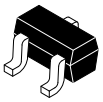
BAV70W, SBAV70W

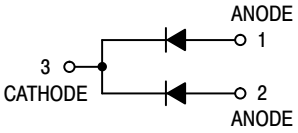
Dual Switching Diode Common Cathode

ON Semiconductor®

www.onsemi.com



SOT–323
CASE 419
STYLE 5



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_A = 25°C)

Rating	Symbol	Max	Unit
Reverse Voltage	V_R	100	V
Forward Current	I_F	200	mA
Peak Forward Surge Current	$I_{FM(surge)}$	500	mA
Forward Surge Current (60 Hz @ 1 cycle)	I_{FSM}	2.0	A
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I_{FRM}	0.7	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.

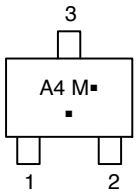
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board (Note 1) T_A = 25°C Derate above 25°C	P_D	200 1.6	mW mW/°C
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	625	°C/W
Total Device Dissipation Alumina Substrate (Note 2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°C

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

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

MARKING DIAGRAM



A4 = Specific Device Code
M = Date Code
▪ = Pb–Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BAV70WT1G	SOT–323 (Pb–Free)	3,000 / Tape & Reel
SBAV70WT1G	SOT–323 (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.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage ($I_{(BR)}$ = 100 μA)	$V_{(BR)}$	100	–	V
Reverse Voltage Leakage Current (Note 3) (V_R = 100 V) (V_R = 50 V)	I_R	– –	1.0 100	μA nA
Forward Voltage (I_F = 1.0 mA) (I_F = 10 mA) (I_F = 50 mA) (I_F = 150 mA)	V_F	– – – –	715 855 1000 1250	mV
Diode Capacitance (V_R = 0 V, f = 1.0 MHz)	C_D	–	1.5	pF
Reverse Recovery Time (I_F = I_R = 10 mA, R_L = 100 Ω, $I_{R(REC)}$ = 1.0 mA) (Figure 1)	t_{rr}	–	6.0	ns
Forward Recovery Voltage (I_F = 10 mA, t_r = 20 ns) (Figure 2)	V_{RF}	–	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.

3. For each individual diode while the second diode is unbiased.

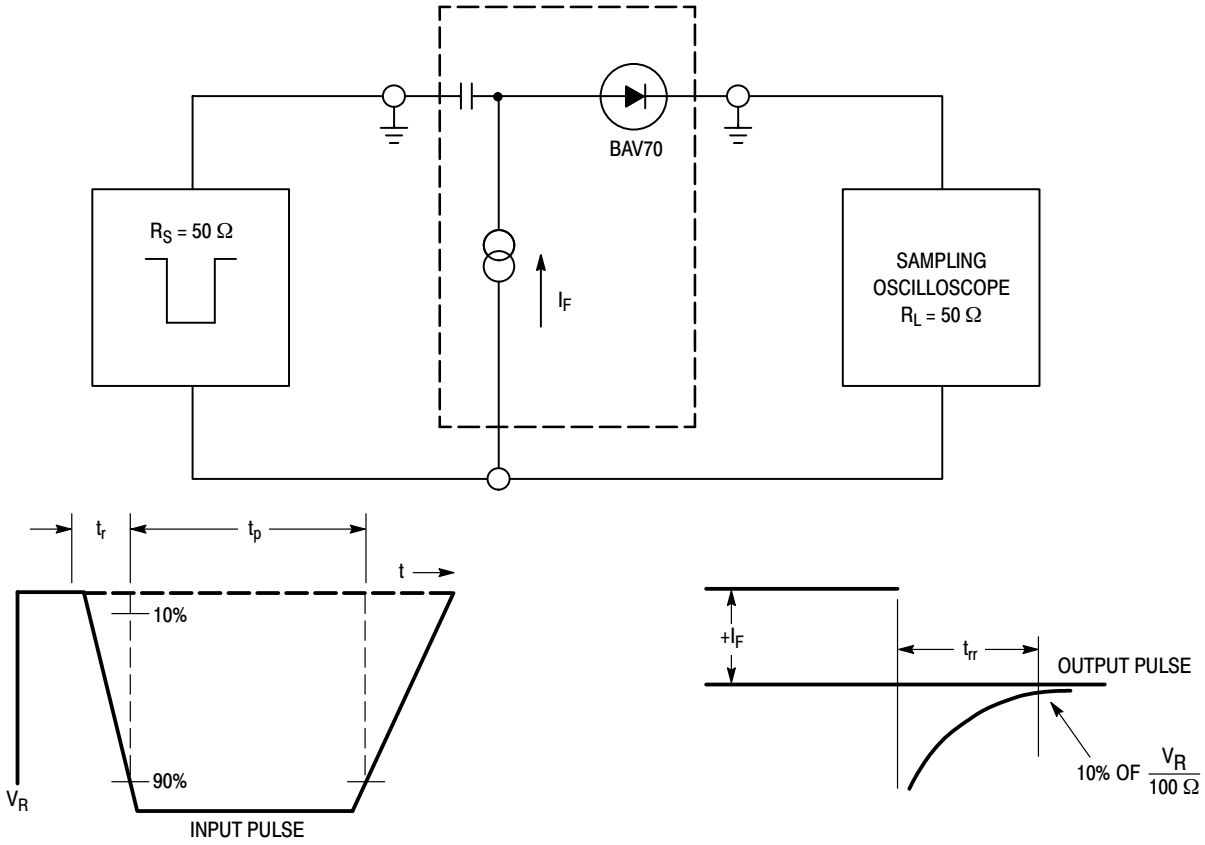


Figure 1. Recovery Time Equivalent Test Circuit

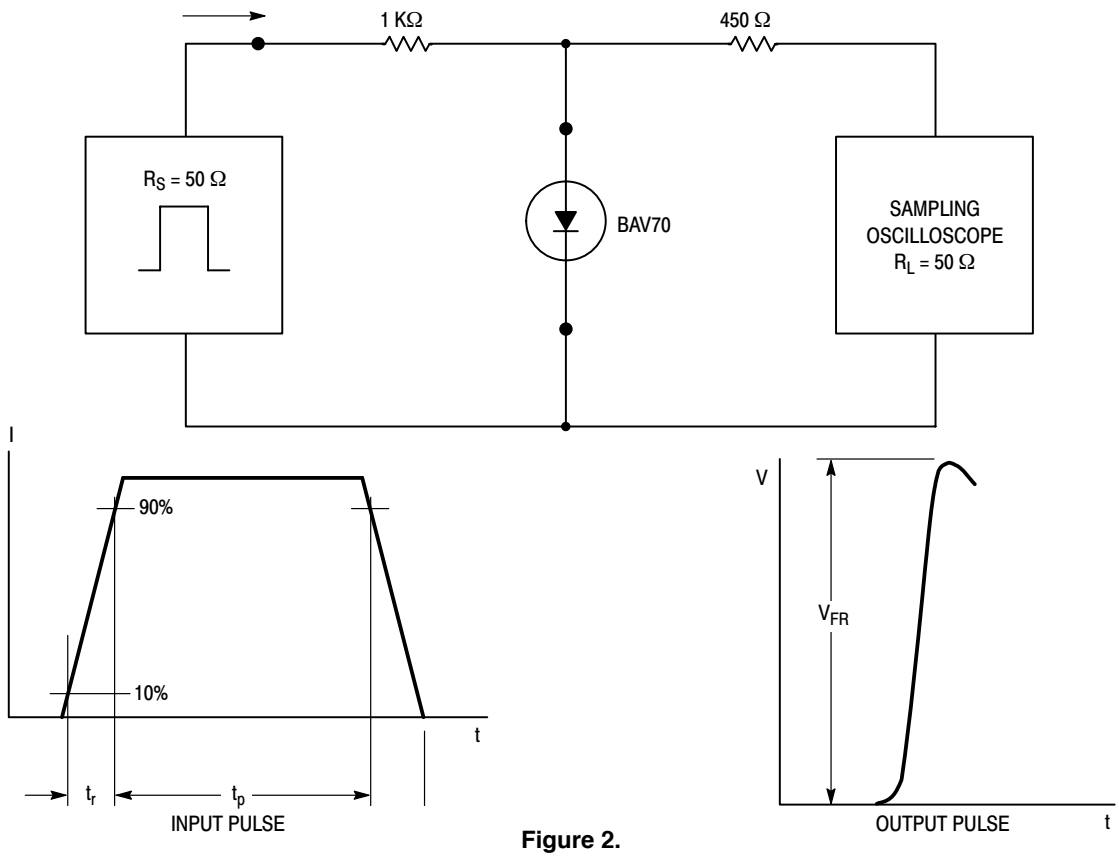


Figure 2.

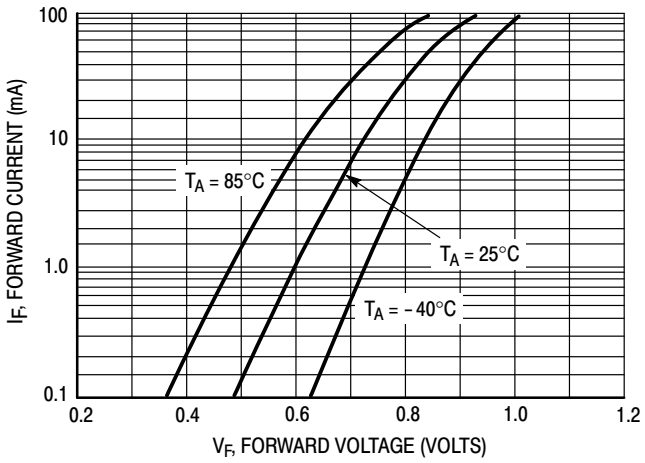


Figure 3. Forward Voltage

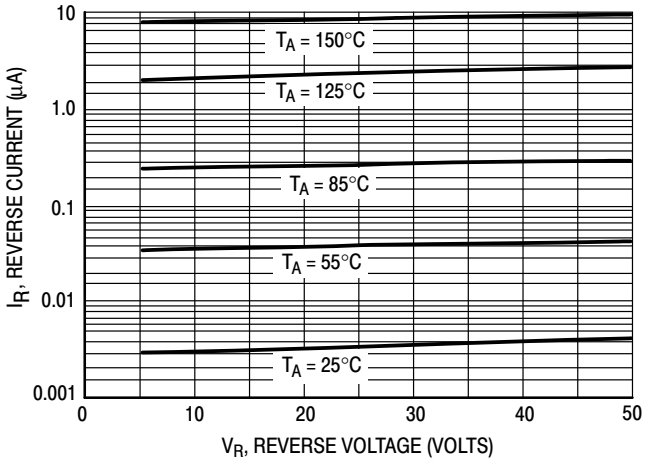


Figure 4. Leakage Current

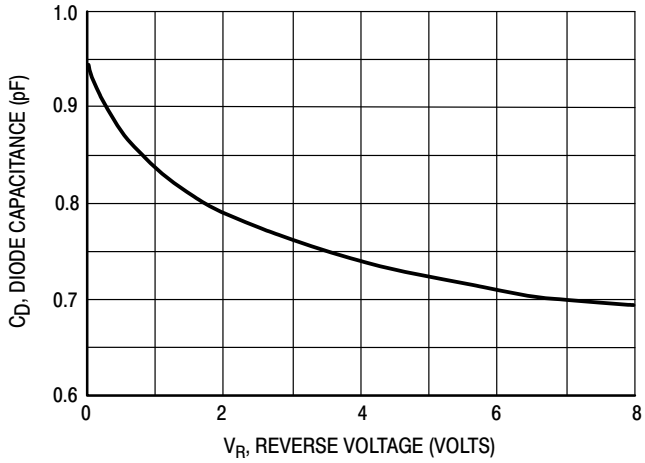


Figure 5. Capacitance

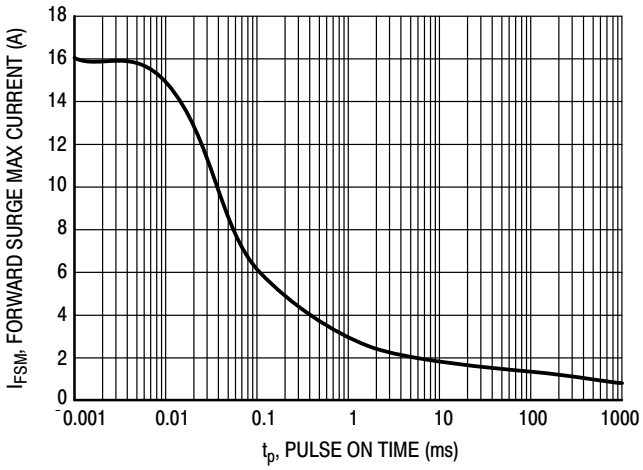
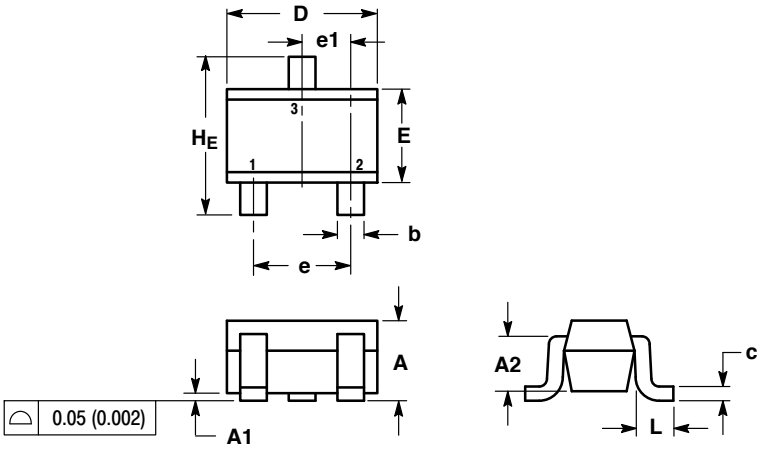


Figure 6. Forward Surge Current

PACKAGE DIMENSIONS

SC–70 (SOT–323)
CASE 419–04
ISSUE N

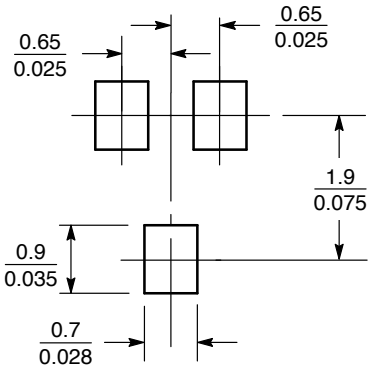


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	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 REF	
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	2.10	2.20	0.071	0.083	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

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

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.

PUBLICATION ORDERING INFORMATION

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