DUAL SURFACE MOUNT SWITCHING DIODE

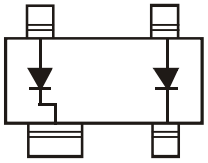
Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOT143
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead-Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe).
- Polarity: See Diagram Below
- Weight: 0.008 grams (Approximate)

SOT143



Device Schematic

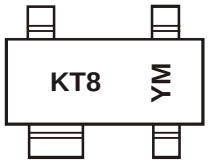
Ordering Information (Note 3)

Part Number	Case	Packaging
BAV23-7	SOT143	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.

Marking Information

SOT143



KT8 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Y = 2011)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Code	Y	Z	A	B	C	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
Repetitive Peak Reverse Voltage		V_{RRM}	250	V
Working Peak Reverse Voltage DC Blocking Voltage		V_{RWM} V_R	200	V
RMS Reverse Voltage		$V_{R(RMS)}$	141	V
Forward Current (Note 4)		I_F	400	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 100μs @ t = 10ms	I_{FSM}	9.0 3.0 1.7	A
Repetitive Peak Forward Current (Note 4)		I_{FRM}	625	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P_D	400	mW
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	312	°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 5)	$V_{(BR)R}$	250	—	V	I_R = 100μA
Forward Voltage	V_F	—	1.0 1.25	V	I_F = 100mA I_F = 200mA
Reverse Current (Note 5)	I_R	— —	100 100	nA μA	V_R = 200V V_R = 200V, T_J = +150°C
Total Capacitance	C_T	—	2.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	50	ns	I_F = I_R = 30mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

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

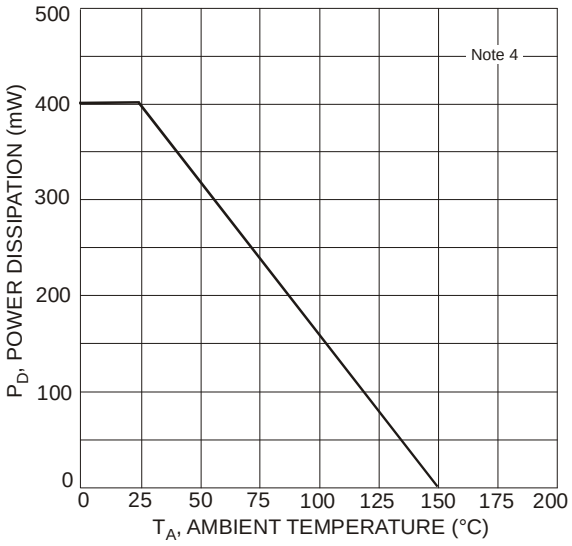


Fig. 1 Power Derating Curve, Total Package

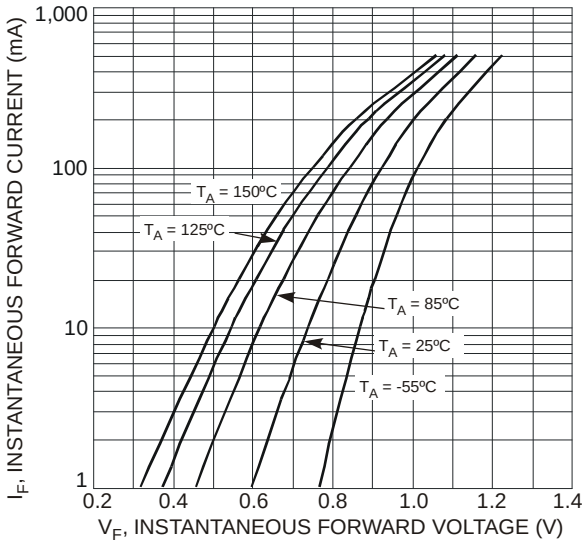


Fig. 2 Typical Forward Characteristics, Per Element

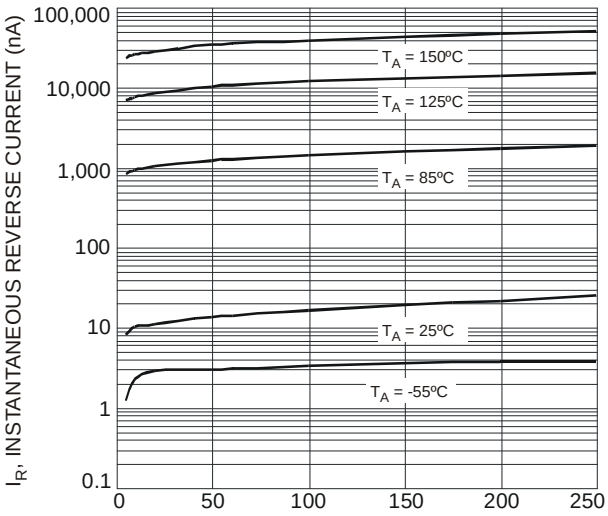


Fig. 3 Typical Reverse Characteristics, Per Element

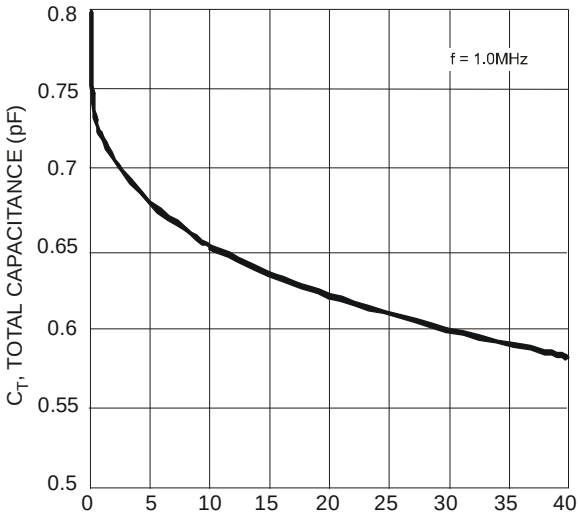
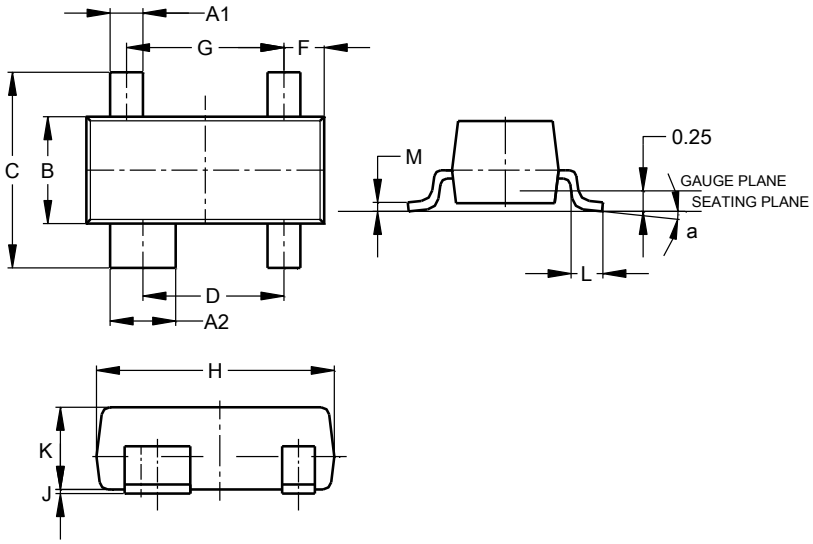


Fig. 4 Typical Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

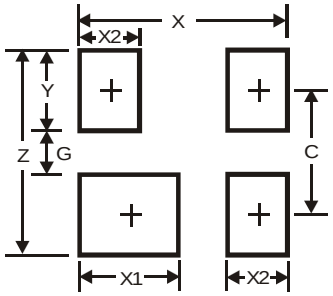
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SOT143			
Dim	**Min**	**Max**	**Typ**
A1	0.37	0.51	0.400
A2	0.77	0.93	0.800
B	1.20	1.40	1.30
C	2.28	2.48	2.38
D	1.58	1.83	1.72
F	0.45	0.60	0.49
G	1.78	2.03	1.92
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.89	1.00	-
L	0.46	0.60	0.50
M	0.085	0.18	0.11
a	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	2.70
G	1.30
X	2.50
X1	1.00
X2	0.60
Y	0.70
C	2.00

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