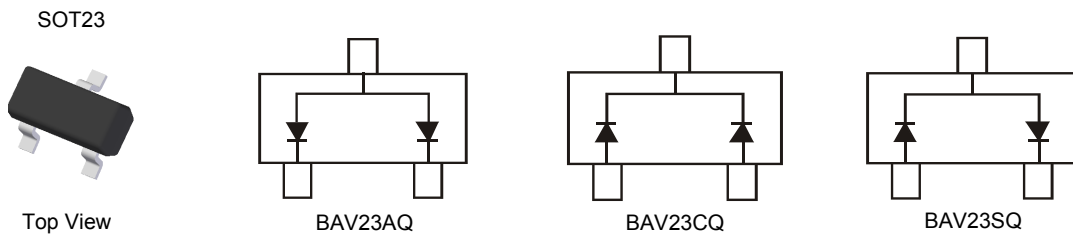


Features

- 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)**
- **The BAV23AQ/CQ/SQ is suitable for automotive applications requiring specific change control and is AEC-Q101 qualified, is PPAP capable, and is manufactured in IATF16949:2016 certified facilities.**

Mechanical Data

- Case: SOT23
- Case 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 (E3)
- Polarity: See Diagrams Below
- Weight: 0.008 grams (Approximate)

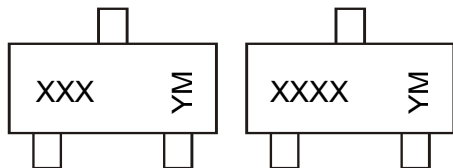


Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
BAV23AQ-7-F	Automotive	SOT23	3000/Tape & Reel
BAV23AQ-13-F	Automotive	SOT23	10,000/Tape & Reel
BAV23CQ-7-F	Automotive	SOT23	3000/Tape & Reel
BAV23CQ-13-F	Automotive	SOT23	10,000/Tape & Reel
BAV23SQ-7-F	Automotive	SOT23	3000/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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



XXX or XXXX = Product Type Marking Code
 ex: KT7 = BAV23AQ
 KT6 = BAV23CQ
 KL31 = BAV23SQ
 YM = Date Code Marking
 Y = Year (ex: G = 2019)
 M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	...	2018	2019	2020	2021	2022	2023	2024	2025
Code	Y	Z	A	B	...	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		
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}	@ t = 1.0µs	9.0
		@ t = 100µs	3.0
		@ t = 10ms	1.7
Repetitive Peak Forward Surge Current (Note 5)	I _{FRM}	625	mA

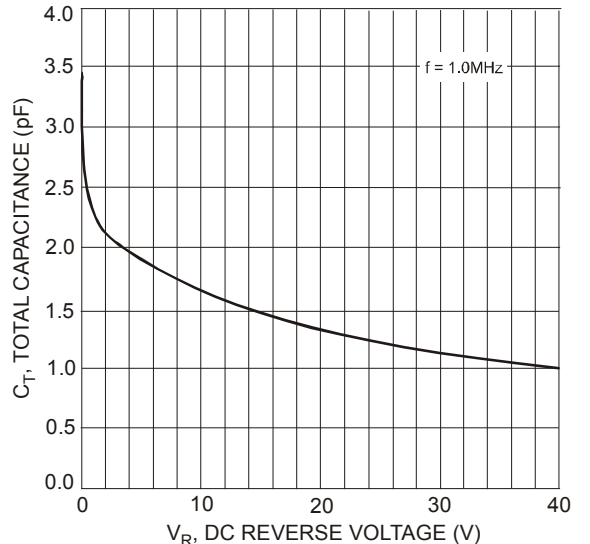
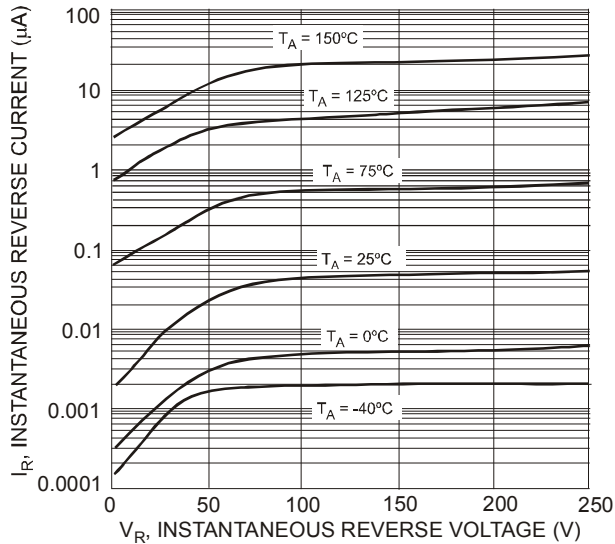
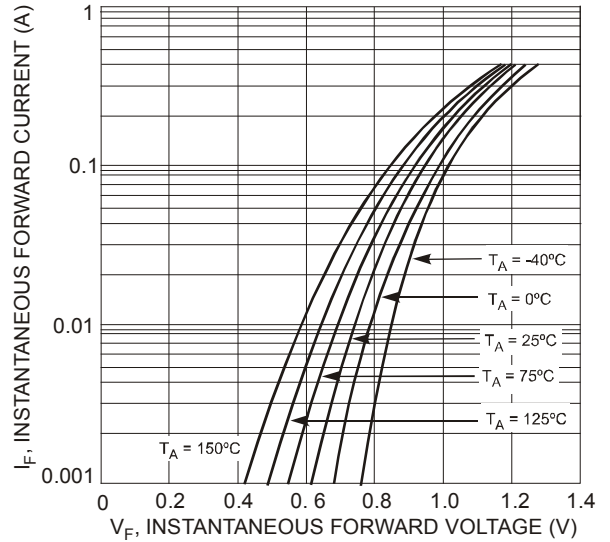
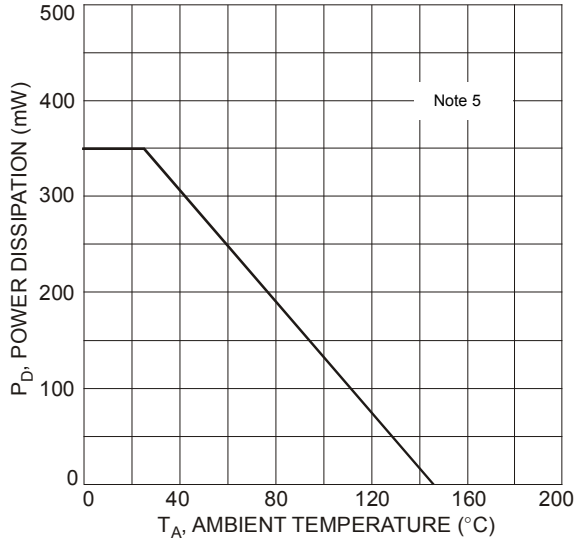
Thermal Characteristics

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.)

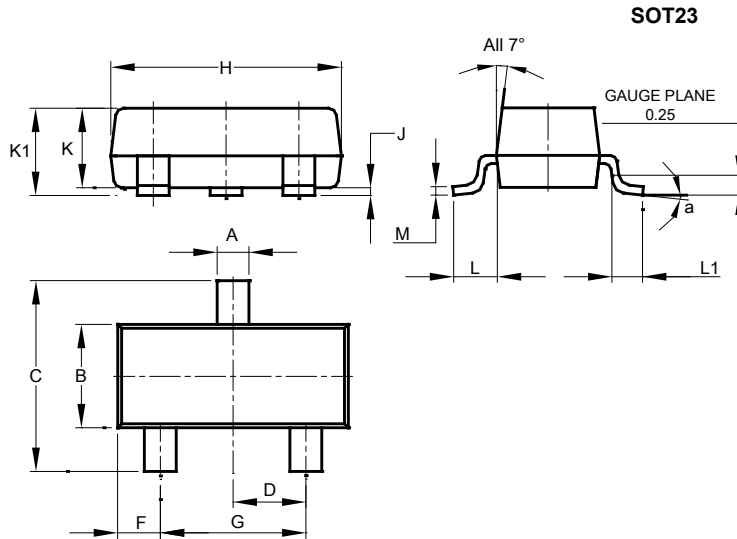
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	250	—	V	I _R = 100µA
Forward Voltage	V _F	—	1.0	V	I _F = 100mA
		—	1.25		I _F = 200mA
Reverse Current (Note 6)	I _R	—	100	nA	V _R = 200V, T _J = +25°C
		—	100	µA	V _R = 200V, T _J = +150°C
Total Capacitance	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 × I _R , R _L = 100Ω

- Notes:
5. Part mounted on FR-4 substrate with pad dimensions 1 inch × 1 inch, 2oz, copper, single-sided, PC board.
 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.



Package Outline Dimensions

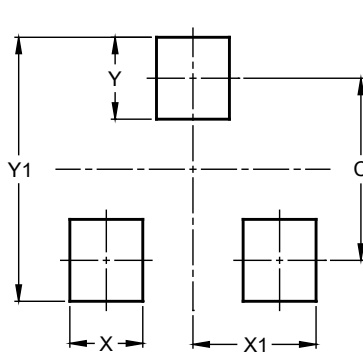
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



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.



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

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