

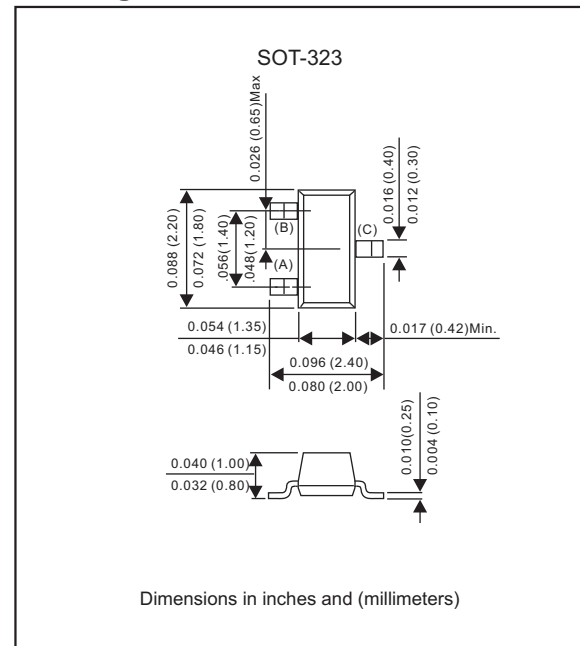
Features

- Fast speed switching.
- For general purpose switching application.
- High conductance.
- Silicon epitaxial planar chip.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. BAS16W-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.006 gram

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

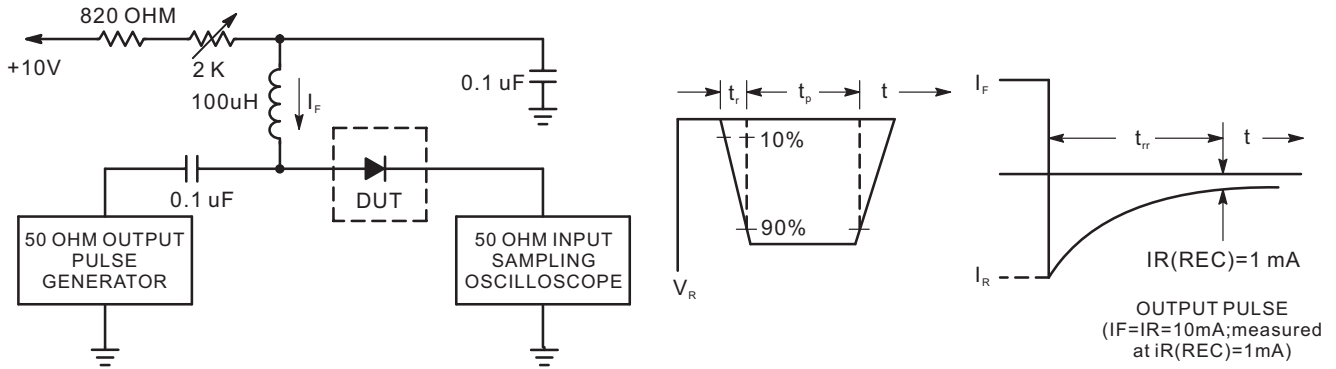
PARAMETER	Symbol	BAS16W	BAV70W	BAW56W	BAV99W	BAL99W	UNIT
Maximum Reverse Voltage	V_R	75					V
Maximum Forward Current	I_F	200			215		mA
Maximum Peak Forward Surge Current	I_{FM}	500					mA
Total Device Dissipation FR-5 Board* ¹ , $T_A = 25^{\circ}\text{C}$ Derate Above 25°C	P_D	200			1.6		mW mW/ $^{\circ}\text{C}$
Maximum Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	625					$^{\circ}\text{C}/\text{W}$
Total Device Dissipation Substrate* ² , $T_A = 25^{\circ}\text{C}$ Derate Above 25°C	P_D	300			2.4		mW mW/ $^{\circ}\text{C}$
Maximum Thermal Resistance Junction to Ambient (Note 2)	$R_{\theta JA}$	417					$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	T_J	-65 to +150					$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150					$^{\circ}\text{C}$
Maximum Reverse Voltage Leakage Current at $V_R = 75\text{V}$ at $V_R = 70\text{V}$ at $V_R = 25\text{V}$, $T_J = 150^{\circ}\text{C}$ at $V_R = 75\text{V}$, $T_J = 150^{\circ}\text{C}$ at $V_R = 70\text{V}$, $T_J = 150^{\circ}\text{C}$	I_R	1.0 - 30.0 50.0 -	- 2.5 60.0 - 100.0	- 2.5 30.0 - 50.0	- 2.5 30.0 - 50.0	- 2.5 30.0 - 50.0	μA_{dc}
Typical Diode Capacitance ($V_R = 0\text{V}$, $f = 1.0\text{MHz}$)	C_D	2.0	1.5	2.0	1.5	1.5	pF
Maximum Reverse Recovery Time ($I_F = I_R = 10\text{mA}$, $V_R = 5.0\text{Vdc}$, $I_R(\text{REC}) = 1.0\text{mA}_{dc}$, $R_L = 100_{\Omega}$)	t_{rr}	6.0					ns
Maximum Forward Voltage at $I_F = 1.0\text{mA}_{dc}$ at $I_F = 10\text{mA}_{dc}$ at $I_F = 50\text{mA}_{dc}$ at $I_F = 150\text{mA}_{dc}$	V_F	715 855 1000 1250					mV

Notes:

*1 FR-5=1.0x0.75x0.062 in

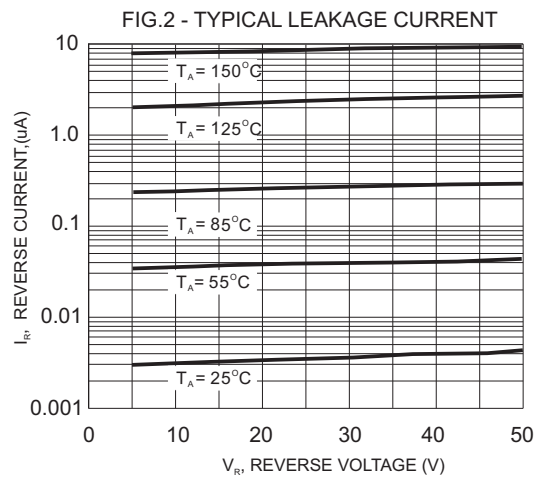
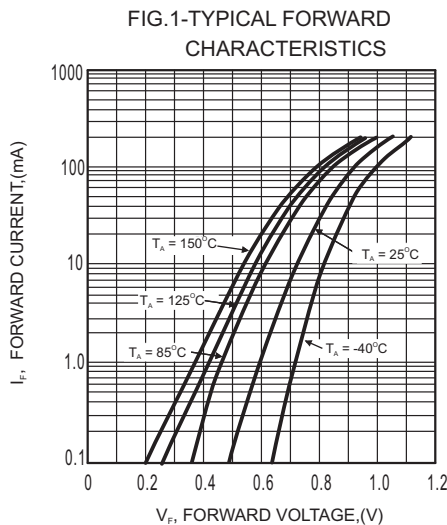
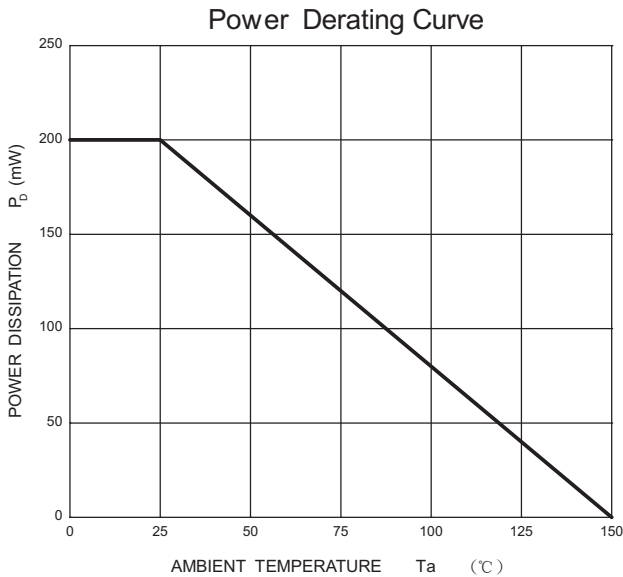
*2 Alumina=0.4x0.3x0.024 in 99.5% Alumina

Rating and characteristic curves for each diode (BAS16W/BAV70W/BAW56W/BAV99W BAL99W)



- Notes : 1. A2.0 Kohm variable resistor adjusted for a forward Current (I_F) of 10mA.
 2. Input pulse is adjusted so $I_R(\text{peak})$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$.

Recovery Time Equivalent Test Circuit



Rating and characteristic curves for each diode (BAS16W/BAV70W/BAW56W/BAV99W BAL99W)

FIG.3 - DIODE CAPACITANCE (BAS16W)

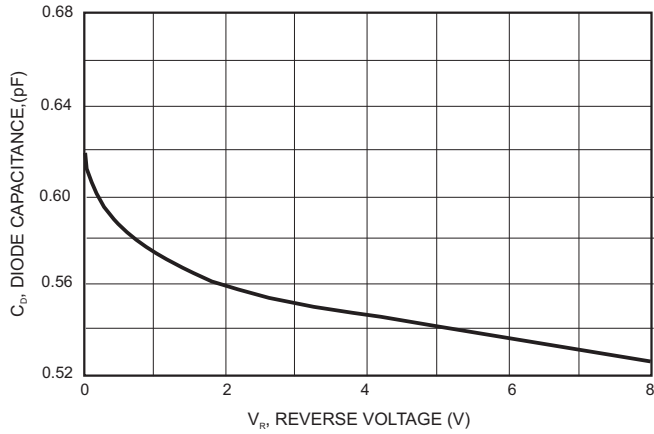


FIG.4 - DIODE CAPACITANCE (BAV70W)

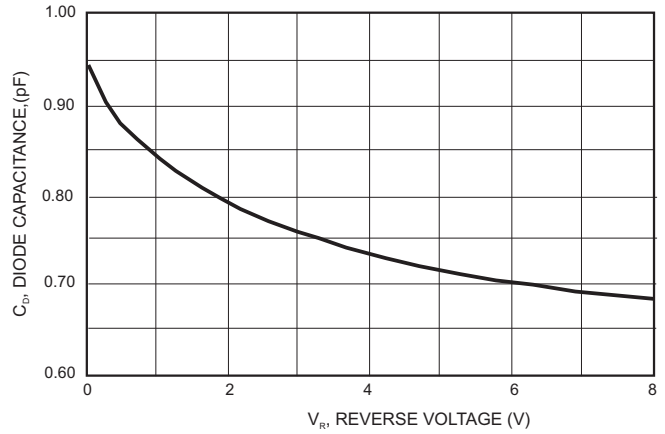


FIG.5 - DIODE CAPACITANCE (BAW56W)

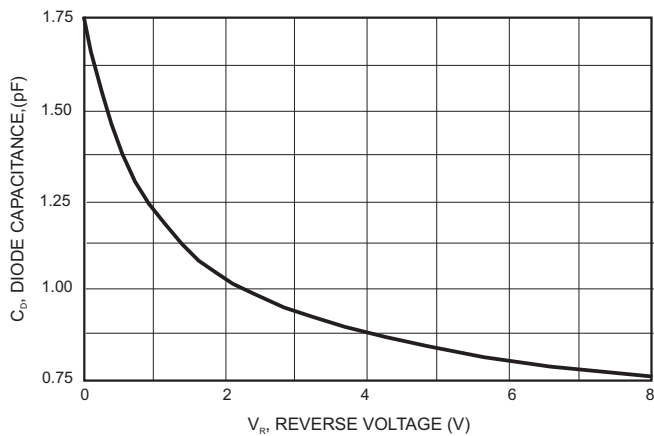


FIG.6 - DIODE CAPACITANCE (BAV99W)

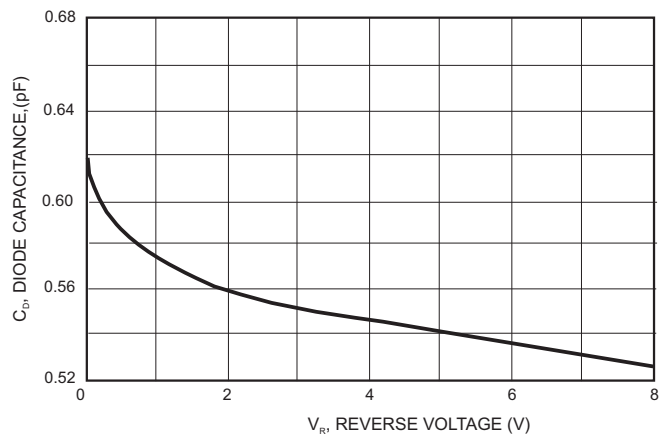
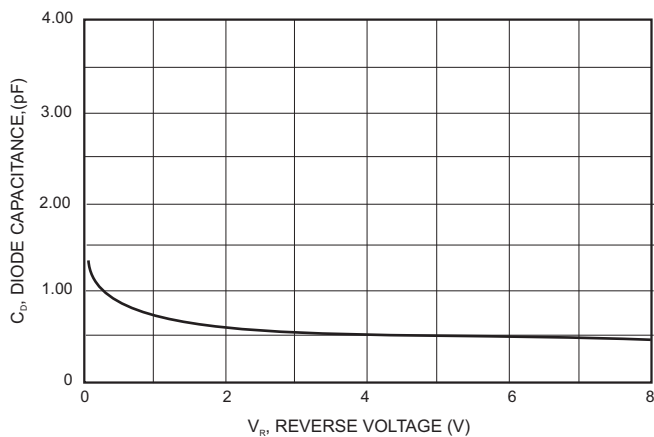
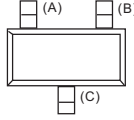
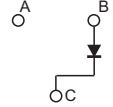
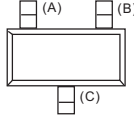
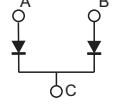
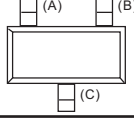
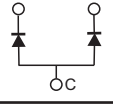
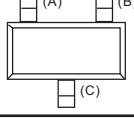
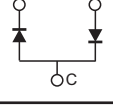
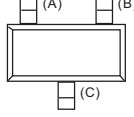
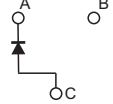


FIG.7 - DIODE CAPACITANCE (BAL99W)

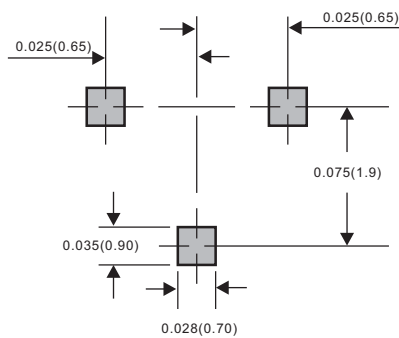


Pinning information

Type number	Marking code	Simplified outline	Symbol
BAS16W	A6		
BAV70W	A4, JA		
BAW56W	A1, JC		
BAV99W	A7, KJG		
BAL99W	JF		

Suggested solder pad layout

SOT-323



Dimensions in inches and (millimeters)

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-323	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	9.5

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[1A4](#) [1A5](#) [1A6](#) [1A7](#) [1A7](#) [1A7](#) [1A7](#) [1A7A](#) [1G7](#) [1N3064TR](#) [1N3070](#) [1N3070TR](#) [1N3295A](#) [1N3295AR](#) [1N3296A](#) [1N3493R-SGS](#) [1N3595](#)
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