

## MBR0520-MBR0540 SURFACE MOUNT SCHOTTKY BARRIER DIODE



### Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring Transient and ESD Protection
- Designed for Surface Mount Application
- Plastic Material —UL Recognition Flammability Classification 94V-0
- Green Products in Compliance with the ROHS Directive
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Schematic & Pin Configuration



### Mechanical Characteristics

- Case: SOD-123, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.01 grams(approx)

### Maximum Ratings@T<sub>A</sub>=25°C unless otherwise specified

Characteristic	Symbol	MBR0520	MBR0530	MBR0540	Units
Marking Code		<b>R2</b>	<b>R3</b>	<b>R4</b>	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	V
Average Rectified Output Current T <sub>L</sub> =75°C	I <sub>o</sub>	0.5			A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	5.5			A
Power Dissipation(Note 1)	P <sub>d</sub>	410			mW
Typical Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	244			°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150			°C

**Electrical Characteristics@T<sub>A</sub>=25°C unless otherwise specified**

Characteristic	Symbol	MBR0520	MBR0530	MBR0540	Units
Forward Voltage @I <sub>F</sub> =0.1A/0.5A	V <sub>FM</sub>	0.3/0.385	0.375/0.43	-/0.51	V
Reverse Leakage Current @ V <sub>R</sub> =50%/100% DC Blocking Voltage	I <sub>RM</sub>	75/250	20/130	10/20	uA
Typical Junction Capacitance(V <sub>R</sub> =0V, f=1.0MHz)	C <sub>j</sub>	170			pF

\* Pulse width < 300 μs, duty cycle < 2%  
Note: 1. Valid provided that terminals are kept at ambient temperature.

**Ratings and Characteristics Curves**

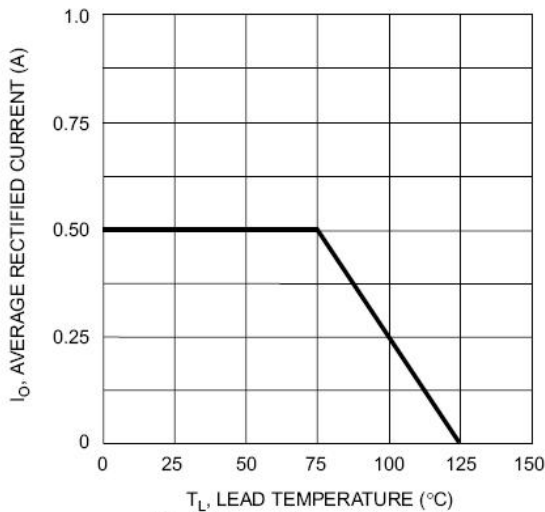


Fig. 1 Forward Current Derating Curve

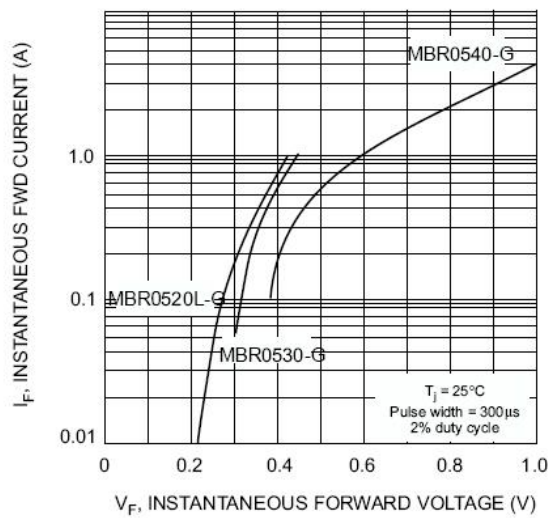


Fig. 2 Typical Forward Characteristics

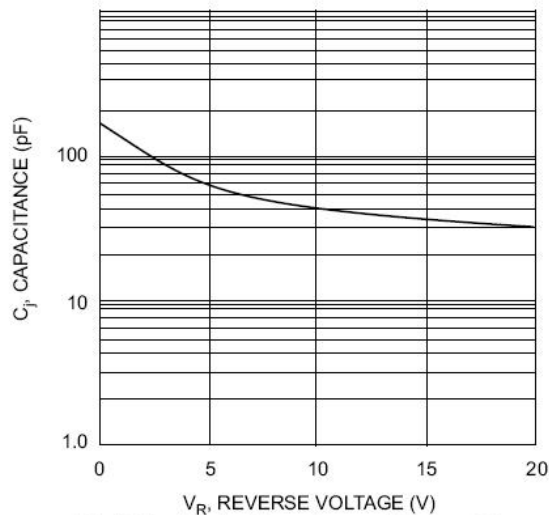


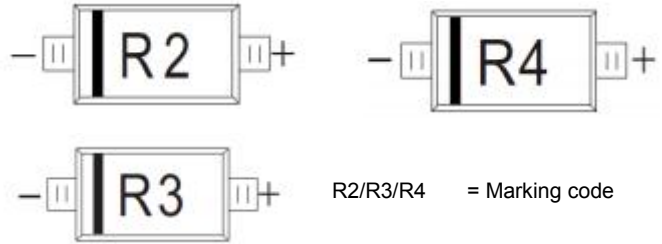
Fig. 3 Typ. Junction Capacitance vs Reverse Voltage

**Ordering Information**

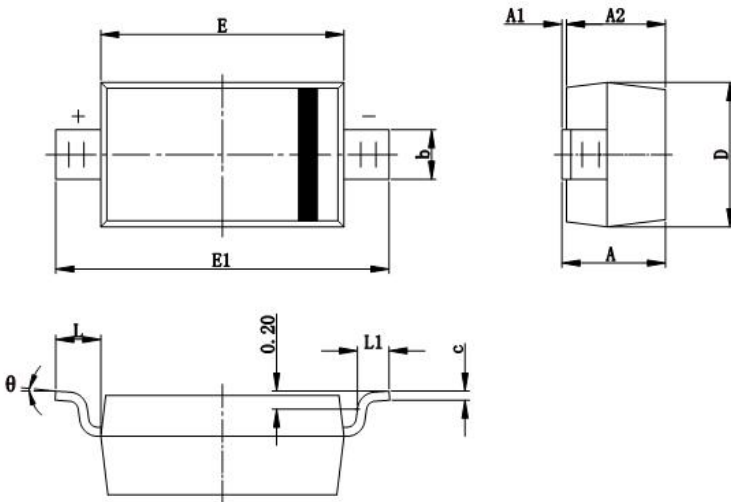
Device	Package	Shipping
MBR0520-MBR0540	SOD-123 (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**

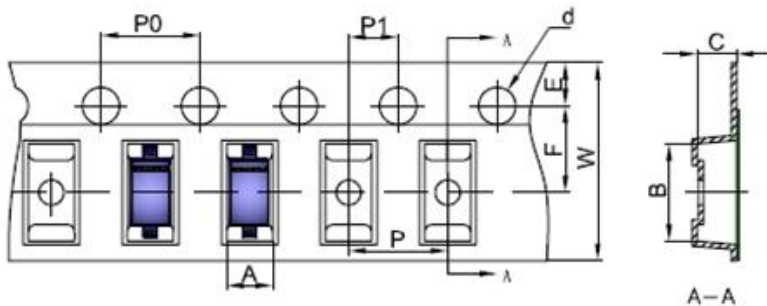


**Mechanical Dimensions SOD-123**



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF.		0.020 REF.	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

**Carrier Tape Specification SOD-123**



SYMBOL	Millimeters	
	Min.	Max.
A	1.80	1.90
B	3.89	3.99
C	1.52	1.62
d	1.45	1.65
E	1.65	1.85
F	3.40	3.60
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
W	7.90	8.30



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