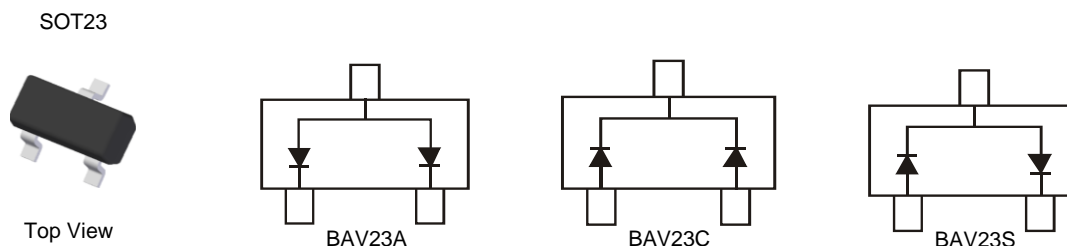


SURFACE MOUNT HIGH VOLTAGE DUAL SWITCHING DIODE
Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- High Reverse Breakdown Voltage
- Low Leakage Current
- **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**

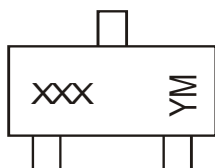
Mechanical Data

- Case: SOT23
- 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). (B3)
- Polarity: See Diagrams Below
- Weight: 0.008 grams (Approximate)


Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
BAV23A-7-F	Commercial	SOT23	3,000/Tape & Reel
BAV23A-13-F	Commercial	SOT23	10,000/Tape & Reel
BAV23AQ-7-F	Automotive	SOT23	3,000/Tape & Reel
BAV23AQ-13-F	Automotive	SOT23	10,000/Tape & Reel
BAV23C-7-F	Commercial	SOT23	3,000/Tape & Reel
BAV23C-13-F	Commercial	SOT23	10,000/Tape & Reel
BAV23CQ-7-F	Automotive	SOT23	3,000/Tape & Reel
BAV23CQ-13-F	Automotive	SOT23	10,000/Tape & Reel
BAV23S-7-F	Commercial	SOT23	3,000/Tape & Reel
BAV23S-13-F	Commercial	SOT23	10,000/Tape & Reel
BAV23SQ-13-F	Automotive	SOT23	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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>.

Marking Information


XXX = Product Type Marking Code
 ex. KT7 = BAV23A
 KT6 = BAV23C
 KL31 = BAV23S
 YM = Date Code Marking
 Y = Year (ex: F = 2018)
 M = Month (ex: 9 = September)

Date Code Key

Year	2003	2004	2005	2006	2018	2019	2020	2021	2022	2023	2024	2025
Code	P	R	S	T	F	G	H	I	J	K	L	M

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	V _{RWM}	200	V
DC Blocking Voltage	V _R		V
RMS Reverse Voltage	V _{R(RMS)}	141	V
Forward Continuous Current (Note 5, Note 7)	I _{FM}	400	mA
Non-Repetitive Peak Forward Surge Current	I _{FSM}	9.0	A
		3.0	
		1.7	
Repetitive Peak Forward Surge Current (Note 5)	I _{FRM}	625	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	350	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R _{θJA}	357	°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 6)	V _{(BR)R}	250	—	V	I _R = 100μA
Forward Voltage	V _F	—	1.0	V	I _F = 100mA
		—	1.25		I _F = 200mA
Reverse Current (Note 6)	I _R	—	100	nA	V _R = 200V, T _J = 25°C
		—	100	μA	V _R = 200V, T _J = 150°C
Total Capacitance	C _T	—	5.0	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: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
 6. Short duration pulse test used to minimize self-heating effect.
 7. Double Diode Loaded in Parallel. For Single Diode or Double Diode Loaded in Series, the continuous forward current should be reduced by half.

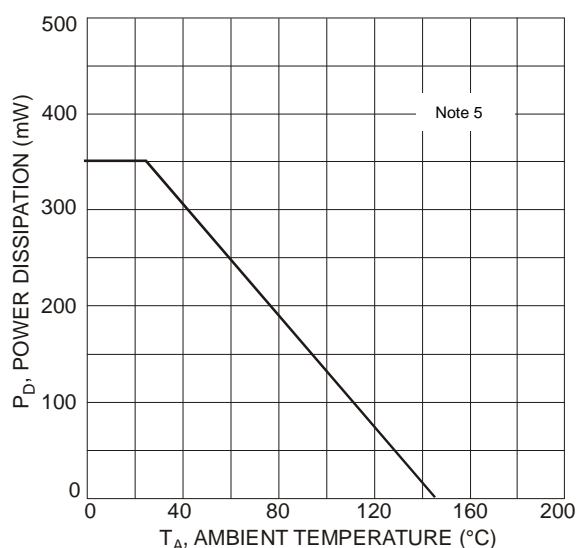


Fig. 1 Power Derating Curve, Total Package

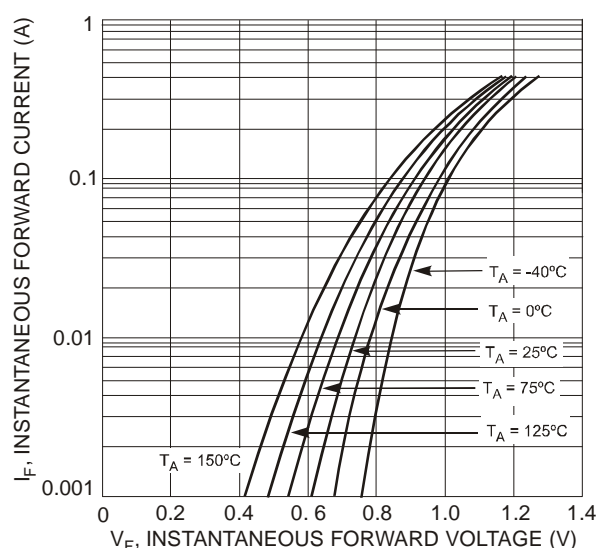


Fig. 2 Typical Forward Characteristics, Per Element

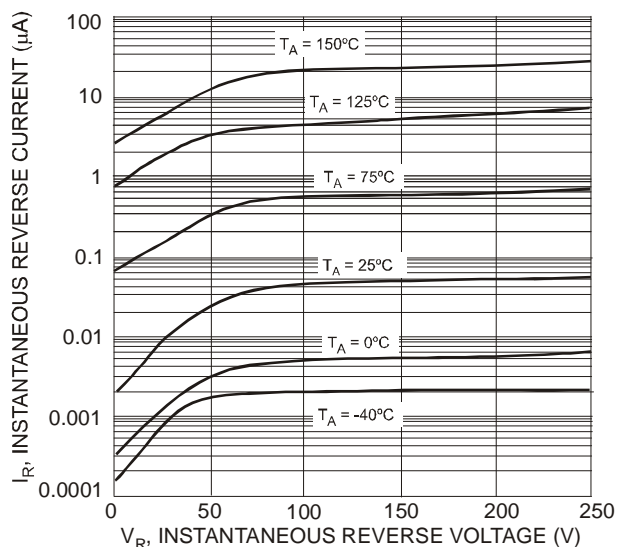


Fig. 3 Typical Reverse Characteristics, Per Element

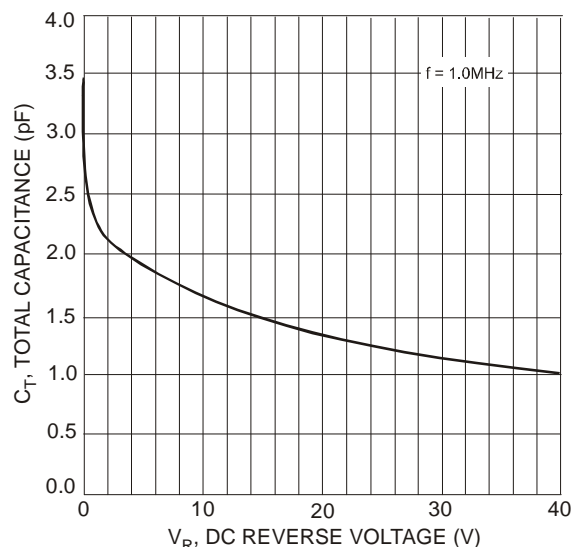
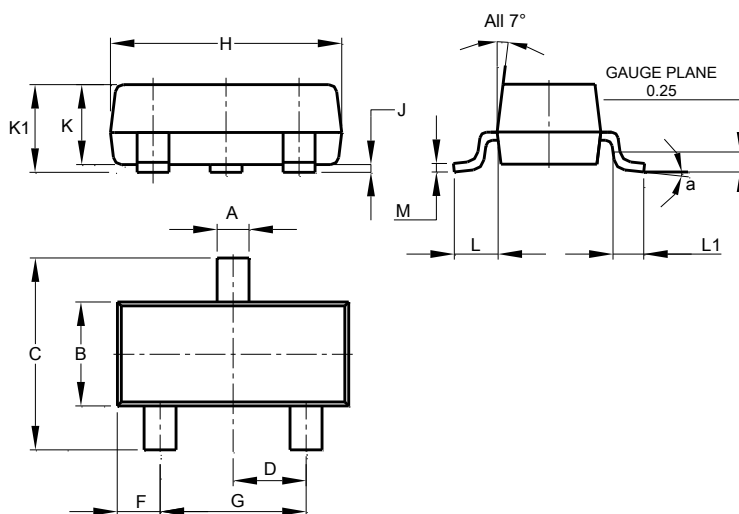


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

SOT23

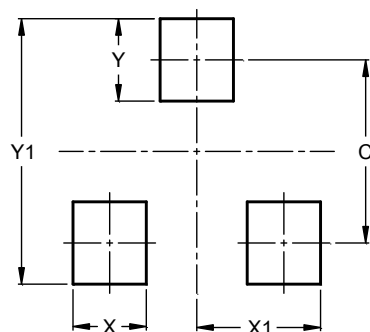


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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