

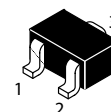
## Surface Mount Switching Diode

\* “G” Lead(Pb)-Free

### Features:

- \*Low Current Leakage
- \*Low Forward Voltage
- \*Reverse Recover Time  $T_{rr} \leq 6\text{ns}$
- \*Small Outline Surface Mount SOT-323 Package

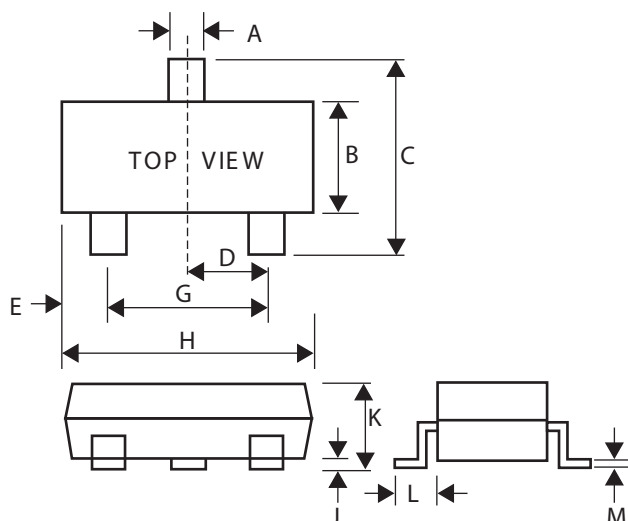
**SWITCHING DIODE  
200-215m AMPERRES  
70-75 VOLTS**



**SOT-323(SC-70)**

## SOT-323 Outline Demensions

Unit:mm



**SOT-323**

Dim	Min	Max
<b>A</b>	0.30	0.40
<b>B</b>	1.15	1.35
<b>C</b>	2.00	2.40
<b>D</b>	-	0.65
<b>E</b>	0.30	0.40
<b>G</b>	1.20	1.40
<b>H</b>	1.80	2.20
<b>J</b>	0.00	0.10
<b>K</b>	0.80	1.00
<b>L</b>	0.42	0.53
<b>M</b>	0.10	0.25

### Maximum Ratings (EACH DIODE)

Characteristic	Symbol	BAS16W	BAV70W	BAW56W	BAV99W	Unit
Reverse Voltage	$V_R$	75	70			Volts
Forward Current	$I_F$	200			215	mAdc
Peak Forward Surge Current	$I_{FM}$	500				mAdc

### Thermal Characteristics

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board *1, $T_A=25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	200 1.6	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate *2 $T_A=25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to + 150	$^\circ\text{C}$

\*1 ER-5=1.0x0.75x0.062 in

\*2 Alumina=0.4x0.3x0.024 in 99.5% Alumina

### Electrical Characteristics ( $T_A=25^\circ\text{C}$ Unless Otherwise Note) (Each Diode)

Characteristic	Symbol	Min	Max	Unit
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### Off Characteristics

Reverse Breakdown Voltage BAS16W ( $I_{BR}=100\mu\text{Adc}$ ) BAV70W/BAW56W/BAV99W	$V_{BR}$	75 70		Vdc
Reverse Voltage Leakage Current $V_R=75\text{V}$ BAS16W $V_R=70\text{V}$ BAV70W/BAW56W/BAV99W			1.0 2.5	
$V_R=25\text{V}, T_J=150^\circ\text{C}$ BAS16W/BAW56W/BAV99W $V_R=25\text{V}, T_J=150^\circ\text{C}$ BAV70W	$I_R$		30.0 60.0	$\mu\text{Adc}$
$V_R=75\text{V}, T_J=150^\circ\text{C}$ BAS16W $V_R=70\text{V}, T_J=150^\circ\text{C}$ BAW56W/BAV99W $V_R=70\text{V}, T_J=150^\circ\text{C}$ BAV70W			50.0 50.0 100.0	

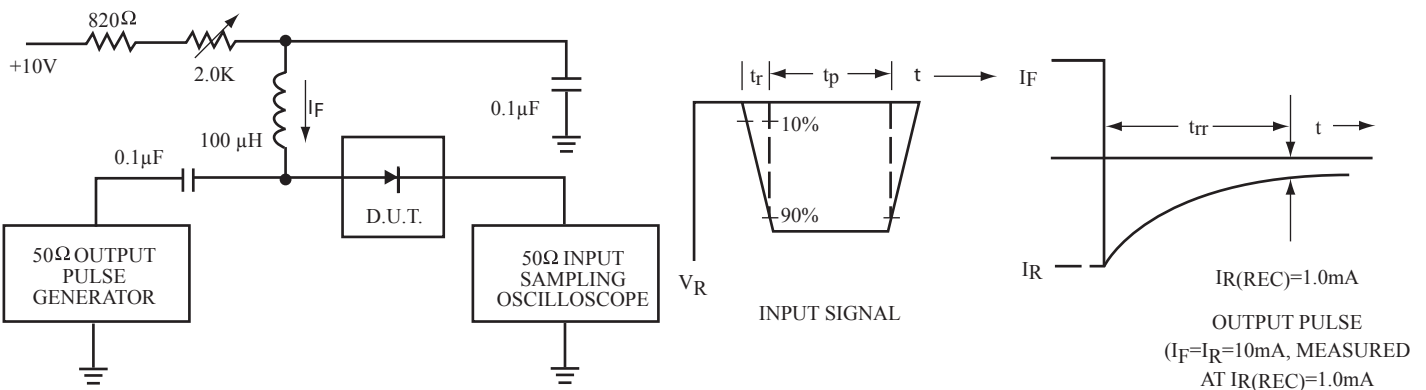
**Off Characteristic**

Characteristic	Symbol	Min	Max	Unit
Diode Capacitance (V <sub>R</sub> =0, f=1.0MHz) BAS16W/BAW56W BAV70W/BAV99W	C <sub>D</sub>		2.0 1.5	PF
Forward Voltage (I <sub>F</sub> =1.0 mA) (I <sub>F</sub> =10 mA) (I <sub>F</sub> =50 mA) (I <sub>F</sub> =150 mA)	V <sub>F</sub>		715 855 1000 1250	mVdc
Reverse Recovery Time (Figure 1.) I <sub>F</sub> =I <sub>R</sub> =10 mA, V <sub>R</sub> =5.0Vdc I <sub>R</sub> (REC)=1.0 mA, R <sub>L</sub> =100Ω	t <sub>rr</sub>		6.0	nS

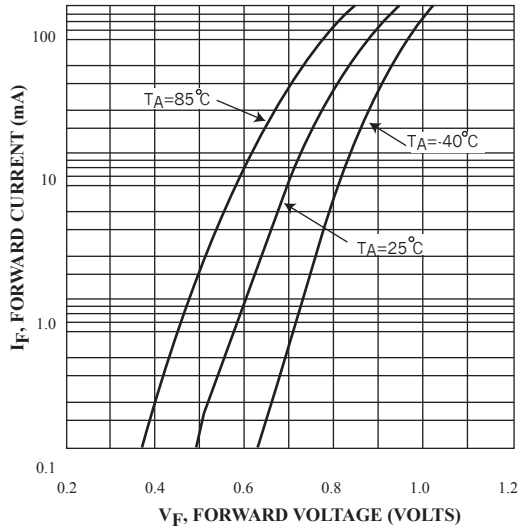
**Device Marking**

Item	Marking	Equivalent Circuit diagram
BAS16W	A6	
BAV70W	A4	
BAW56W	A1	
BAV99W	A7	

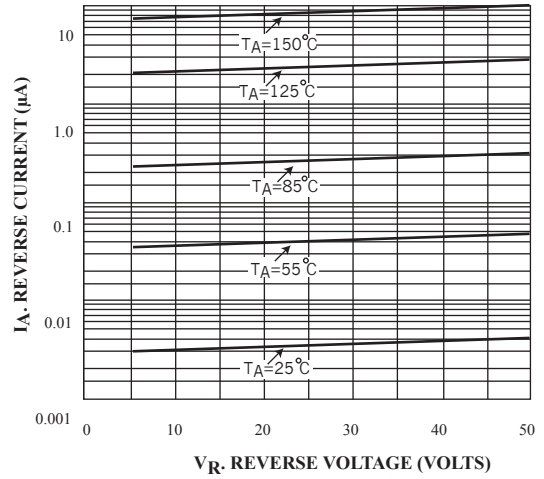
**Figure 1. Recovery Time Equivalent Test Circuit**



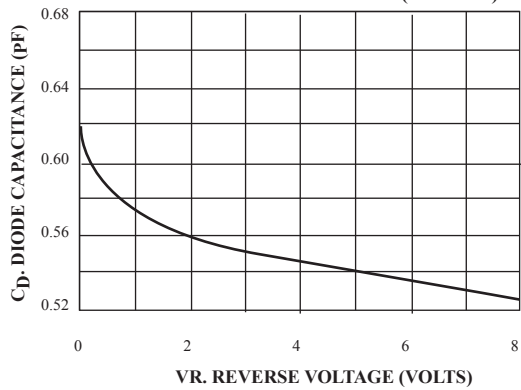
**FIGURE 2 .FORWARD VOLTAGE**



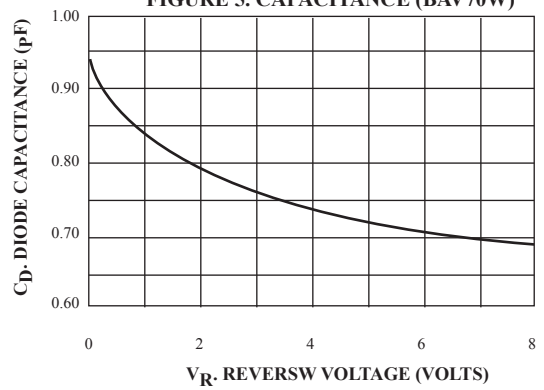
**FIGURE 3. LEAKAGE CURRENT**



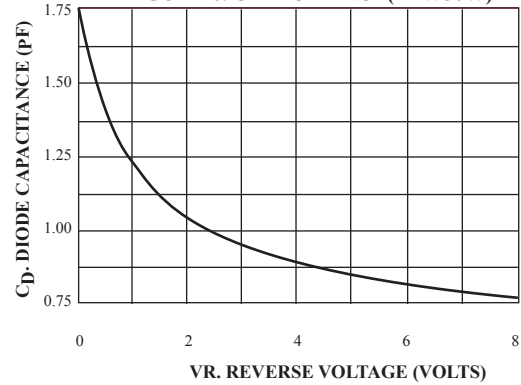
**FIGURE 4. CAPACITANCE(BAS16W)**



**FIGURE 5. CAPACITANCE (BAV70W)**



**FIGURE 6. CAPACITANCE(BAW56W)**



**FIGURE 7. CAPACITANCE (BAV99W)**

