

Features

- Surface Mount Package Ideally Suited for Automated Insertion
- Suitable for Ultra-Low Leakage Current Applications, Including High-Precision Instrumentation And Portable Electronics
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

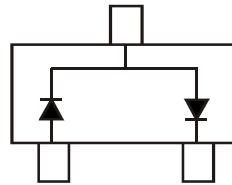
Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Finish Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

SOT323



Top View

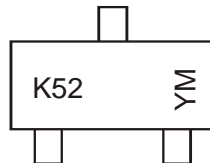

 Top View
Internal Schematic

Ordering Information (Notes 4 & 5)

Part Number	Compliance	Case	Packaging
BAV199WQ-7	Automotive	SOT323	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



K52= Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: D = 2016)
 M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	...	2016	2017	2018	2019	2020
Code	Y	Z	A	...	D	E	F	G	H

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	85	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	60	V
Forward Continuous Current (Note 6)	I _{FM}	160	mA
Single Diode		140	
Double Diode			
Repetitive Peak Forward Current (Note 6)	I _{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	I _{FSM}	4.0	A
@ t = 1.0μs		1.0	
@ t = 1.0ms		0.5	
@ t = 1.0s			

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	85	—	—	V	I _R = 100μA
Forward Voltage	V _F	—	—	0.90 1.0 1.1 1.25	V	I _F = 1.0mA I _F = 10mA I _F = 50mA I _F = 150mA
Leakage Current (Note 7)	I _R	—	—	5.0 80	nA	V _R = 75V V _R = 75V, T _J = +150°C
Total Capacitance	C _T	—	2	—	pF	V _R = 0, f = 1.0MHz
Reverse Recovery Time	t _{RR}	—	—	3.0	μs	I _F = I _R = 10mA, I _{RR} = 0.1 x I _R , R _L = 100Ω

Notes: 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 7. Short duration pulse test used to minimize self-heating effect.

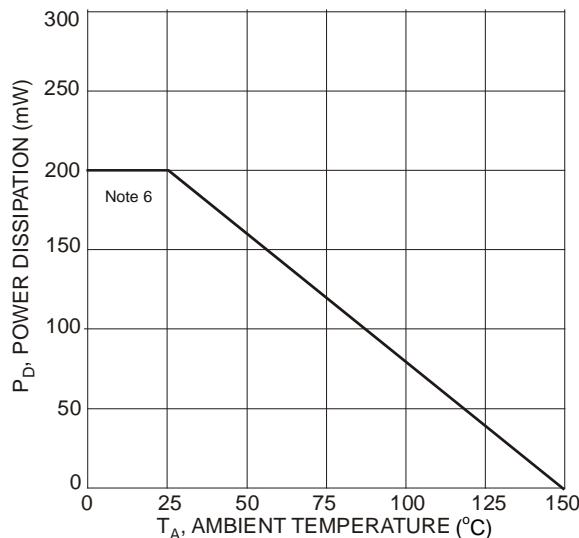


Fig. 1 Power Derating Curve, Total Package

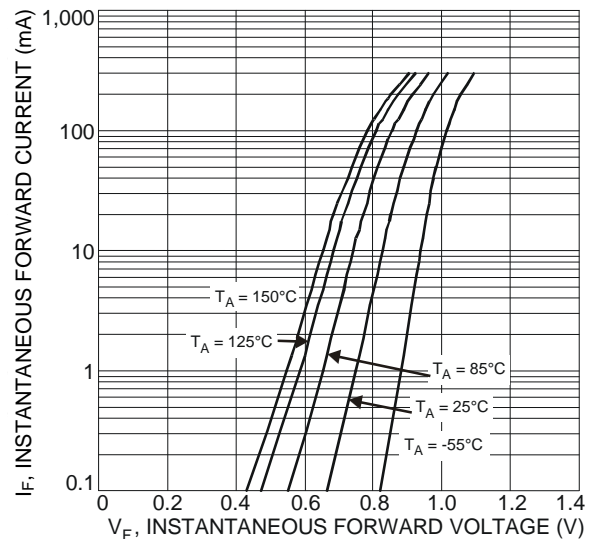
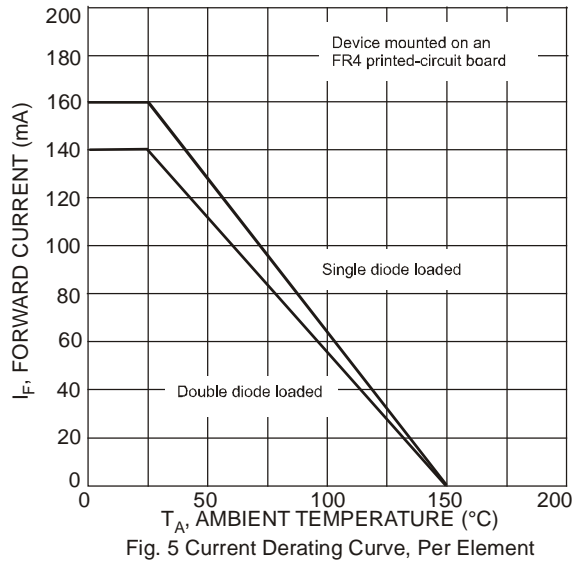
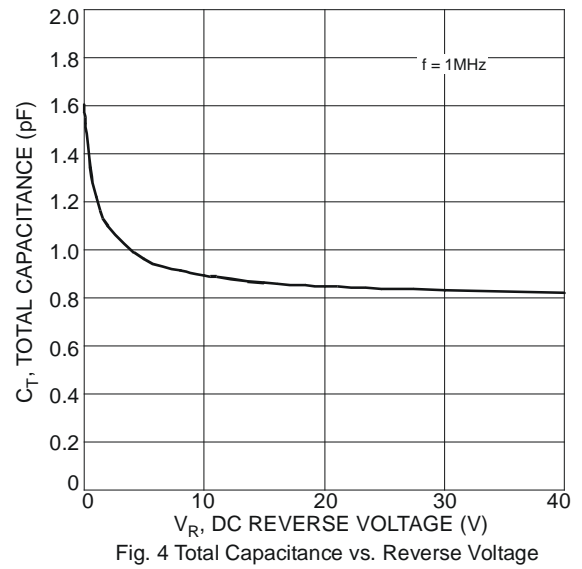
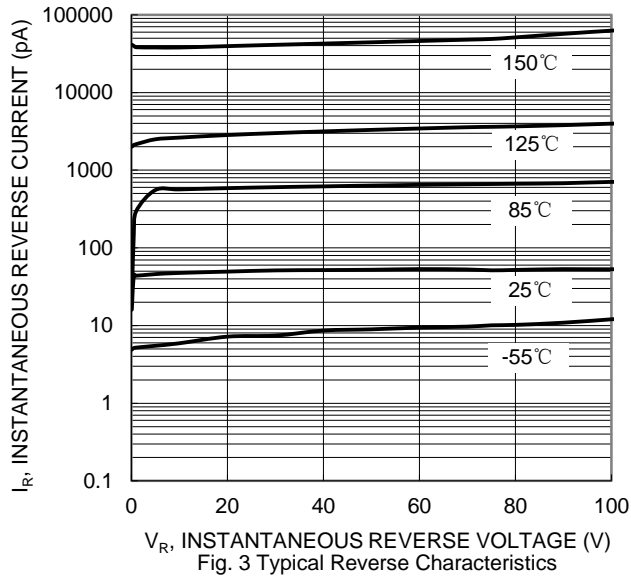


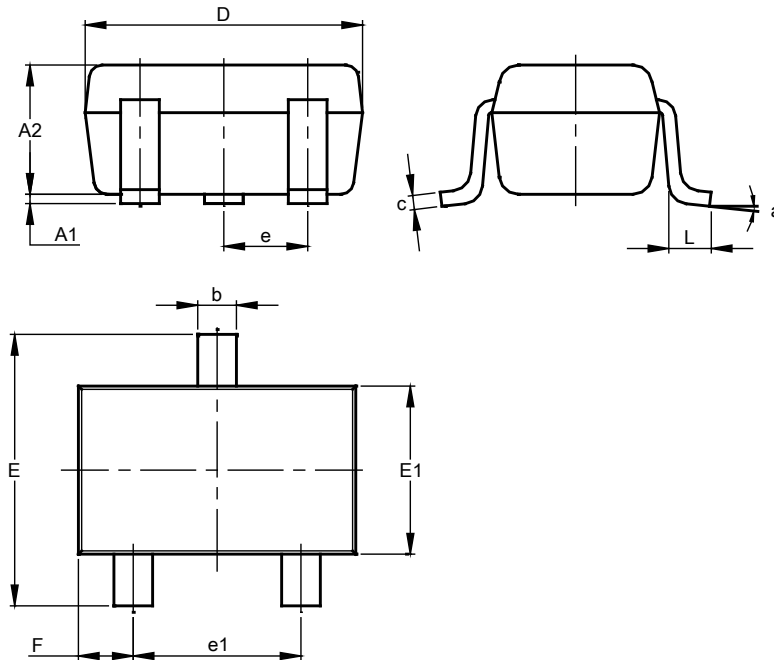
Fig. 2 Typical Forward Characteristics



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323

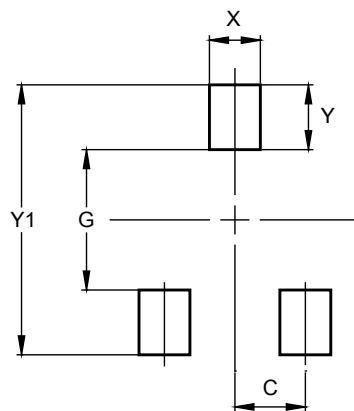


SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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