

# BAS16DXV6T1, BAS16DXV6T5, SBAS16DXV6T1G

## Dual Switching Diode

### Features

- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- Pb-Free Packages are Available

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

Rating	Symbol	Max	Unit
Continuous Reverse Voltage	$V_R$	75	V
Recurrent Peak Forward Current	$I_F$	200	mA
Peak Forward Surge Current Pulse Width = 10 $\mu\text{s}$	$I_{FM(\text{surge})}$	500	mA

### THERMAL CHARACTERISTICS

Characteristic (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	357 (Note 1) 2.9 (Note 1)	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	350 (Note 1)	$^\circ\text{C}/\text{W}$
Characteristic (Both Junctions Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	500 (Note 1) 4.0 (Note 1)	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	250 (Note 1)	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

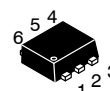
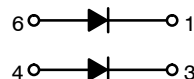
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-4 @ Minimum Pad



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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†
BAS16DXV6T1	SOT-563	4000 / Tape & Reel
BAS16DXV6T1G	SOT-563 (Pb-Free)	4000 / Tape & Reel
BAS16DXV6T5	SOT-563	8000 / Tape & Reel
BAS16DXV6T5G	SOT-563 (Pb-Free)	8000 / Tape & Reel
SBAS16DXV6T1G	SOT-563 (Pb-Free)	8000 / 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.

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### 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 ( $V_R = 75\text{ V}$ ) ( $V_R = 75\text{ V}$ , $T_J = 150^\circ\text{C}$ ) ( $V_R = 25\text{ V}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	– – –	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 ( $I_F = 10\text{ mA}$ , $t_r = 20\text{ ns}$ ) (Figure 3)	$V_{FR}$	–	1.75	V

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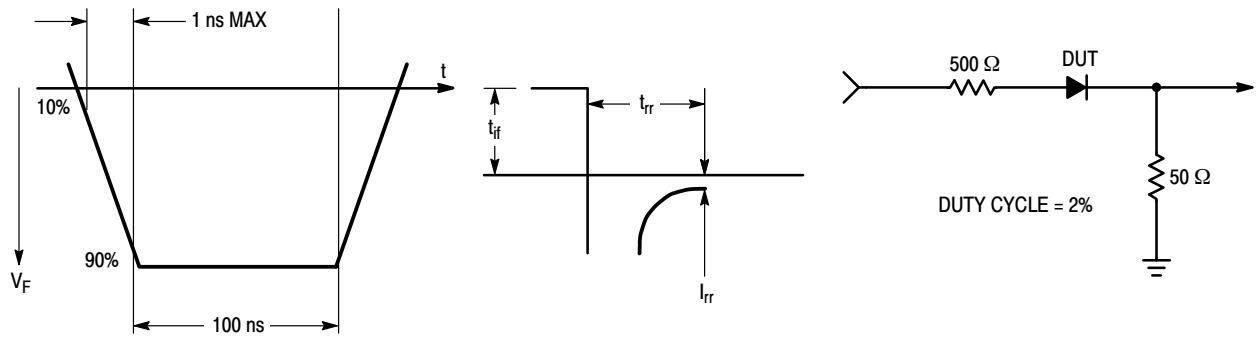


Figure 1. Reverse Recovery Time Equivalent Test Circuit

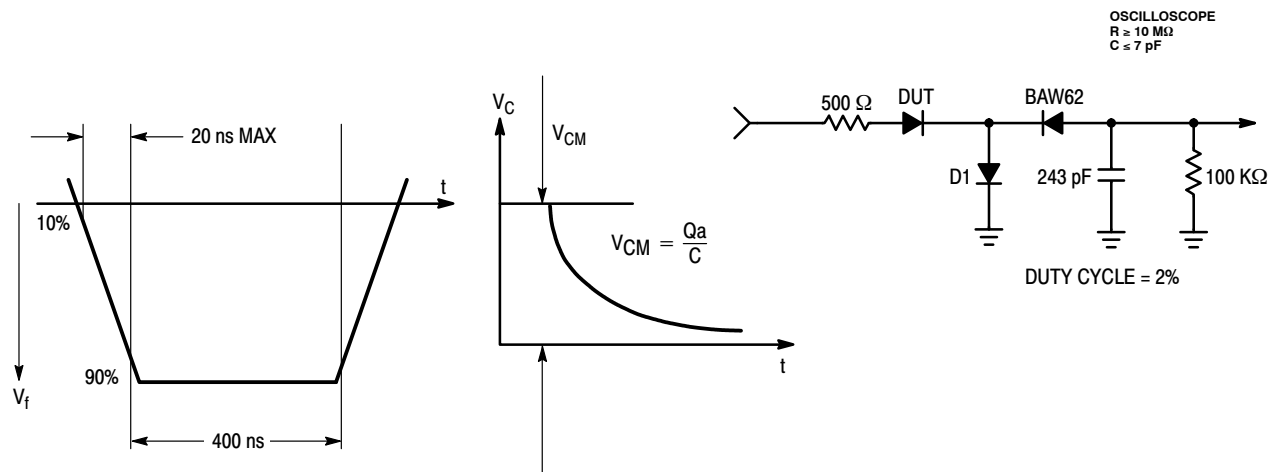


Figure 2. Stored Charge Equivalent Test Circuit

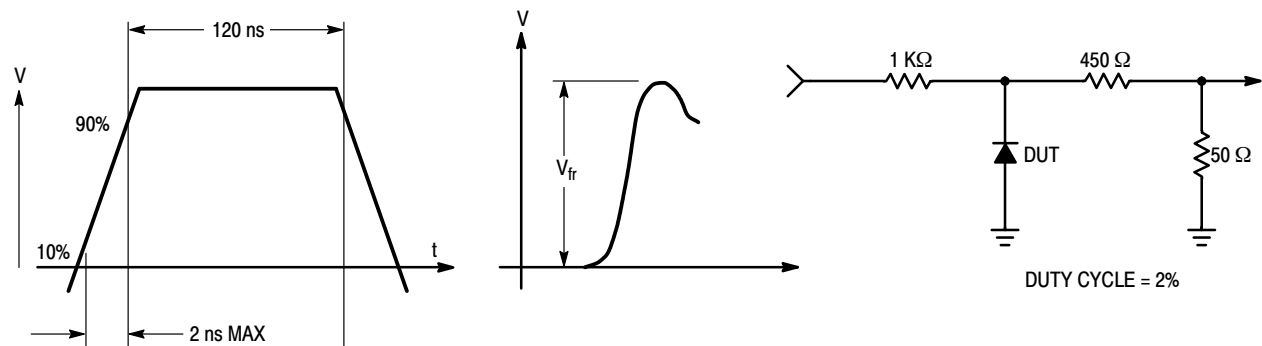


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

# BAS16DXV6T1, BAS16DXV6T5, SBAS16DXV6T1G

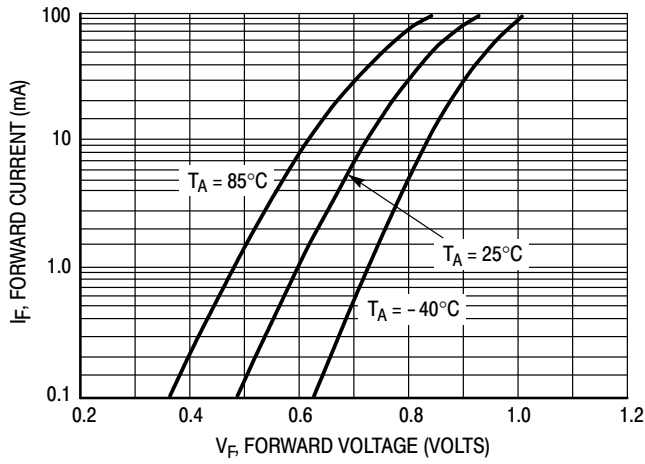


Figure 4. Forward Voltage

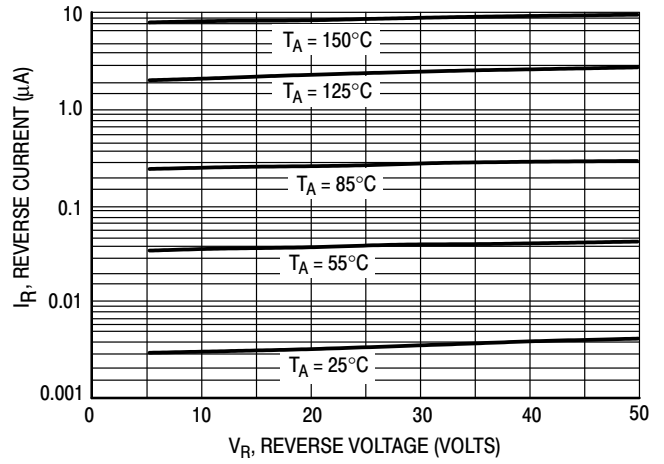


Figure 5. Leakage Current

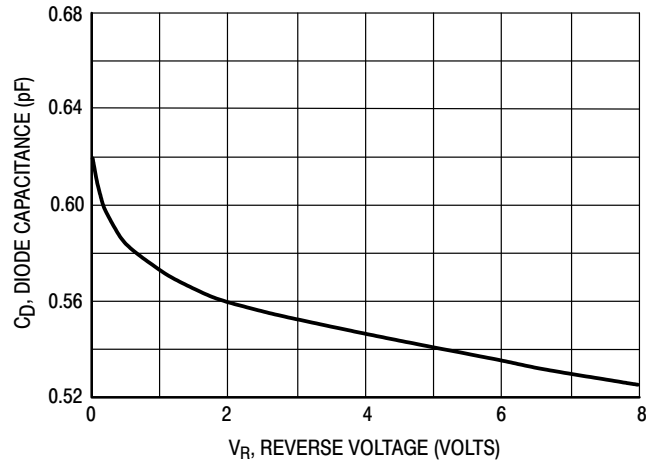


Figure 6. Capacitance

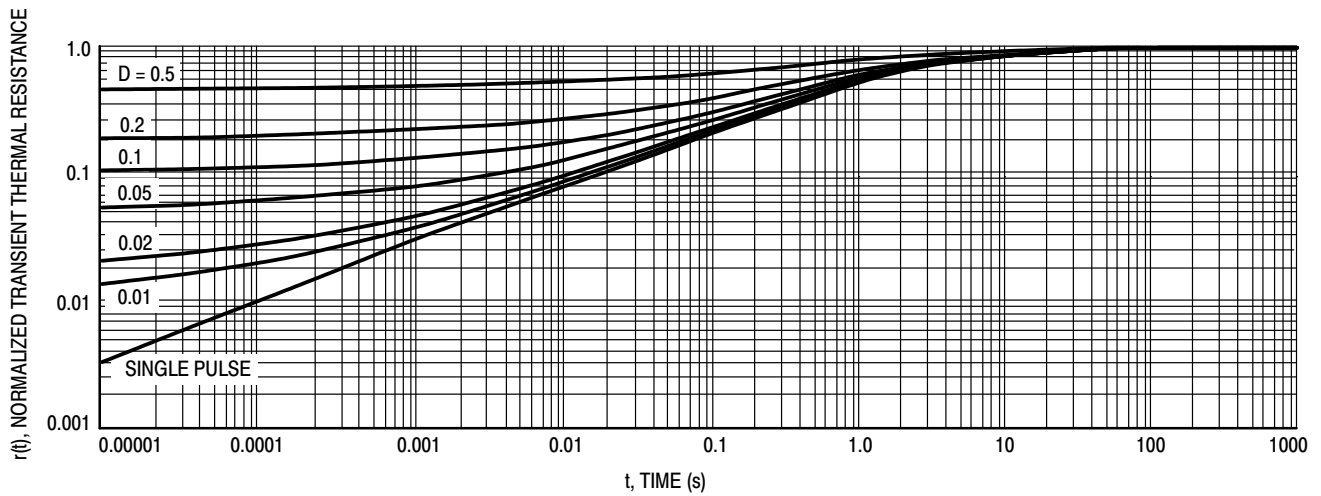
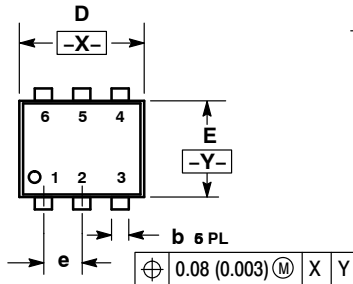


Figure 7. Normalized Thermal Response

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## PACKAGE DIMENSIONS

### SOT-563, 6 LEAD CASE 463A-01 ISSUE F



#### NOTES:

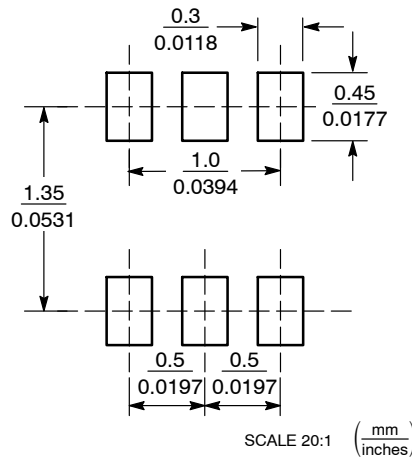
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

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
H <sub>E</sub>	1.50	1.60	1.70	0.059	0.062	0.066

#### STYLE 10:

- PIN 1. CATHODE 1
- N/C
- CATHODE 2
- ANODE 2
- N/C
- ANODE 1

### 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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