

# BAS16DXV6

## Dual Switching Diode

### Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Rating	Symbol	Max	Unit
Continuous Reverse Voltage	V <sub>R</sub>	100	V
Recurrent Peak Forward Current	I <sub>F</sub>	200	mA
Peak Forward Surge Current Pulse Width = 10 μs	I <sub>FM(surge)</sub>	500	mA

### THERMAL CHARACTERISTICS

Characteristic (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation (Note 1) T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	357 2.9	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	350	°C/W
Characteristic (Both Junctions Heated)	Symbol	Max	Unit
Total Device Dissipation (Note 1) T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	500 4.0	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	250	°C/W
Junction and Storage Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

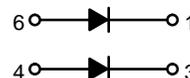
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ Minimum Pad



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**SOT-563  
CASE 463A  
PLASTIC**

### MARKING DIAGRAM



A6 = Specific Device Code

M = Date Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
BAS16DXV6T1G	SOT-563 (Pb-Free)	4000 / Tape & Reel
SBAS16DXV6T1G	SOT-563 (Pb-Free)	4000 / Tape & Reel

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

# BAS16DXV6

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

Characteristic	Symbol	Min	Max	Unit
Forward Voltage ( $I_F = 1.0 \text{ mA}$ ) ( $I_F = 10 \text{ mA}$ ) ( $I_F = 50 \text{ mA}$ ) ( $I_F = 150 \text{ mA}$ )	$V_F$	– – – –	715 855 1000 1250	mV
Reverse Current ( $V_R = 100 \text{ V}$ ) ( $V_R = 75 \text{ V}, T_J = 150^\circ\text{C}$ ) ( $V_R = 25 \text{ V}, T_J = 150^\circ\text{C}$ )	$I_R$	– – –	1.0 50 30	$\mu\text{A}$
Capacitance ( $V_R = 0, f = 1.0 \text{ MHz}$ )	$C_D$	–	2.0	pF
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA}, R_L = 50 \Omega$ ) (Figure 1)	$t_{rr}$	–	6.0	ns
Stored Charge ( $I_F = 10 \text{ mA}$ to $V_R = 6.0 \text{ V}, R_L = 500 \Omega$ ) (Figure 2)	QS	–	45	PC
Forward Recovery Voltage ( $I_F = 10 \text{ mA}, t_f = 20 \text{ ns}$ ) (Figure 3)	$V_{FR}$	–	1.75	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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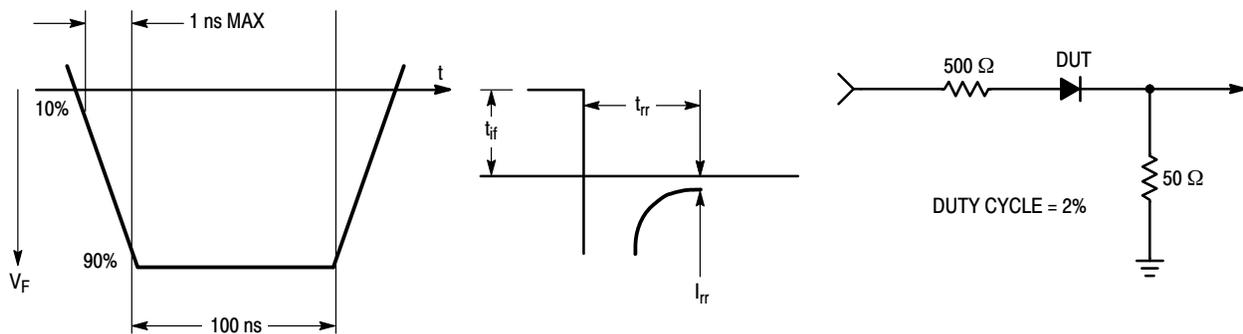


Figure 1. Reverse Recovery Time Equivalent Test Circuit

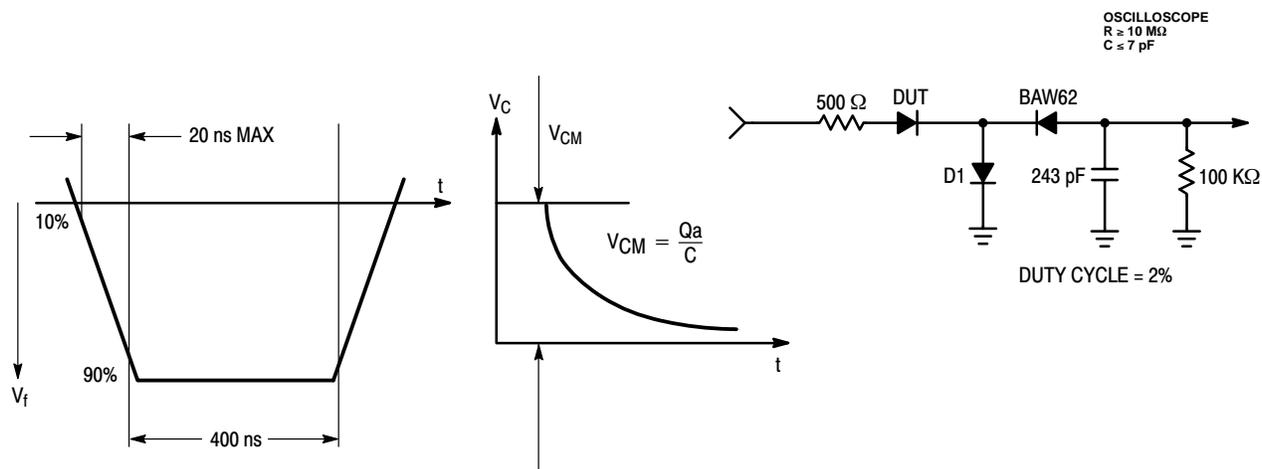


Figure 2. Stored Charge Equivalent Test Circuit

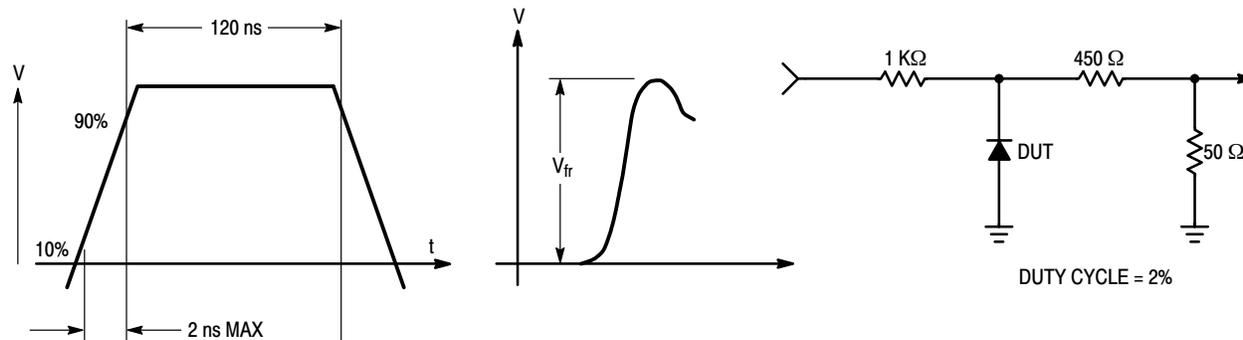


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

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## TYPICAL CHARACTERISTICS

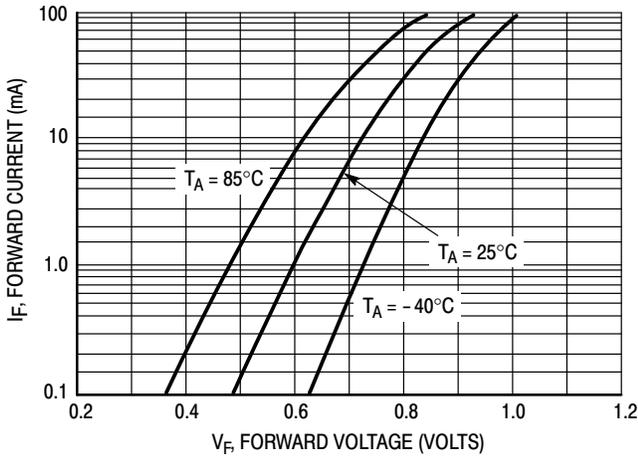


Figure 4. Forward Voltage

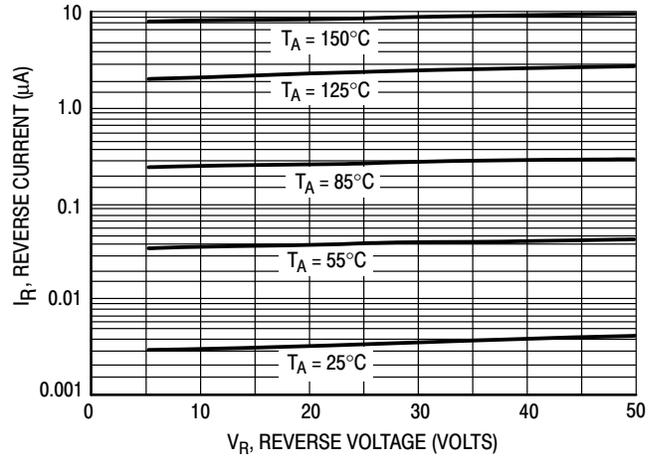


Figure 5. Leakage Current

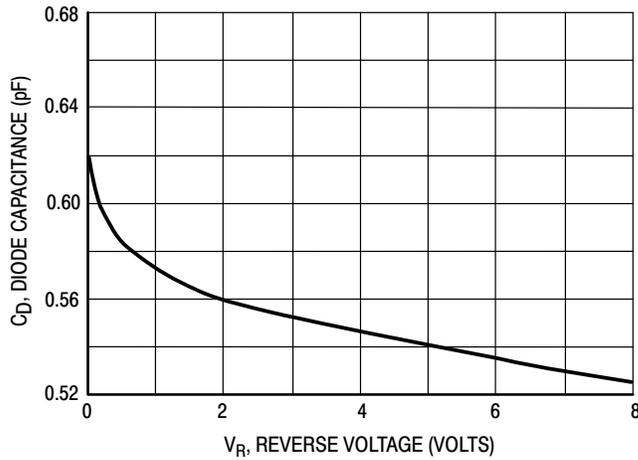


Figure 6. Capacitance

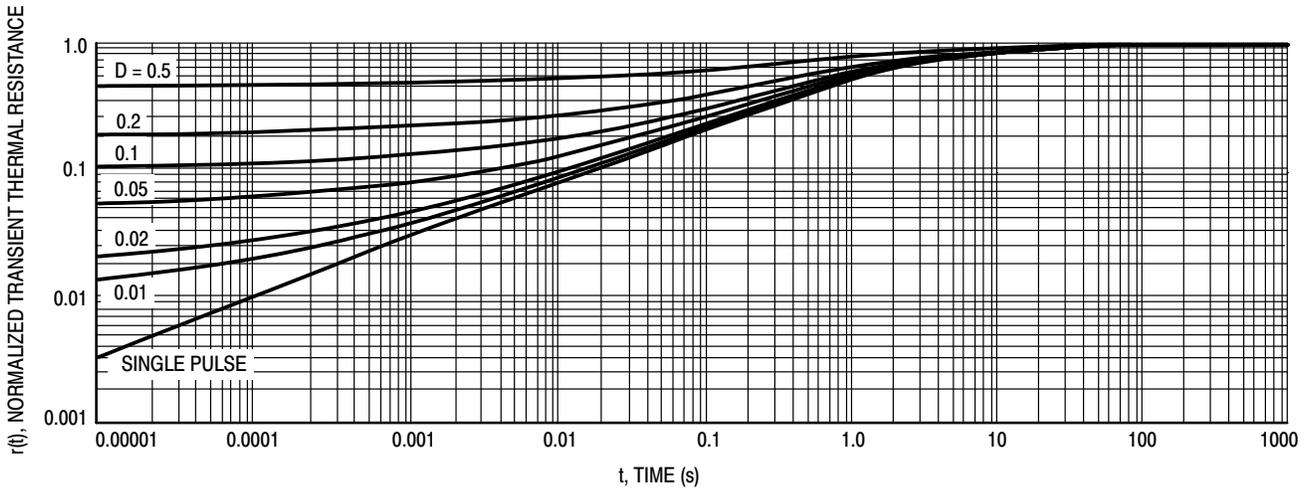
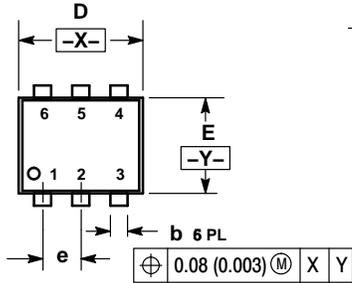


Figure 7. Normalized Thermal Response

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## PACKAGE DIMENSIONS

### SOT-563, 6 LEAD CASE 463A ISSUE F

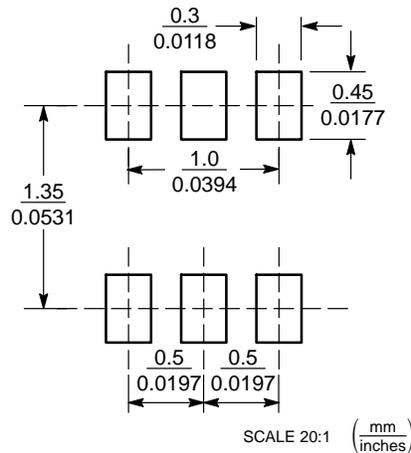


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.55	0.60	0.020	0.021	0.023
b	0.17	0.22	0.27	0.007	0.009	0.011
C	0.08	0.12	0.18	0.003	0.005	0.007
D	1.50	1.60	1.70	0.059	0.062	0.066
E	1.10	1.20	1.30	0.043	0.047	0.051
e	0.5 BSC			0.02 BSC		
L	0.10	0.20	0.30	0.004	0.008	0.012
HE	1.50	1.60	1.70	0.059	0.062	0.066

### SOLDERING FOOTPRINT\*



**STYLE 10:**

1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1

\*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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