

Features

- Fast Switching Speed: Maximum of 4ns
- Low Capacitance: Maximum of 2.0pF
- Small Surface Mount Package
- For General Purpose Switching Applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

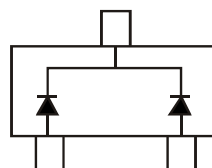
Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe) **(e3)**
- Polarity: See Diagram
- Weight: 0.006 grams (approximate)

SOT323



Top View

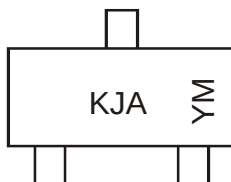

 Top View
 Internal Schematic

Ordering Information (Notes 4 & 5)

Part Number	Qualification	Case	Packaging
BAV70W-7-F	Commercial	SOT323	3000/Tape & Reel
BAV70WQ-7-F	Automotive	SOT323	3000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See <http://www.diodes.com> 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. For packaging details, go to our website at <http://www.diodes.com>.
 5. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

Marking Information



KJA = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: Z = 2012
 M = Month ex: 9 = September

Date Code Key

Year	2000	2001	2002	2003		2012	2013	2014	2015	2016	2017	2018	2019
Code	L	M	N	P		Z	A	B	C	D	E	F	G

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
Non-Repetitive Peak Reverse Voltage	V _{RM}	100	V
Peak Repetitive Reverse Voltage	V _{RRM}	75	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	53	V
Forward Continuous Current (Note 6)	I _{FM}	300	mA
Non-Repetitive Peak Forward Surge Current (Note 6)	I _{FSM}	@ t = 1.0μs 2.0	A
		@ t = 1.0s 1.0	

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	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	75	—	V	I _R = 100μA
Forward Voltage	V _F	—	0.715 0.855 1.0 1.25	V	I _F = 1.0mA I _F = 10mA I _F = 50mA I _F = 150mA
Reverse Current (Note 7)	I _R	—	2.5 50 30 25	μA μA μA nA	V _R = 75V V _R = 75V, T _J = +150°C V _R = 25V, T _J = +150°C V _R = 20V
Total Capacitance	C _T	—	2.0	pF	V _R = 0, f = 1.0MHz
Reverse Recovery Time	t _{rr}	—	4.0	ns	I _F = I _R = 10mA, I _{rr} = 0.1 x I _R , R _L = 100Ω

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

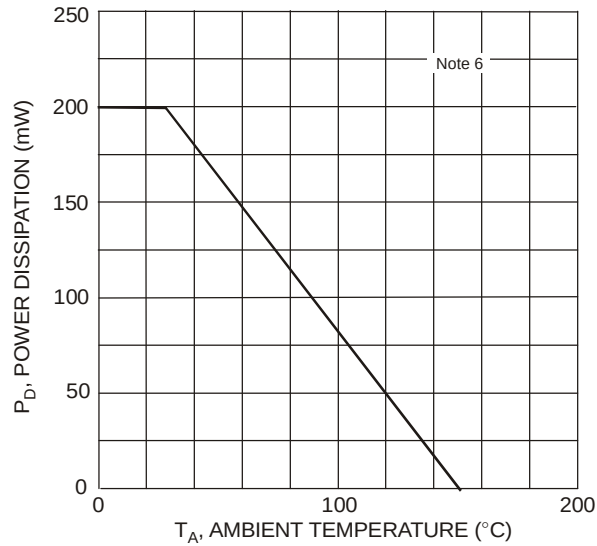


Figure 1 Power Derating Curve, Total Package

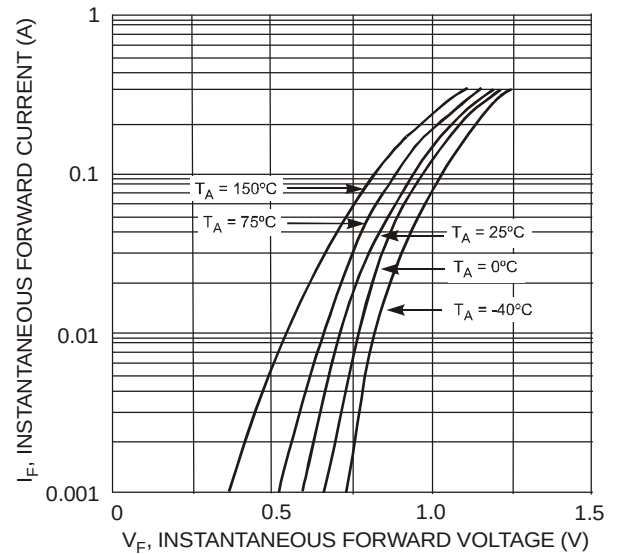


Figure 2 Typical Forward Characteristics, Per Element

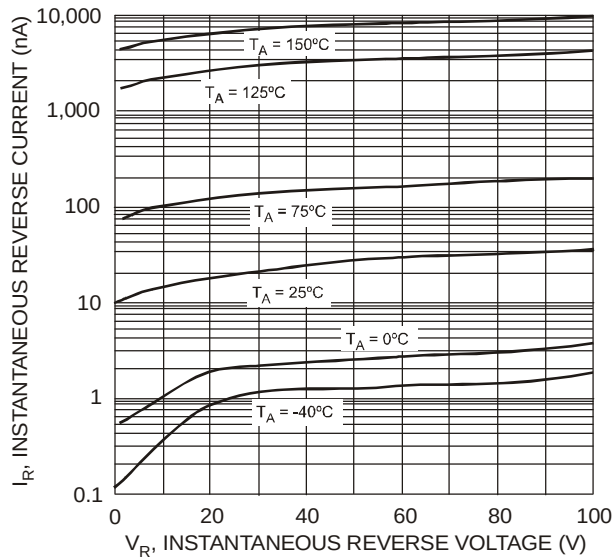


Figure 3 Typical Reverse Characteristics, Per Element

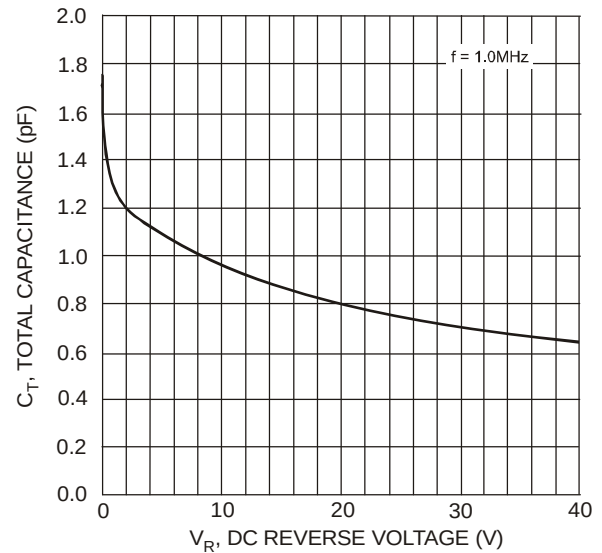


Figure 4 Total Capacitance vs. Reverse Voltage, Per Element

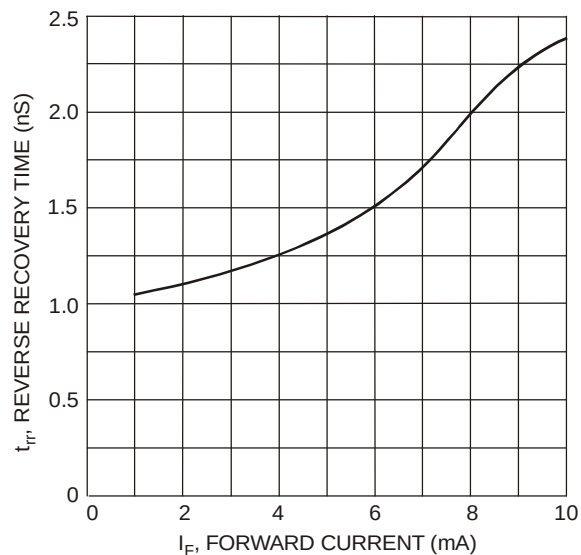
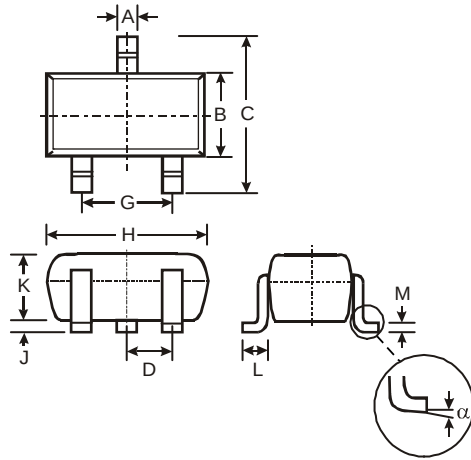


Figure 5 Reverse Recovery Time vs. Forward Current, Per Element

Package Outline Dimensions

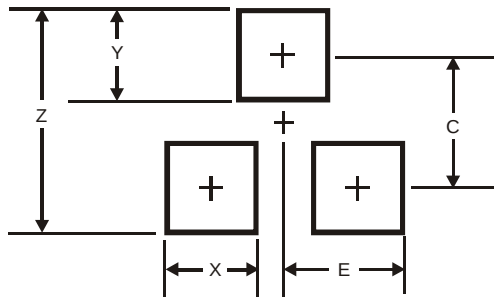
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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