

### Surface Mount Schottky Barrier Diodes

**(Pb)** Lead(Pb)-Free

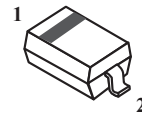
#### Features:

- \*Low Forward Voltage
- \*Very Small Conduction Losses
- \*Schottky Barrier Diodes Encapsulated in a SOD-123 Package

#### Description:

These schottky barrier diodes are designed for high speed switching applications circuit protection, and voltage clamping, Extremely low forward voltage reduces conduction loss, Miniature surface mount package is excellent for hand held and portable applications where space is limited.

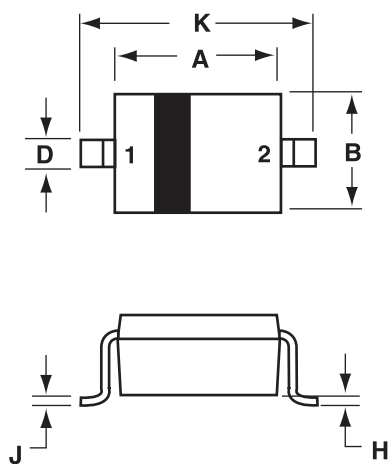
**SMALL SIGNAL  
SCHOTTKY DIODES  
500m AMPERES  
30-40 VOLTS**



**SOD-123**

### SOD-123 Outline Dimensions

Unit:mm



SOD-123		
Dim	Min	Max
A	2.55	2.85
B	1.40	1.80
C	0.95	1.35
D	0.50	0.70
E	0.30 REF	
H	-	0.10
J	-	0.15
K	3.55	3.85

**PIN 1. CATHODE  
2. ANODE**

**Maximum Ratings** (  $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Characteristic	Symbol	B0530W	B0540W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	30	40	V
Average Rectified Output Current	$V_{R(RMS)}$	21	28	V
RMS Reverse Voltage	$I_{FAV}$	500		mA
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimpose on rated load (JEDEC Method)	$I_{FSM}$	5.5		A
Typical thermal Resistance junction to Ambient Note (1)	$R_{\theta JA}$	244		$^{\circ}\text{C}/\text{W}$
Operating & Storage Temperature Range	$T_J$ $T_{STG}$	-55 to +125		$^{\circ}\text{C}$

**Electrical Characteristics** (  $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Characteristic	Symbol	B0530W	B0540W	Unit
Minimum Reverse Breakdown Voltage <sup>(2)</sup> ( $I_R=130\mu\text{A}$ ) ( $I_R=20\mu\text{A}$ )	$V_{(BR)R}$	30 -	- 40	V
Forward Voltage Note <sup>(2)</sup> $I_F=0.1\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=0.5\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=1.0\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=0.5\text{A}$ $T_j=100^{\circ}\text{C}$ $I_F=1.0\text{A}$ $T_j=100^{\circ}\text{C}$	$V_F$	0.375 0.430 . . .	- 0.510 0.620 0.460 0.610	V
Reverse Current Note <sup>(2)</sup> $V_R=15\text{V}$ , $T_j=25^{\circ}\text{C}$ $V_R=20\text{V}$ , $T_j=25^{\circ}\text{C}$ $V_R=30\text{V}$ , $T_j=25^{\circ}\text{C}$ $V_R=40\text{V}$ , $T_j=25^{\circ}\text{C}$ $V_R=20\text{V}$ , $T_j=100^{\circ}\text{C}$ $V_R=30\text{V}$ , $T_j=100^{\circ}\text{C}$	$I_R$	20 . 130 .	. 10 . 20	$\mu\text{A}$
		- .	5.0 13	mA
Junction Capacitance $f=1\text{MHz}$ , $V_R=0\text{V DC}$	$C_j$	170		PF

**Device Marking**

Item	Marking	Equivalent Circuit diagram
B0530W	SE	1 ○ —   ← — ○ 2
B0540W	SF	1 ○ —   ← — ○ 2

Note: 1. Valid provided that leads are kept at ambient temperature.

2. Pulse Test : Pulse width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

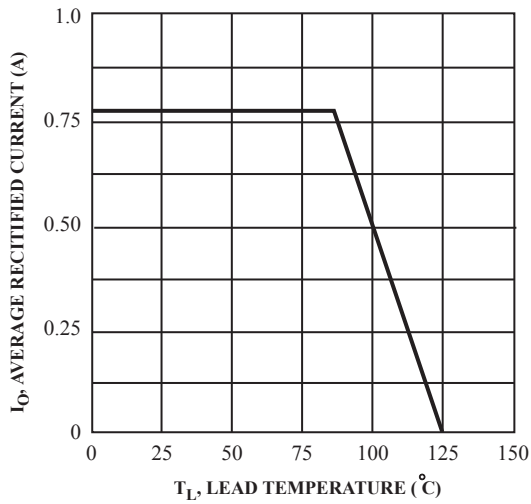


FIG. 1 Forward Current Derating Curve

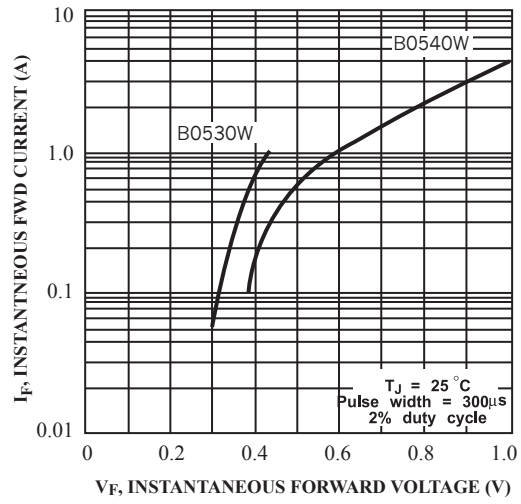


Fig. 2 Typical Forward Characteristics

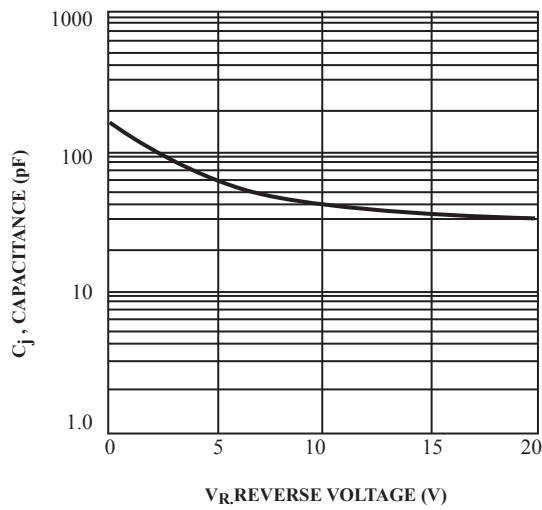


Fig. 3 Typ, Junction Capacitance vs. Reverse Voltage