

BAW56LT1

Preferred Device

Monolithic Dual Switching Diode Common Anode

Features

- Pb-Free Packages are Available

MAXIMUM RATINGS (EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	70	Vdc
Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc
Non-Repetitive Peak Forward Current $t = 1 \mu s$ (Note 3)	I_{FSM}	4	A

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ C$ Derate above $25^\circ C$	P_D	225	mW
		1.8	mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ C/W$
Total Device Dissipation Alumina Substrate, (Note 2) $T_A = 25^\circ C$ Derate above $25^\circ C$	P_D	300	mW
		2.4	mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ C$

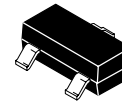
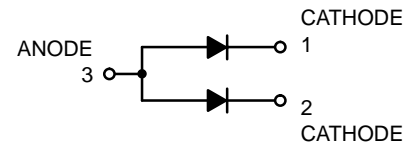
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

- FR-5 = $1.0 \times 0.75 \times 0.062$ in.
- Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.
- Square Wave; $T_j = 25^\circ C$.



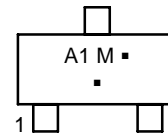
ON Semiconductor®

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SOT-23 (TO-236)
CASE 318
STYLE 12

MARKING DIAGRAM



- A1 = Device Code
- M = Date Code*
- = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
BAW56LT1	SOT-23	3000 / Tape & Reel
BAW56LT1G	SOT-23 (Pb-Free)	3000 / Tape & Reel
BAW56LT3	SOT-23	10,000 / Tape & Reel
BAW56LT3G	SOT-23 (Pb-Free)	10,000 / Tape & Reel

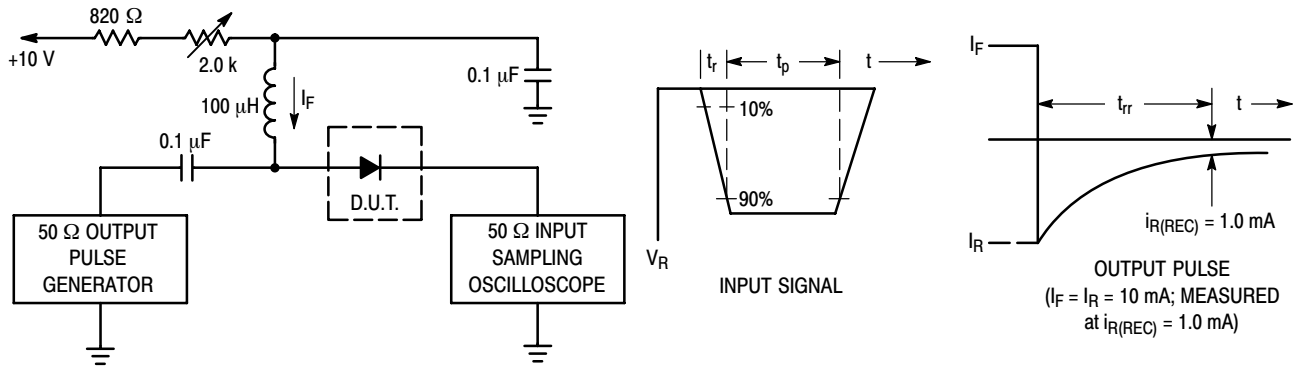
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Each Diode)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage ($I_{(BR)} = 100 \mu\text{A dc}$)	$V_{(BR)}$	70	–	Vdc
Reverse Voltage Leakage Current ($V_R = 25 \text{ Vdc}, T_J = 150^\circ\text{C}$) ($V_R = 70 \text{ Vdc}$) ($V_R = 70 \text{ Vdc}, T_J = 150^\circ\text{C}$)	I_R	– – –	30 2.5 50	$\mu\text{A dc}$
Diode Capacitance ($V_R = 0, f = 1.0 \text{ MHz}$)	C_D	–	2.0	pF
Forward Voltage ($I_F = 1.0 \text{ mA dc}$) ($I_F = 10 \text{ mA dc}$) ($I_F = 50 \text{ mA dc}$) ($I_F = 150 \text{ mA dc}$)	V_F	– – – –	715 855 1000 1250	mVdc
Reverse Recovery Time ($I_F = I_R = 10 \text{ mA dc}, I_{R(REC)} = 1.0 \text{ mA dc}$) (Figure 1) $R_L = 100 \Omega$	t_{rr}	–	6.0	ns



- Notes: 1. A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

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Curves Applicable to Each Cathode

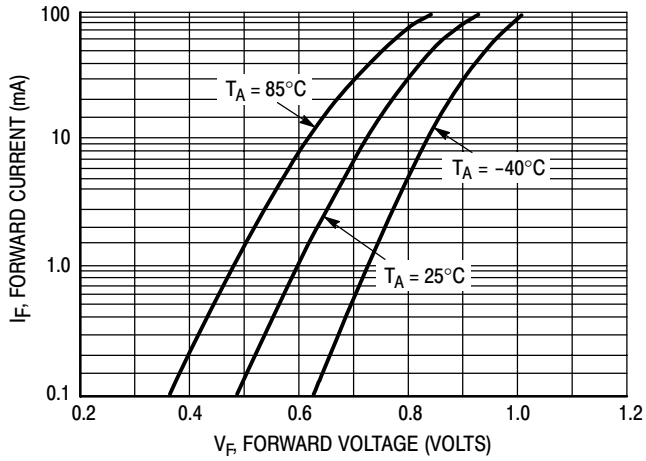


Figure 2. Forward Voltage

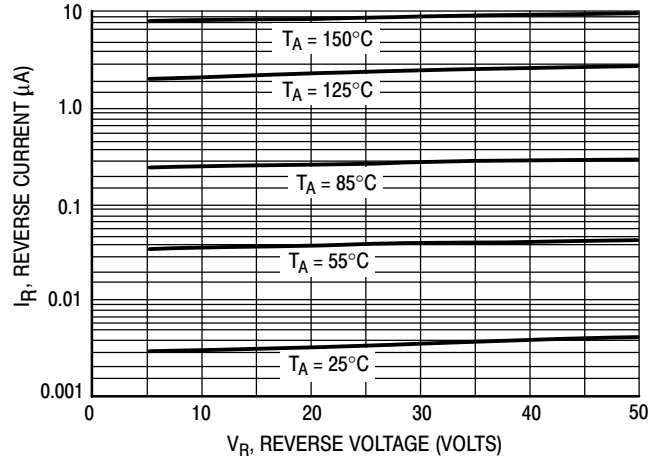


Figure 3. Leakage Current

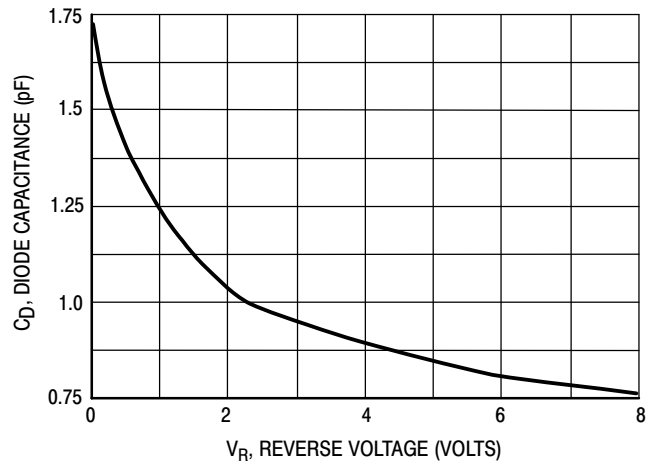
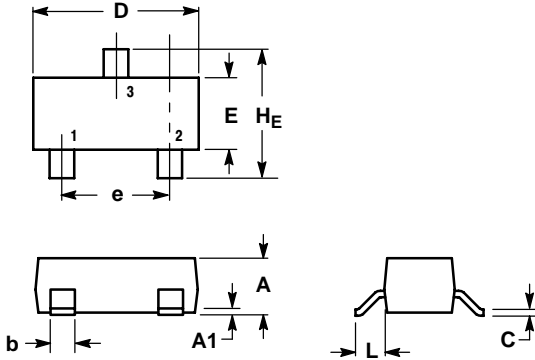


Figure 4. Capacitance

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PACKAGE DIMENSIONS

SOT-23-3 (TO-236)
CASE 318-08
ISSUE AL



NOTES:

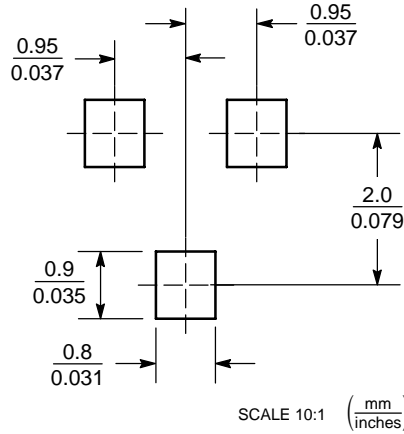
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104

STYLE 12:

1. CATHODE
2. CATHODE
3. ANODE

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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