

FEATURES

- Low forward voltage drop.
- Guard ring construction for transient Protection.
- High conductance.
- MSL 1


SOD-123

APPLICATIONS

- 0.5A surface mount schottky barrier rectifier.



MAXIMUM RATING @ Ta=25°C unless otherwise specified

Characteristic	Symbol	MBR0520	MBR0530	MBR0540	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	20	30	40	V
Working Peak Reverse Voltage	V_{RWM}				
DC Reverse Voltage	V_R				
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	V
Average Rectified Output Current @ $T_L = 100^{\circ}\text{C}$	I_O	0.5			A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	5.5			A
Power Dissipation	P_d	410	410		mW
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	182	244		$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{stg}	-65 to +100	-65 to +125		$^{\circ}\text{C}$
Voltage Rate of Change	dv/dt	1000			$\text{V}/\mu\text{s}$

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Characteristic	Symbol	MBR0520	MBR0530	MBR0540	Unit	Test Conditions
Minimum Reverse Breakdown Voltage	$V_{(BR)R}$	20 - -	- 30 -	- - 40	V	$I_R = 250\mu A$ $I_R = 130\mu A$ $I_R = 20\mu A$
Maximum Forward Voltage Drop	V_{FM}	0.300 0.385 - 0.220 0.330 -	0.375 0.430 - - - -	- 0.510 0.620 - 0.460 0.610	V	$I_F = 0.1A, T_j = 25^\circ C$ $I_F = 0.5A, T_j = 25^\circ C$ $I_F = 1.0A, T_j = 25^\circ C$ $I_F = 0.1A, T_j = 100^\circ C$ $I_F = 0.5A, T_j = 100^\circ C$ $I_F = 1.0A, T_j = 100^\circ C$
Maximum Leakage Current	I_{RM}	75 - 250 - -	- 20 - 130 -	- - 10 - 20	μA	$V_R = 10V, T_j = 25^\circ C$ $V_R = 15V, T_j = 25^\circ C$ $V_R = 20V, T_j = 25^\circ C$ $V_R = 30V, T_j = 25^\circ C$ $V_R = 40V, T_j = 25^\circ C$
		5.0 8.0 -	- - -	- 5.0 13	mA	$V_R = 10V, T_j = 100^\circ C$ $V_R = 20V, T_j = 100^\circ C$ $V_R = 40V, T_j = 100^\circ C$
Junction Capacitance	C_J	170			pF	$f = 1MHz, V_R = 0V DC$

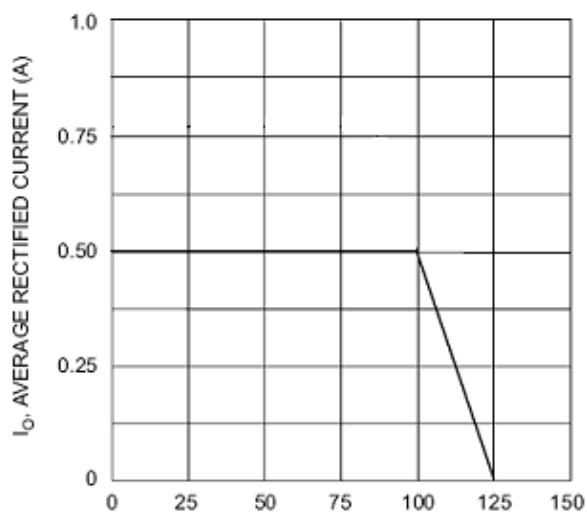
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified


Fig. 1 Forward Current Derating Curve

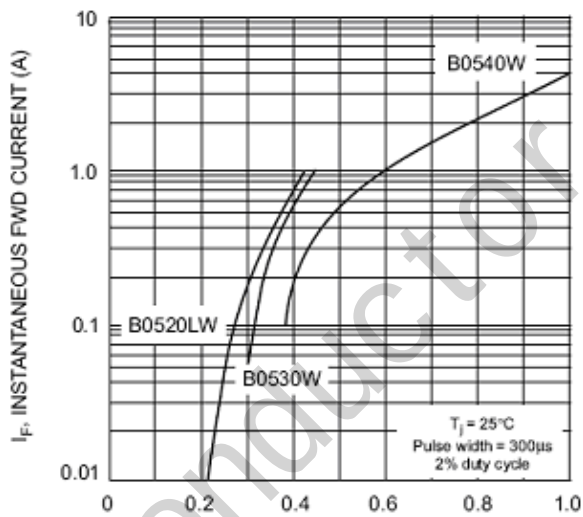


Fig. 2 Typical Forward Characteristics

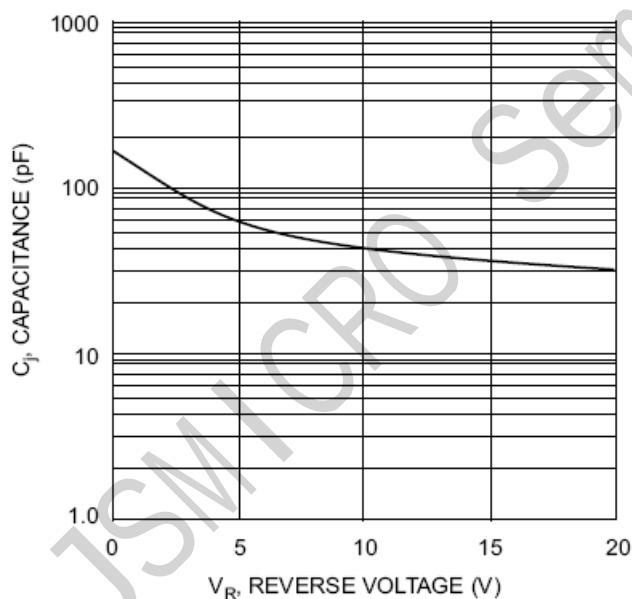
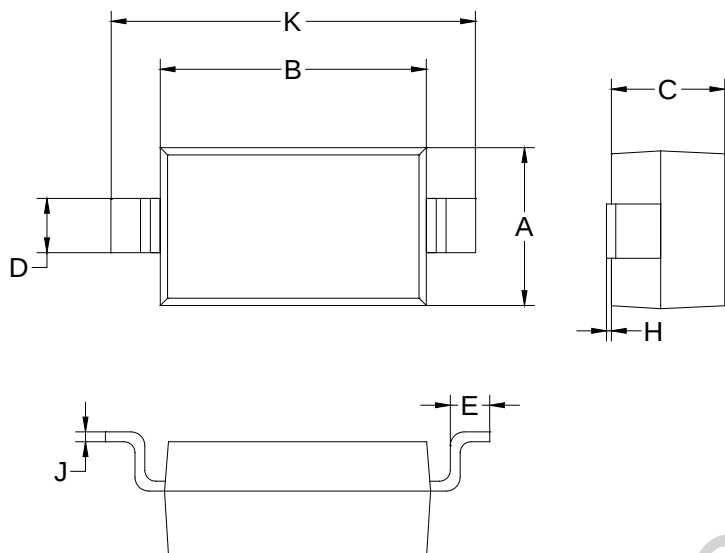


Fig. 3 Typ. Junction Capacitance vs Reverse Voltage

PACKAGE OUTLINE

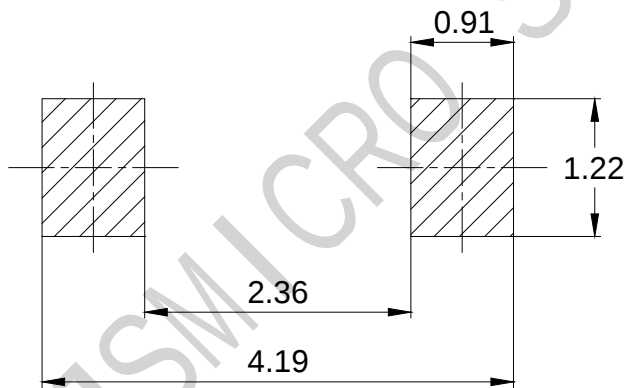
Plastic surface mounted package

SOD-123



SOD-123		
Dim	Min	Max
A	1.45	1.75
B	2.55	2.85
C	1.00	1.30
D	0.50	0.60
E	0.25	0.45
H	0.02	0.10
J	0.05	0.15
K	3.55	3.85
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
MBR0520/30/40T1G	SOD-123	3000pcs / Tape & Reel