Preferred Device

# **Dual Switching Diode**

### **Features**

• Pb-Free Package is Available

# **MAXIMUM RATINGS** $(T_A = 25^{\circ}C)$

Rating	Symbol	Max	Unit
Reverse Voltage	V <sub>R</sub>	70	Vdc
Forward Current	I <sub>F</sub>	200	mAdc
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1), T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	225 1.8	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	555	°C/W
Total Device Dissipation, FR-4 Board (Note 2), T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	360 2.9	mW mW/°C
Thermal Resistance, Junction–to–Ambient (Note 2)	$R_{\theta JA}$	345	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

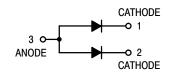
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

- 1. FR-4 @ Minimum Pad
- 2. FR-4 @  $1.0 \times 1.0$  Inch Pad



# ON Semiconductor®

# http://onsemi.com





CASE 463 SC-75/SOT-416 STYLE 4

# **MARKING DIAGRAM**



A1 = Specific Device Code

M = Date Code\*

= Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

## **ORDERING INFORMATION**

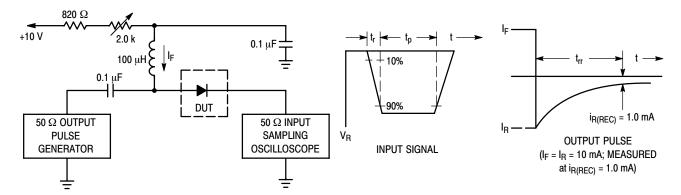
Device	Package	Shipping <sup>†</sup>
BAW56TT1	SC-75/SOT-416	3000/Tape & Reel
BAW56TT1G	SC-75/SOT-416 (Pb-Free)	3000/Tape & Reel

†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.

# **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^{\circ}C$ unless otherwise noted)

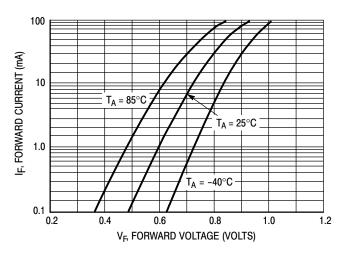
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS		•		
Reverse Breakdown Voltage (I <sub>(BR)</sub> = 100 μAdc)	V <sub>(BR)</sub>	70	_	Vdc
Reverse Voltage Leakage Current $(V_R = 25 \text{ Vdc}, T_J = 150^{\circ}\text{C})$ $(V_R = 70 \text{ Vdc}, T_J = 150^{\circ}\text{C})$ $(V_R = 70 \text{ Vdc}, T_J = 150^{\circ}\text{C})$	I <sub>R</sub>	_ _ _	30 2.5 50	μAdc
Diode Capacitance $(V_R = 0, f = 1.0 \text{ MHz})$	C <sub>D</sub>	_	2.0	pF
Forward Voltage (I <sub>F</sub> = 1.0 mAdc) (I <sub>F</sub> = 10 mAdc) (I <sub>F</sub> = 60 mAdc) (I <sub>F</sub> = 150 mAdc)	V <sub>F</sub>	- - - -	715 855 1000 1250	mVdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mAdc}$ , $R_L = 100 \Omega$ , $I_{R(REC)} = 1.0 \text{ mAdc}$ ) (Figure 1)	t <sub>rr</sub>	-	6.0	ns



Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current (I<sub>F</sub>) of 10 mA.

- 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10 mA.
- 3. t<sub>p</sub> » t<sub>rr</sub>

Figure 1. Recovery Time Equivalent Test Circuit



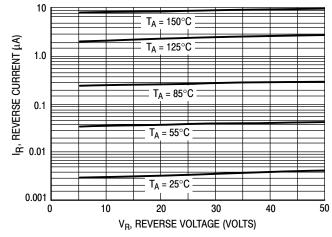


Figure 2. Forward Voltage

Figure 3. Leakage Current

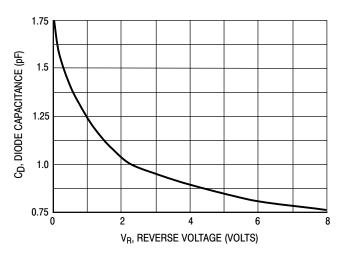


Figure 4. Capacitance

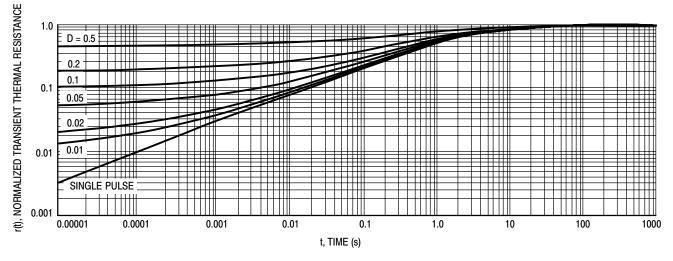
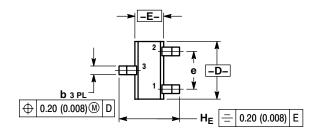
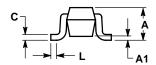


Figure 5. Normalized Thermal Response

## PACKAGE DIMENSIONS

SC-75/SOT-416 CASE 463-01 ISSUE F





- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. CONTROLLING DIMENSION: MILLIMETER.

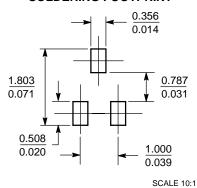
	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.70	0.80	0.90	0.027	0.031	0.035
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.15	0.20	0.30	0.006	800.0	0.012
С	0.10	0.15	0.25	0.004	0.006	0.010
D	1.55	1.60	1.65	0.059	0.063	0.067
E	0.70	0.80	0.90	0.027	0.031	0.035
е	1.00 BSC		0.04 BSC			
Г	0.10	0.15	0.20	0.004	0.006	800.0
HE	1.50	1.60	1.70	0.061	0.063	0.065

(mm inches)

PIN 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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