

Dual Switching Diode, Common Anode

BAWH56W, NSVBAWH56W

Features

- 175°C T_{J(MAX)} – Rated for High Temperature, Mission Critical Applications
- NSV 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_A = 25°C)

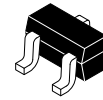
Symbol	Rating	Max	Unit
V _R	Reverse Voltage	70	V
I _F	Forward Current	200	mA
I _{FSM}	Non-Repetitive Peak Surge Current (surge applied at rated load conditions, half wave, single pulse, 60 Hz)	2.0	A

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.

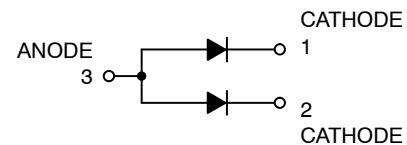
THERMAL CHARACTERISTICS (T_A = 25°C)

Symbol	Characteristic	Max	Unit
P _D	Total Device Dissipation FR-5 Board (Note 1) T _A = 25°C Derate above 25°C	200 1.1	mW mW/°C
R _{θJA}	Thermal Resistance, Junction-to-Ambient (Note 1)	615	°C/W
P _D	Total Device Dissipation Alumina Substrate (Note 2) T _A = 25°C Derate above 25°C	300 1.6	mW mW/°C
R _{θJA}	Thermal Resistance, Junction-to-Ambient (Note 2)	417	°C/W
T _J , T _{stg}	Junction and Storage Temperature	-55 to +175	°C

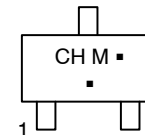
1. FR-5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.



SC-70
CASE 419
STYLE 4



MARKING DIAGRAM



CH = 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 [†]
BAWH56WT1G	SC-70 (Pb-Free)	3,000 / Tape & Reel
NSVBAWH56WT1G	SC-70 (Pb-Free)	3,000 / Tape & Reel

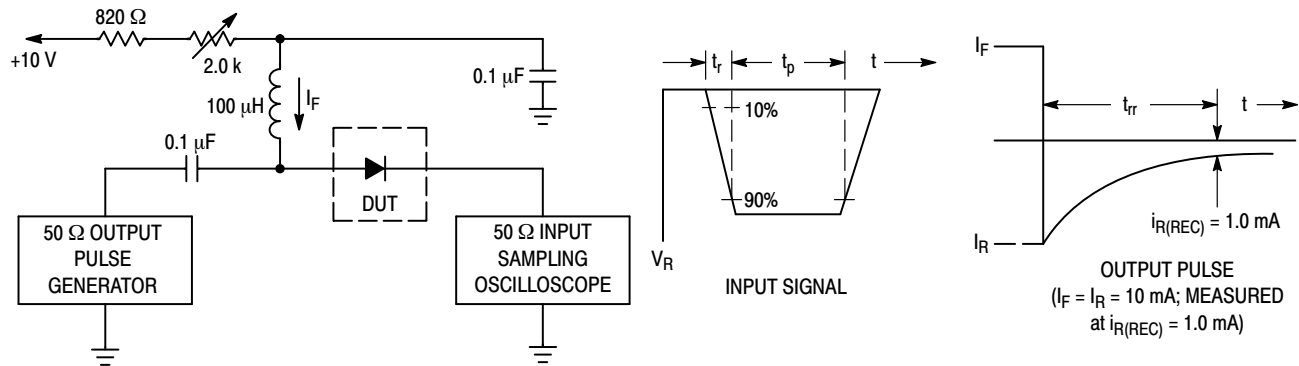
[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

Symbol	Characteristic	Min	Max	Unit
OFF CHARACTERISTICS				
$V_{(BR)}$	Reverse Breakdown Voltage ($I_{(BR)} = 100 \mu\text{A}$)	70	–	V
I_R	Reverse Voltage Leakage Current ($V_R = 25 \text{ V}$, $T_J = 175^\circ\text{C}$) ($V_R = 70 \text{ V}$) ($V_R = 70 \text{ V}$, $T_J = 175^\circ\text{C}$)	– – –	30 2.5 50	μA
C_D	Diode Capacitance ($V_R = 0$, $f = 1.0 \text{ MHz}$)	–	2.0	pF
V_F	Forward Voltage ($I_F = 1.0 \text{ mA}$) ($I_F = 10 \text{ mA}$) ($I_F = 50 \text{ mA}$) ($I_F = 150 \text{ mA}$)	– – – –	715 855 1000 1250	mV
t_{rr}	Reverse Recovery Time ($I_F = I_R = 10 \text{ mA}$, $R_L = 100 \Omega$, $I_{R(REC)} = 1.0 \text{ mA}$) (Figure 1)	–	6.0	ns

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.



- Notes: 1. A 2.0 kΩ 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

BAWH56W, NSVBAWH56W

TYPICAL CHARACTERISTICS

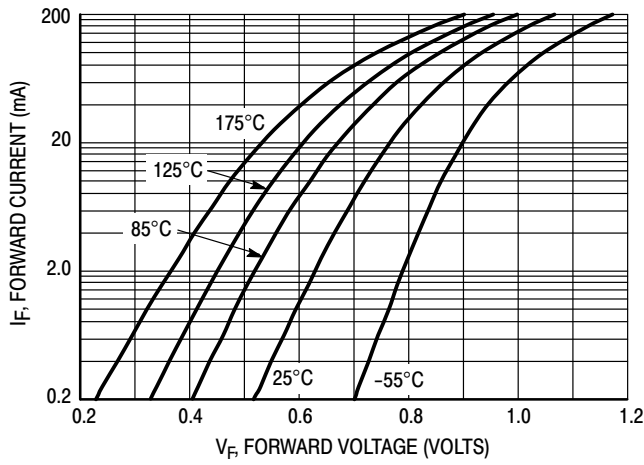


Figure 2. Forward Voltage

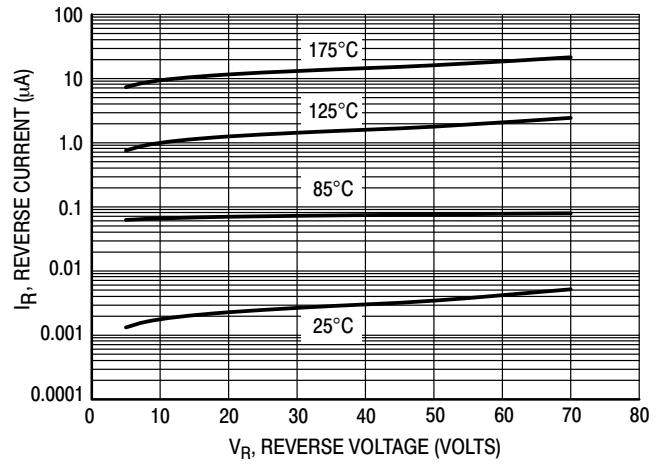


Figure 3. Leakage Current

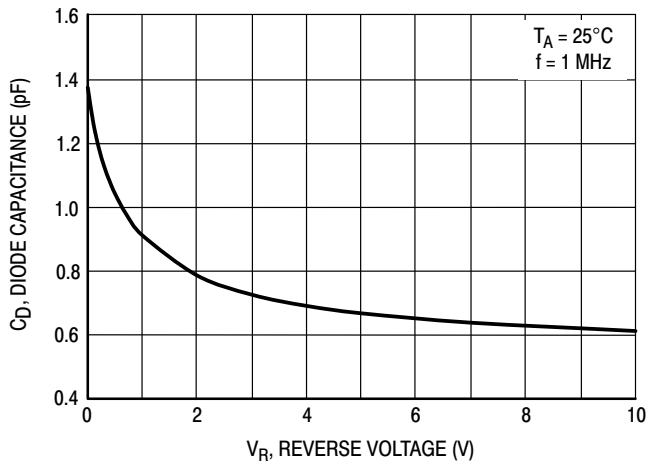


Figure 4. Capacitance



SCALE 4:1

SC-70 (SOT-323)
CASE 419
ISSUE R

DATE 11 OCT 2022



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH

DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70 REF			0.028 BSC		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.00	2.20	0.071	0.080	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
H _E	2.00	2.10	2.40	0.079	0.083	0.095

GENERIC
MARKING DIAGRAM


XX = Specific Device Code
M = Date Code
■ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present. Some products may not follow the Generic Marking.



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

SOLDERING FOOTPRINT

STYLE 1:
CANCELLED

STYLE 2:
PIN 1. ANODE
2. N.C.
3. CATHODE

STYLE 3:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 6:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 7:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE-CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

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