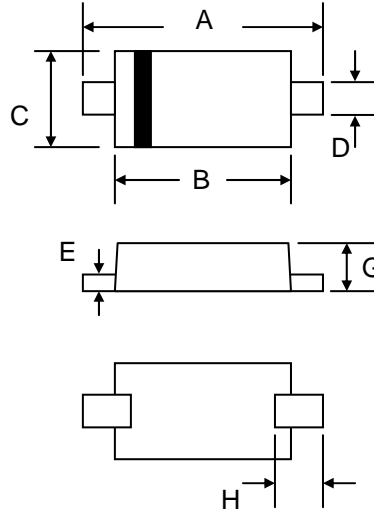


### Features

- **Very Low Forward Voltage**
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Designed for Surface Mount Application
- Plastic Material – UL Recognition Flammability Classification 94V-0



SOD-123FL		
Dim	Min	Max
A	3.30	3.70
B	2.60	2.95
C	1.65	1.95
D	0.75	1.35
E	0.10	0.20
G	0.98	1.08
H	0.50	0.80
All Dimensions in mm		

### Mechanical Data

- Case: SOD-123FL, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.017 grams (approx.)
- Marking: MBR120L K2  
MBR130L K3  
MBR140L K4
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**

### Maximum Ratings @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	MBR120L	MBR130L	MBR140L	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	20	30	40	V
Working Peak Reverse Voltage	$V_{RWM}$				
DC Blocking Voltage	$V_R$				
Forward Continuous Current (Note 1)	$I_F$	1.0			A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	10			A
Thermal Resistance, Junction to Lead (Note 1)	$R_{JL}$	21			$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient (Note 1)	$R_{JA}$	82			
Thermal Resistance, Junction to Ambient (Note 2)	$R_{JA}$	325			
Operating Temperature Range	$T_J$	-65 to +125			$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +150			$^\circ\text{C}$

### Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	MBR120L	MBR130L	MBR140L	Unit
Forward Voltage Drop @ $I_F = 1.0\text{A}$	$V_{FM}$	0.37	0.46		V
Peak Reverse Leakage Current @ DC Blocking Voltage	$I_{RM}$	1.0	0.1		mA

Note: 1. Mounted on FR-4 PCB with 700mm<sup>2</sup> Cu pad.  
1. Mounted on FR-4 PCB with minimum recommended pad size.

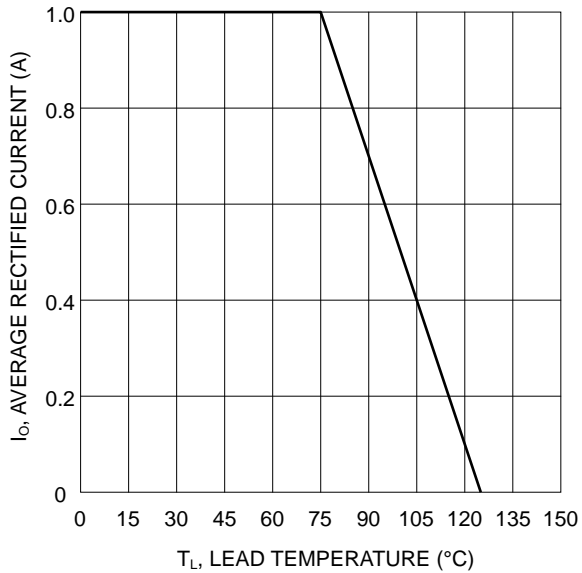


Fig. 1 Forward Current Derating Curve

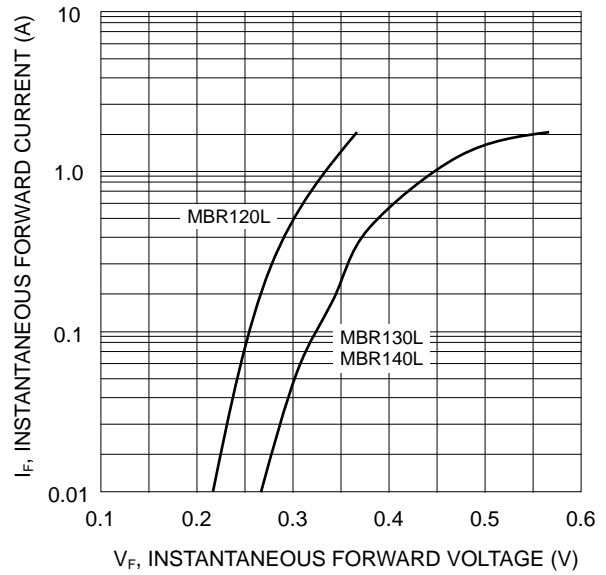


Fig. 2 Typical Forward Characteristics

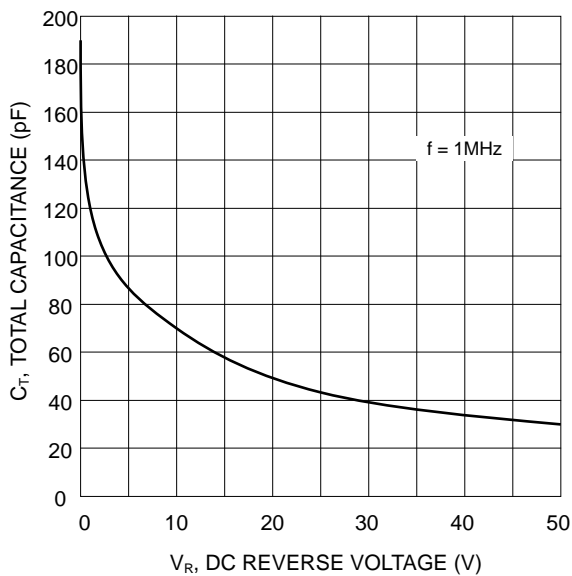


Fig. 3 Total Capacitance vs. Reverse Voltage

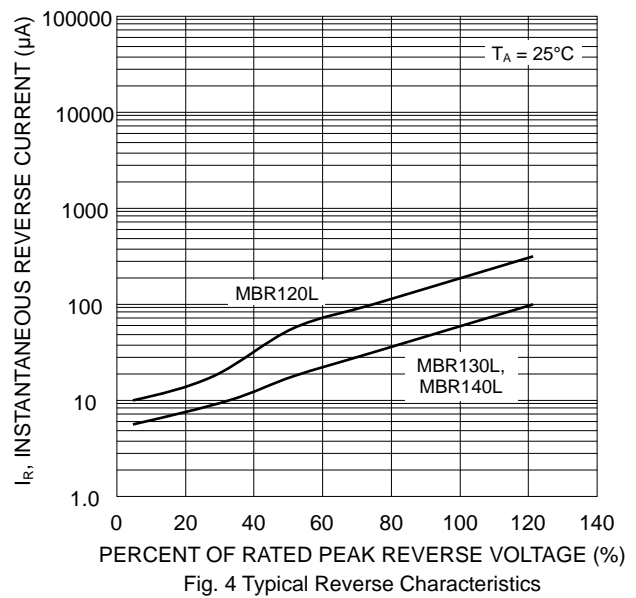


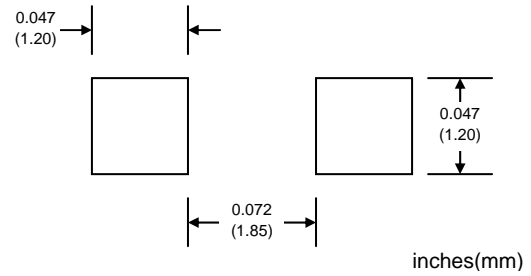
Fig. 4 Typical Reverse Characteristics

## MARKING INFORMATION



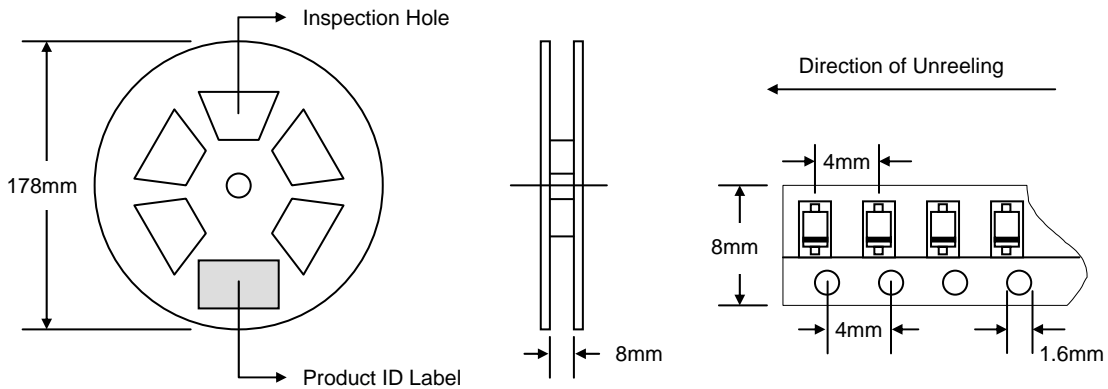
Cathode = Polarity Band  
 K2 = MBR120L  
 K3 = MBR130L  
 K4 = MBR140L

## RECOMMENDED FOOTPRINT



## PACKAGING INFORMATION

### TAPE & REEL




Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
178	3,000	195 x 135 x 195	30,000	370 x 370 x 420	240,000	10.0

**Note:** 1. Anti-static plastic reel, white, water clear or blue color. Inspection hole might be varied in different alignment.  
 2. Components are packed in accordance with EIA standard 481-1 and 481-2.

## ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
MBR120L-T1	SOD-123FL	3000/Tape & Reel
MBR130L-T1	SOD-123FL	3000/Tape & Reel
MBR140L-T1	SOD-123FL	3000/Tape & Reel

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, MBR120L-T1-LF.**

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