



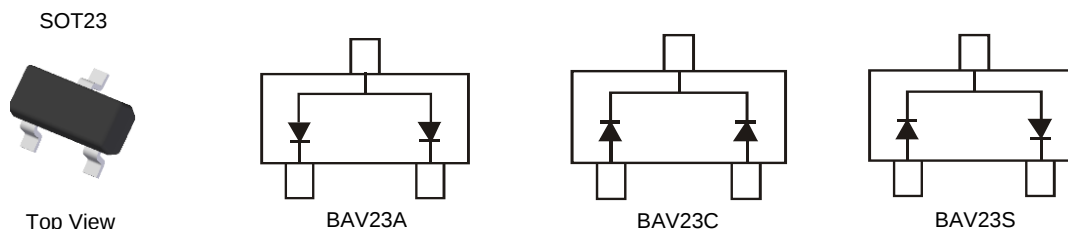
THE DATASHEET OF BAV23A-7-F

Features

- Fast Switching Speed
- Ideal for Battery-Powered, Portable Applications
- High Reverse Breakdown Voltage
- Low Leakage Current
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.
- <https://www.diodes.com/quality/product-definitions/>
- An automotive-compliant part is available under separate datasheet ([BAV23AQ/CQ/SQ](#))

Mechanical Data

- Package: SOT23
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish—Lead-Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208 
- Polarity: See Diagrams Below
- Weight: 0.008 grams (Approximate)

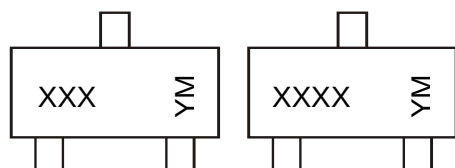


Ordering Information (Note 4)

Part Number	Package	Packing	
		Quantity	Carrier
BAV23A-7-F	SOT23	3,000	Tape & Reel
BAV23A-13-F	SOT23	10,000	Tape & Reel
BAV23C-7-F	SOT23	3,000	Tape & Reel
BAV23S-7-F	SOT23	3,000	Tape & Reel
BAV23S-13-F	SOT23	10,000	Tape & Reel

- Notes:
- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 - 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.
 - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 - For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



XXX or XXXX = Product Type Marking Code

ex: KT7 = BAV23A

KT6 = BAV23C

KL31 = BAV23S

YM = Date Code Marking

Y = Year (ex: K = 2023)

M = Month (ex: 9 = September)

Date Code Key

Year	2003		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	P		K	L	M	N	P	R	S	T	U	V
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	141	V
RMS Reverse Voltage	V _{R(RMS)}	141	V
Forward Continuous Current (Notes 5, 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}	-55 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:

- Part mounted on FR-4 substrate with pad dimensions 1 inch × 1 inch, 2oz, copper, single-sided, PC board.
- Short duration pulse test used to minimize self-heating effect.
- Double Diode Loaded in Parallel. For Single Diode or Double Diode Loaded in Series, the continuous forward current should be reduced by half.

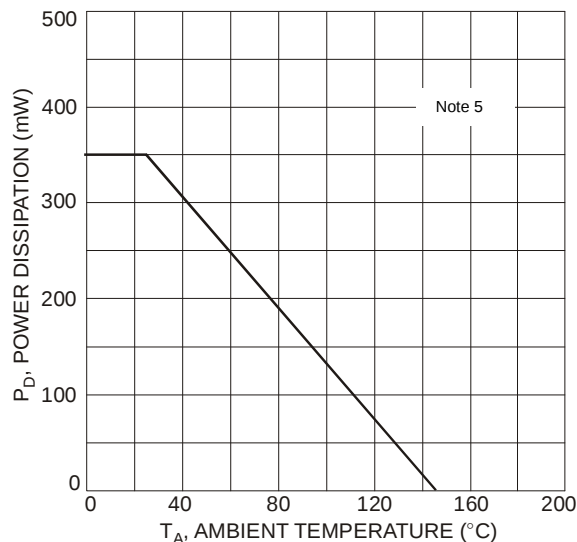


Fig. 1 Power Derating Curve, Total Package

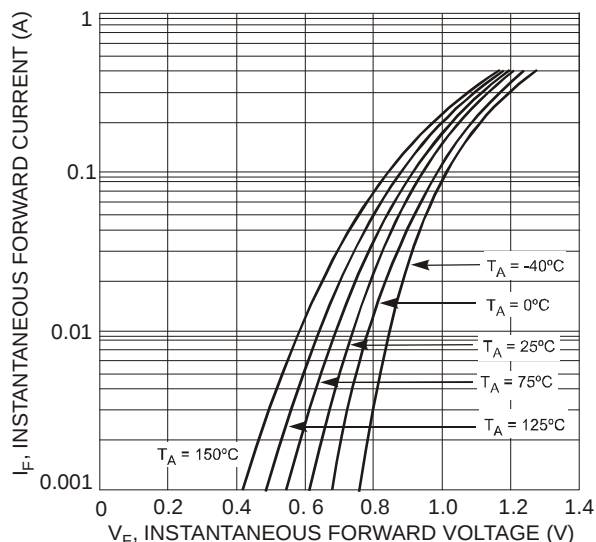


Fig. 2 Typical Forward Characteristics, Per Element

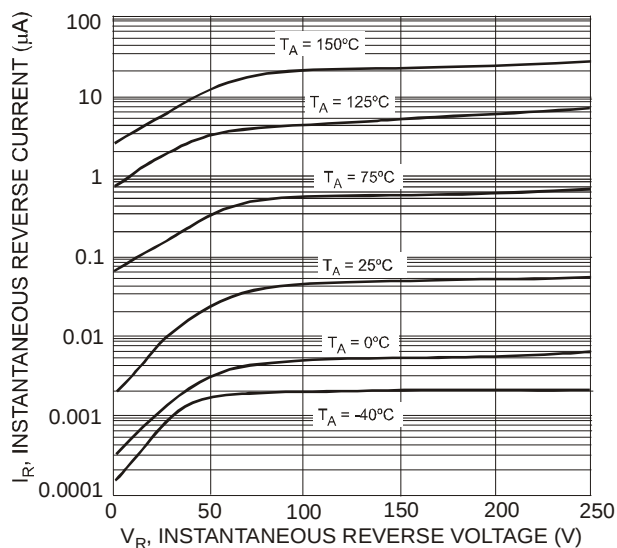


Fig. 3 Typical Reverse Characteristics, Per Element

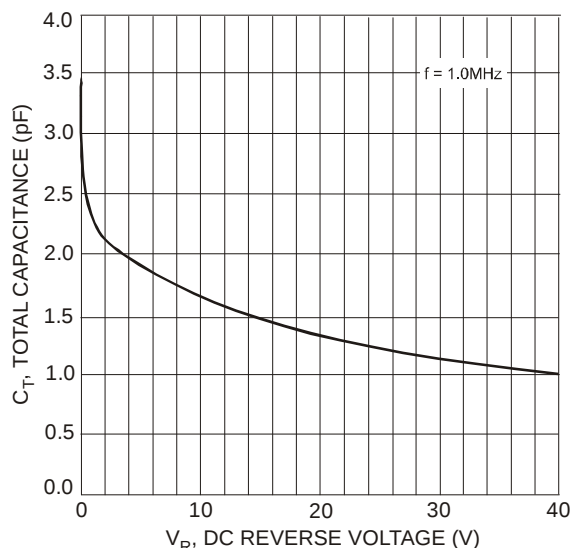
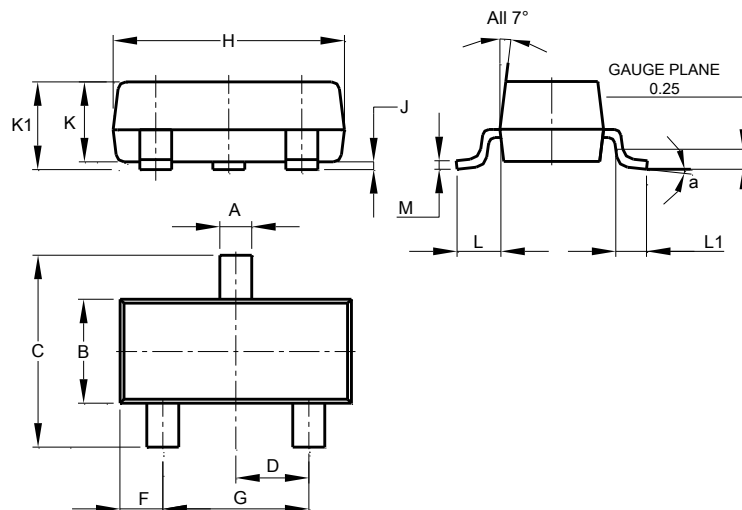


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

SOT23

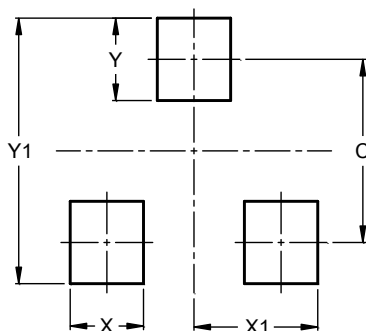


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

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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