BAV23CLT1G

Dual High Voltage Common Cathode Switching Diode

ON Semiconductor®

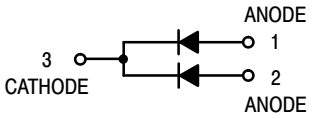
http://onsemi.com

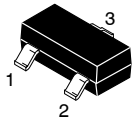
Features

- Moisture Sensitivity Level: 1
- ESD Rating – Human Body Model: Class 2
  – Machine Model: Class C
- Fast Switching Speed
- Switching Application
- This is a Halide–Free Device
- This is a Pb–Free Device

Typical Applications

- LCD TV
- Power Supply
- Industrial





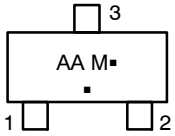
SOT–23
CASE 318
STYLE 9

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Continuous Reverse Voltage		V_R	250	V
Repetitive Peak Reverse Voltage		V_{RRM}	250	V
Peak Forward Current		I_F	400	mA
Non–Repetitive Peak Forward Surge Current	@ t = 1.0 μs @ t = 100 μs @ t = 10 ms	I_{FSM}	9.0 3.0 1.7	A
Peak Forward Surge Current		$I_{FM(surge)}$	625	mAdc
Non–Repetitive Peak Per Human Body Model Per Machine Model		 HBM MM	 4.0 400	 kV V

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.

MARKING DIAGRAM



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

ORDERING INFORMATION

Device	Package	Shipping†
BAV23CLT1G	SOT–23 (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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
SINGLE HEATED			
Total Device Dissipation (Note 1) T_A = 25°C Derate above 25°C	P_D	265 2.1	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	472	°C/W
Thermal Reference, Junction−to−Anode Lead (Note 1)	$R_{\psi JL}$	263	°C/W
Thermal Reference, Junction−to−Case (Note 1)	$R_{\psi JC}$	289	°C/W
Total Device Dissipation (Note 2) T_A = 25°C Derate above 25°C	P_D	345 2.7	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	362	°C/W
Thermal Reference, Junction−to−Anode Lead (Note 2)	$R_{\psi JL}$	251	°C/W
Thermal Reference, Junction−to−Case (Note 2)	$R_{\psi JC}$	250	°C/W
DUAL HEATED (Note 3)			
Total Device Dissipation (Note 1) T_A = 25°C Derate above 25°C	P_D	390 3.1	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	321	°C/W
Thermal Reference, Junction−to−Anode Lead (Note 1)	$R_{\psi JL}$	159	°C/W
Thermal Reference, Junction−to−Case (Note 1)	$R_{\psi JC}$	138	°C/W
Total Device Dissipation (Note 2) T_A = 25°C Derate above 25°C	P_D	540 4.3	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	231	°C/W
Thermal Reference, Junction−to−Anode Lead (Note 2)	$R_{\psi JL}$	148	°C/W
Thermal Reference, Junction−to−Case (Note 2)	$R_{\psi JC}$	119	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

1. FR-4 @ 100 mm^2, 1 oz. copper traces, still air.
2. FR-4 @ 500 mm^2, 2 oz. copper traces, still air.
3. Dual heated values assume total power is sum of two equally powered channels

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current (V_R = 200 Vdc) (V_R = 200 Vdc, T_J = 150°C)	I_R	 − −	 0.1 100	μAdc
Reverse Breakdown Voltage (I_{BR} = 100 μAdc)	$V_{(BR)}$	250	−	Vdc
Forward Voltage (I_F = 100 mAdc) (I_F = 200 mAdc)	V_F	 − −	 1000 1250	mV
Diode Capacitance (V_R = 0, f = 1.0 MHz)	C_T	−	5.0	pF
Reverse Recovery Time (I_F = I_R = 30 mAdc, R_L = 100 Ω)	t_{rr}	−	150	ns

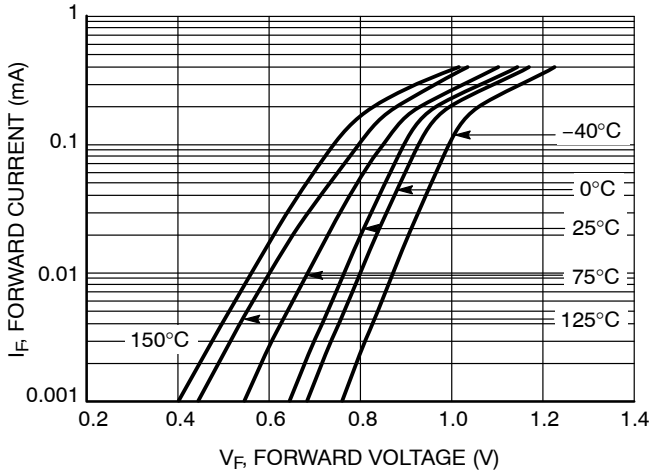


Figure 1. Forward Voltage

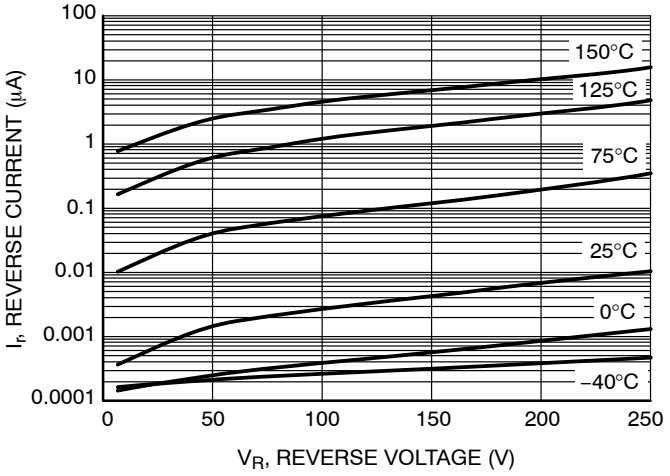


Figure 2. Reverse Current

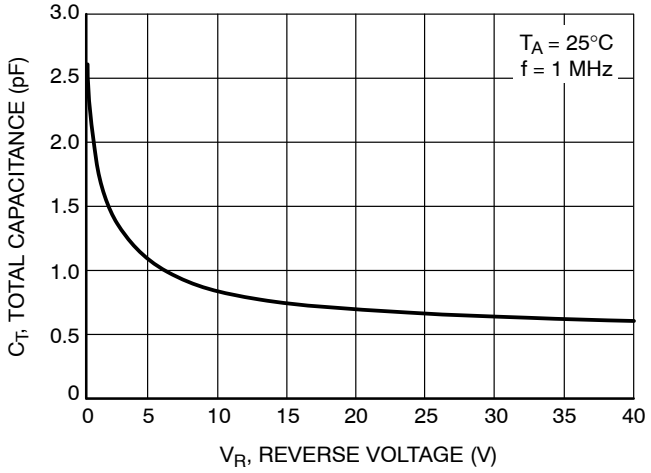
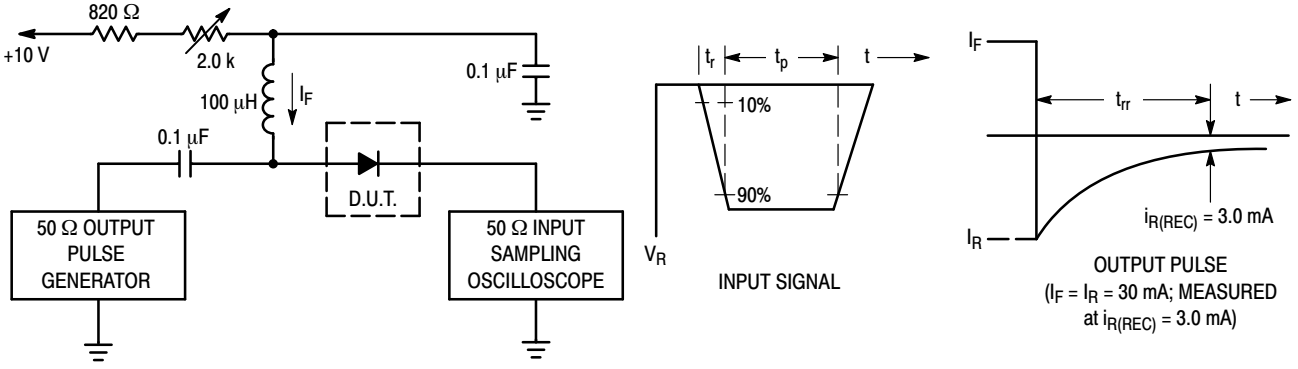


Figure 3. Total Capacitance



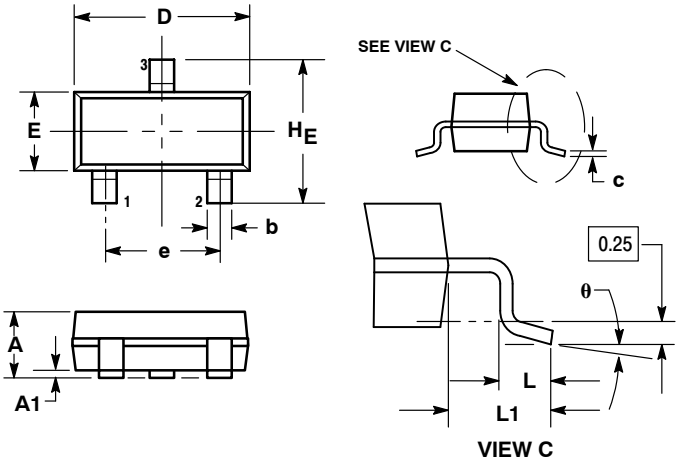
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 30 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 30 mA.
3. $t_p \gg t_{rr}$

Figure 4. Recovery Time Equivalent Test Circuit

BAV23CLT1G

PACKAGE DIMENSIONS

SOT−23 (TO−236)
CASE 318−08
ISSUE AN

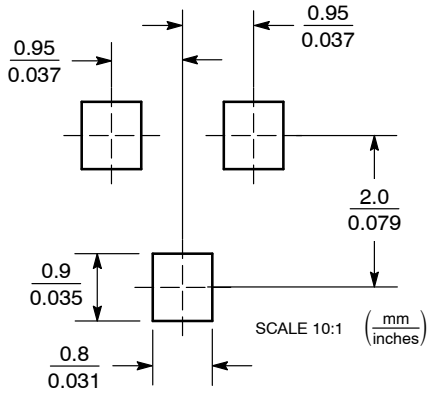


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104

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

SOLDERING FOOTPRINT



PUBLICATION ORDERING INFORMATION

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