

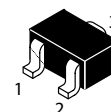
Surface Mount Switching Diode

 Lead(Pb)-Free

Features:

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

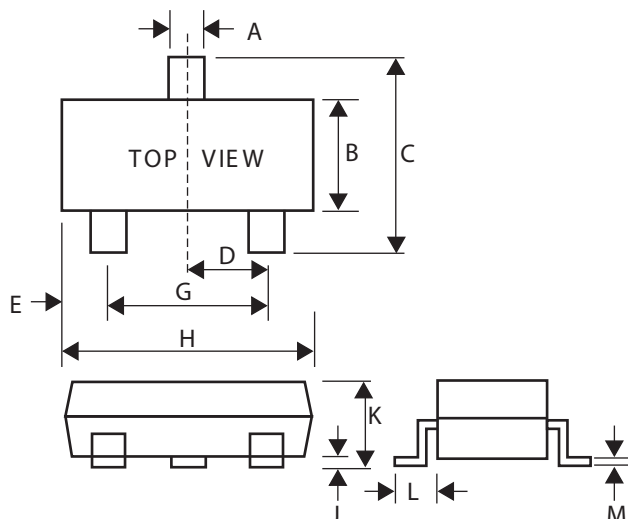
SWITCHING DIODE
200-215m AMPERRES
70-75 VOLTS



SOT-323(SC-70)

SOT-323 Outline Demensions

Unit:mm



SOT-323

Dim	Min	Max
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	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°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°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	μAdc
$V_R=75\text{V}, T_J=150^\circ\text{C}$ 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	

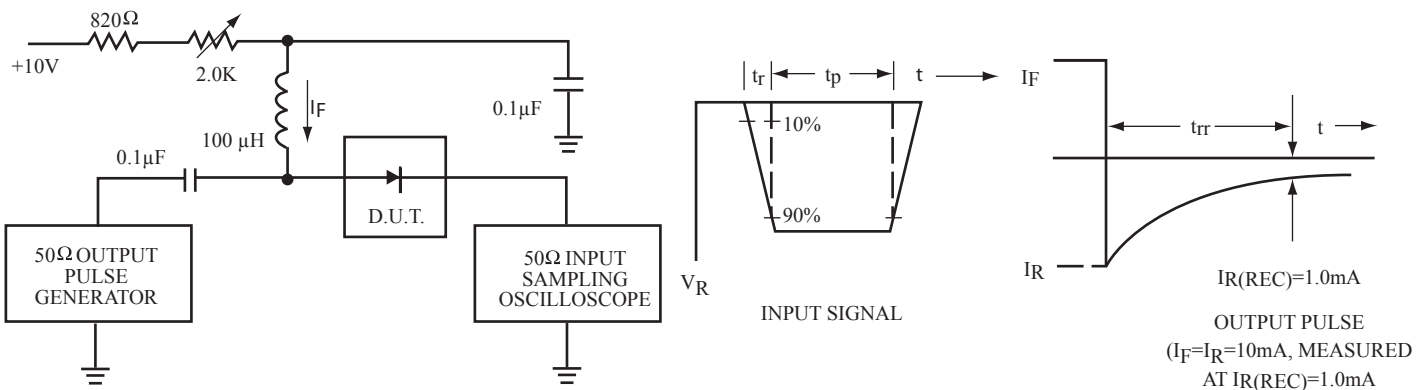
Off Characteristic

Characteristic	Symbol	Min	Max	Unit
Diode Capacitance (V _R =0, f=1.0MHz) BAS16W/BAW56W BAV70W/BAV99W	C _D		2.0 1.5	PF
Forward Voltage (I _F =1.0 mA) (I _F =10 mA) (I _F =50 mA) (I _F =150 mA)	V _F		715 855 1000 1250	mVdc
Reverse Recovery Time (Figure 1.) I _F =I _R =10 mA, V _R =5.0Vdc I _R (REC)=1.0 mA, R _L =100Ω	t _{rr}		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



- Notes: 1. A 2.0 kΩ variable resistor for a Forward Current (I_F) of 10 mA
 2. Input pules is adjusted so I_R(peak) is equal to 10 mA
 3. t_p >> t_{rr}

FIGURE 2 .FORWARD VOLTAGE

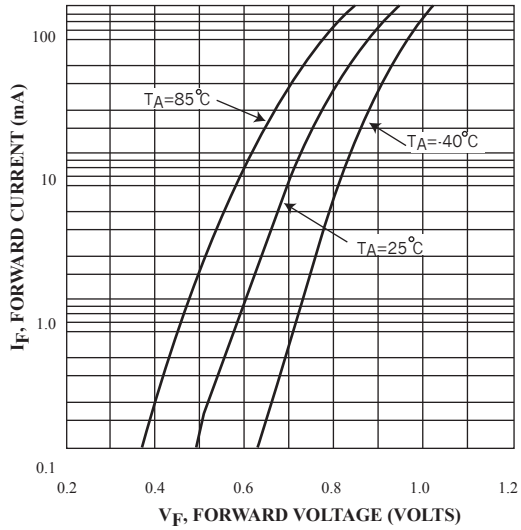


FIGURE 3. LEAKAGE CURRENT

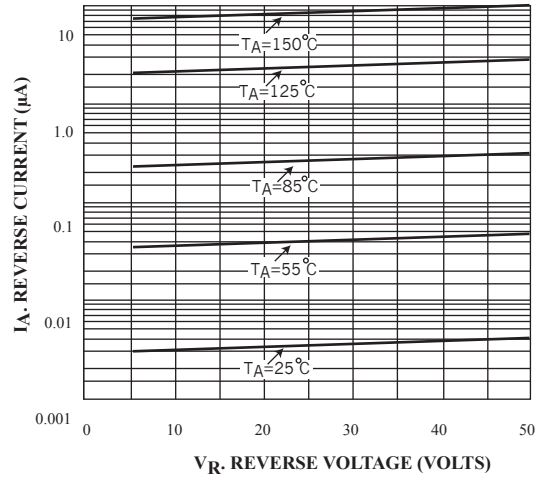


FIGURE 4. CAPACITANCE(BAS16W)

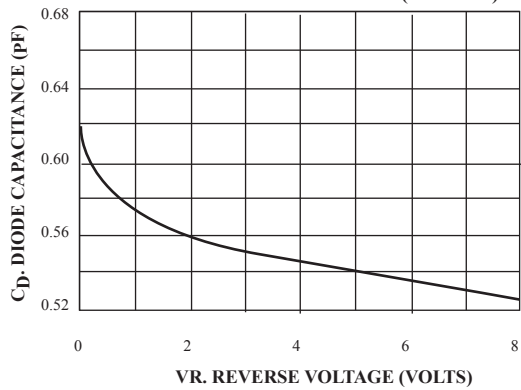


FIGURE 5. CAPACITANCE (BAV70W)

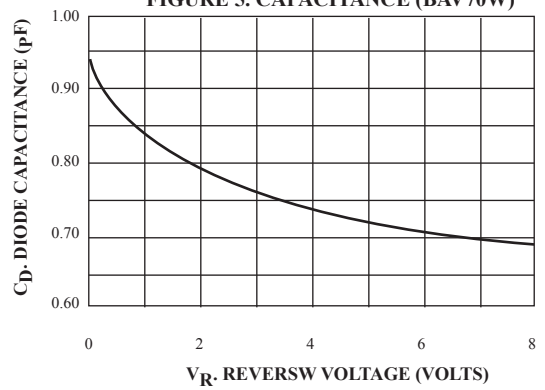


FIGURE 6. CAPACITANCE(BAW56W)

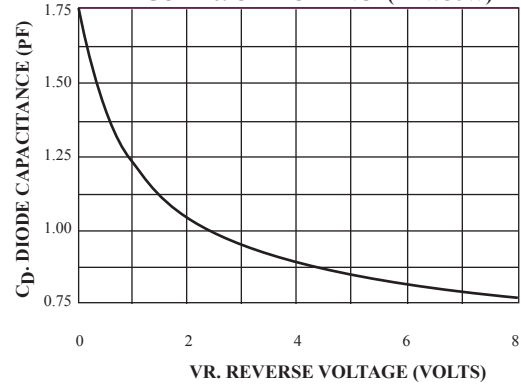


FIGURE 7. CAPACITANCE (BAV99W)

