244					°C/W
Junction Temperature	TJ	125					°C
Storage Temperature	Tstg	-55~+150					°C

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Forward Voltage	V _F	I _F =500mA	MBR0520	-	-	0.45 V
			MBR0530	-	-	0.55 V
			MBR0540	-	-	0.55 V
			MBR0560	-	-	0.70 V
			MBR0580	-	-	0.80 V
Reverse Current	I _R	V _R =20V	MBR0520	-	-	80 μA
		V _R =30V	MBR0530	-	-	80 μA
		V _R =40V	MBR0540	-	-	80 μA
		V _R =60V	MBR0560	-	-	80 μA
		V _R =80V	MBR0580	-	-	80 μA
Capacitance Between Terminals	C _T	V _R =4V, f=1MHZ	-	30	-	pF

Electrical Characteristics Curves

Fig.1 Forward Characteristics

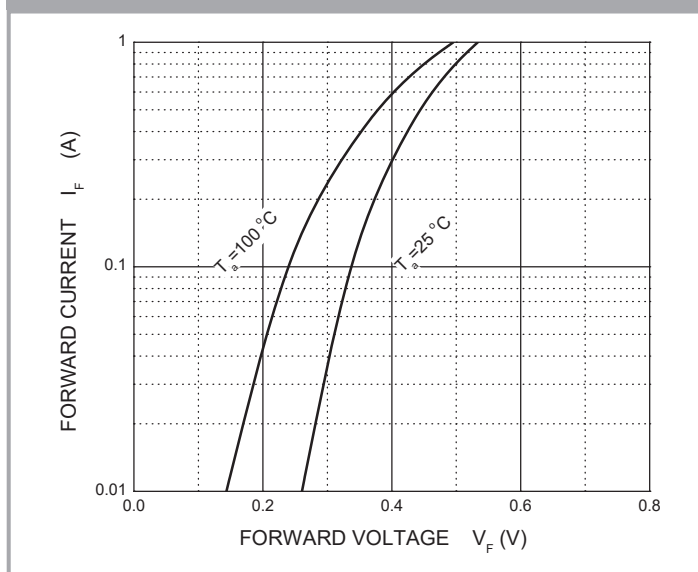
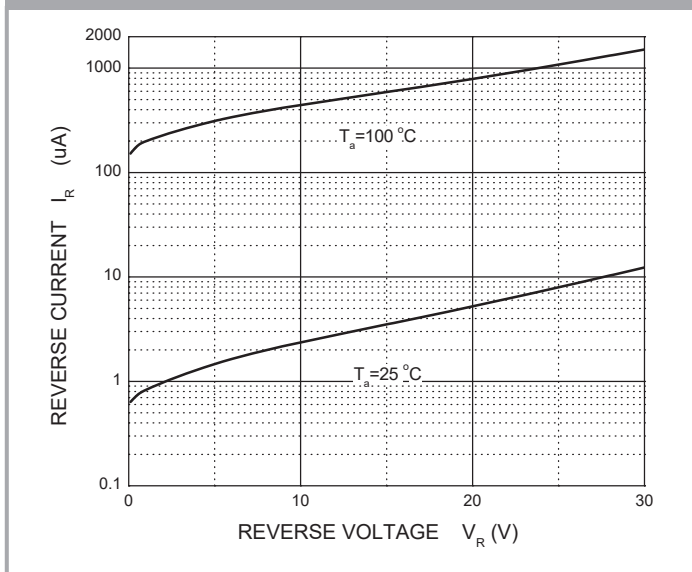


Fig. 2 Reverse Characteristics



Electrical Characteristics Curves

Fig.3 Capacitance Characteristics

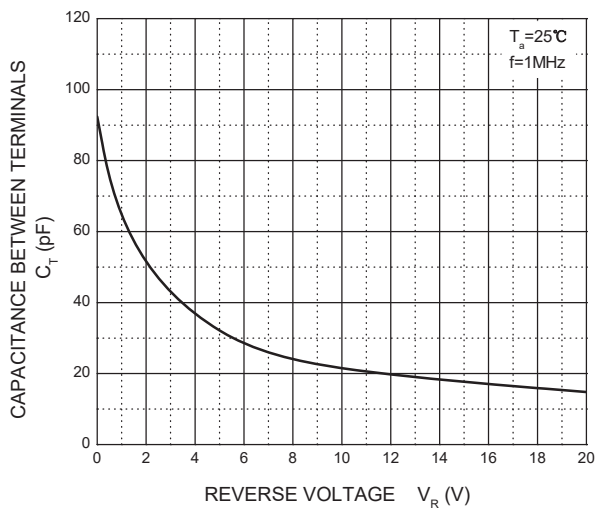
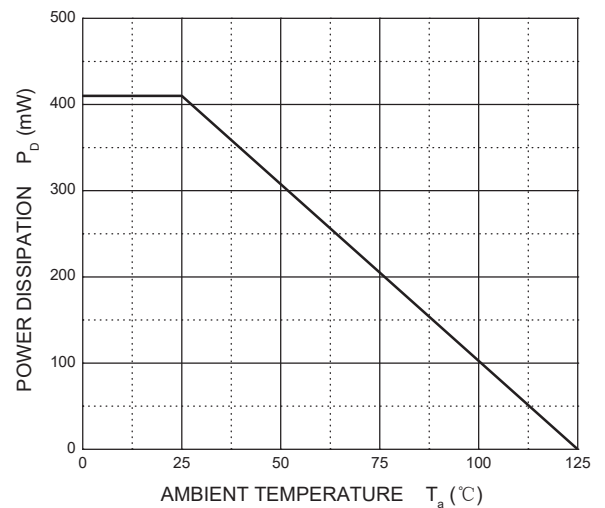
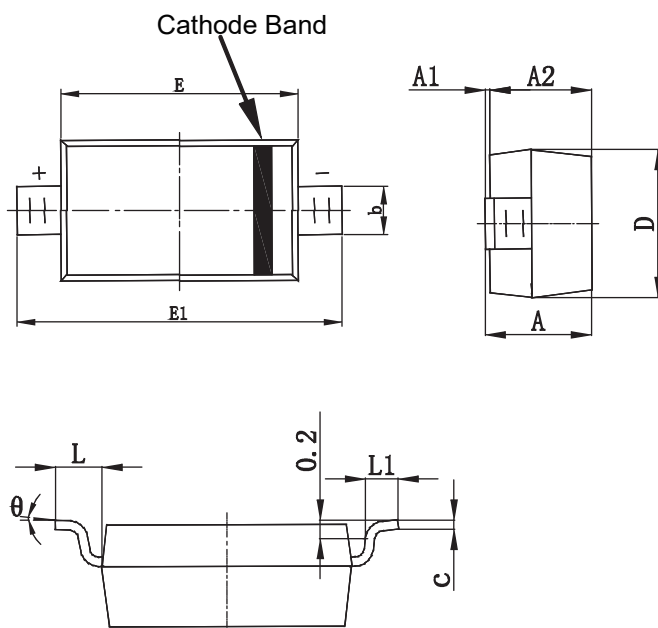


Fig. 4 Power Derating Curve



Package Outline & Dimensions

SOD-123



Dimensions	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.041	0.049	1.050	1.250
A1	0	0.004	0	0.100
A2	0.041	0.045	1.050	1.150
b	0.018	0.026	0.450	0.650
c	0.003	0.006	0.080	0.150
D	0.059	0.067	1.500	1.700
E	0.102	0.110	2.600	2.800
E1	0.140	0.152	3.550	3.850
L	0.020REF		0.500 REF	
L1	0.010	0.018	0.250	0.450
θ	0 $^\circ$	8 $^\circ$	0 $^\circ$	8 $^\circ$

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