

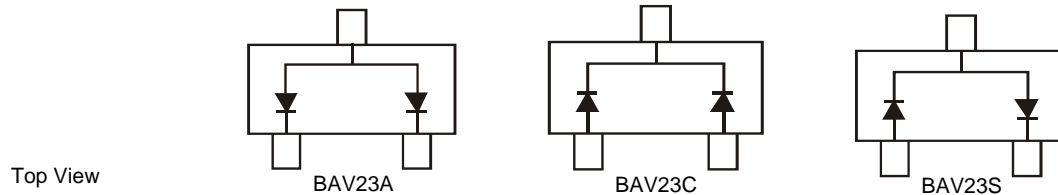
**SURFACE MOUNT HIGH VOLTAGE DUAL SWITCHING DIODE**
**Features**

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- High Reverse Breakdown Voltage
- Low Leakage Current
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 1 and 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

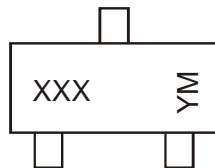
- Case: SOT23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Weight: 0.008 grams (approximate)

SOT23


**Ordering Information** (Note 3)

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 purposefully added lead. Halogen and Antimony Free.
  2. Product manufactured with Date Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.
  3. 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: Y = 2011)  
 M = Month (ex: 9 = September)

## Date Code Key

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	P	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E

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** @ $T_A = 25^\circ\text{C}$  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 (Note 4)	$I_{FM}$	400	mA
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	@ $t = 1.0\mu\text{s}$	9.0
		@ $t = 100\mu\text{s}$	3.0
		@ $t = 10\text{ms}$	1.7
Repetitive Peak Forward Surge Current (Note 4)	$I_{FRM}$	625	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	$P_D$	350	mW
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	250	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	$V_F$	—	1.0	V	$I_F = 100\text{mA}$
		—	1.25		$I_F = 200\text{mA}$
Reverse Current (Note 5)	$I_R$	—	100	nA	$V_R = 200\text{V}, T_J = 25^\circ\text{C}$
		—	100	$\mu\text{A}$	$V_R = 200\text{V}, T_J = 150^\circ\text{C}$
Total Capacitance	$C_T$	—	5.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	50	ns	$I_F = I_R = 30\text{mA}, I_{tr} = 0.1 \times I_R, R_L = 100\Omega$

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.

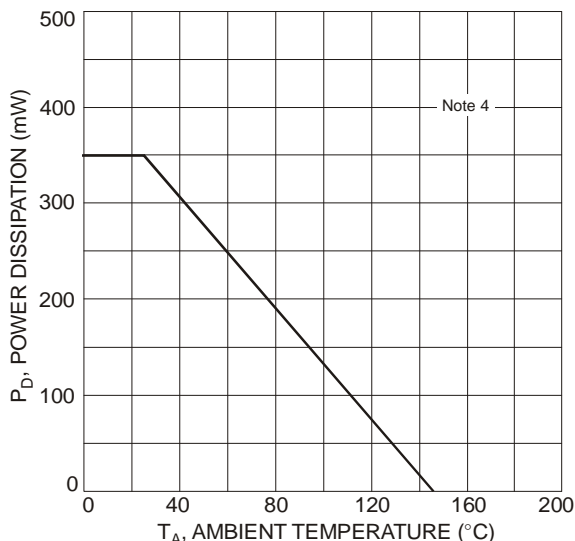


Fig. 1 Power Derating Curve, Total Package

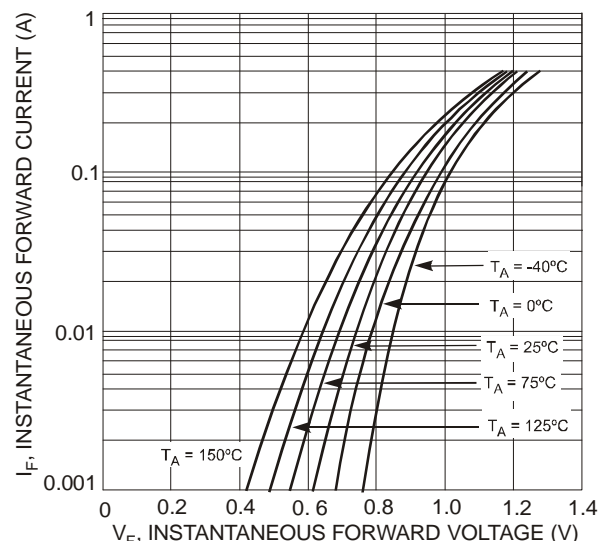


Fig. 2 Typical Forward Characteristics, Per Element

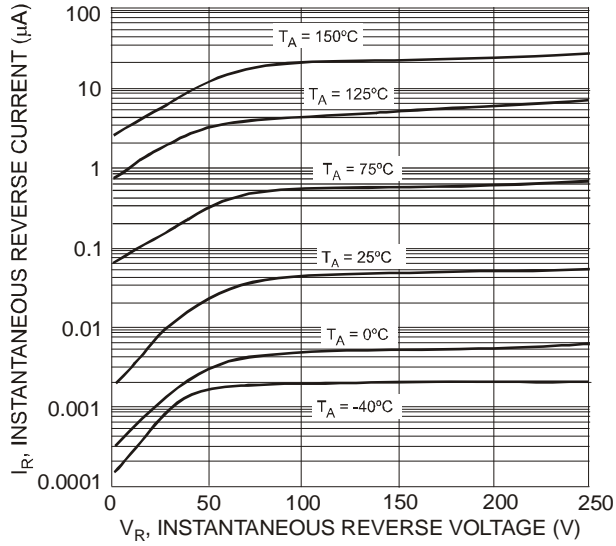


Fig. 3 Typical Reverse Characteristics, Per Element

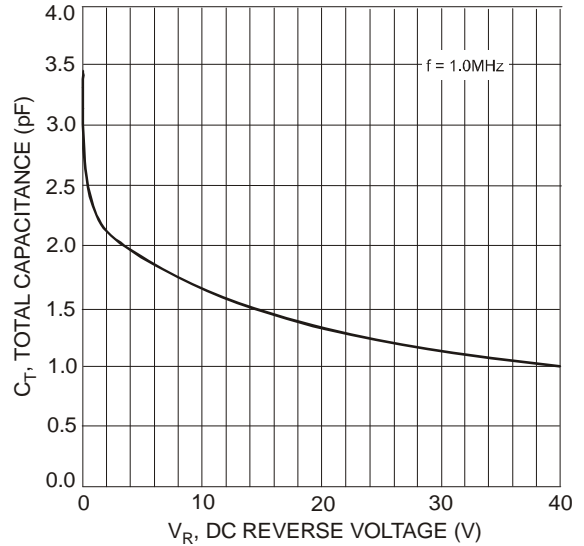
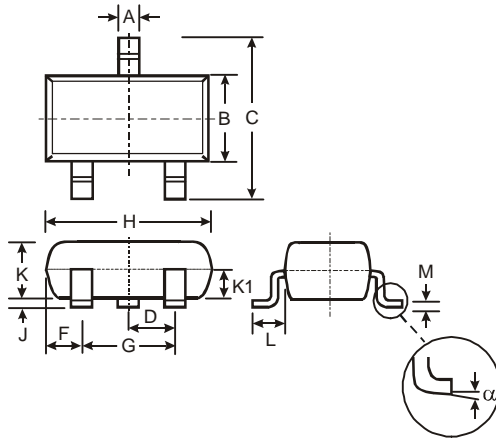


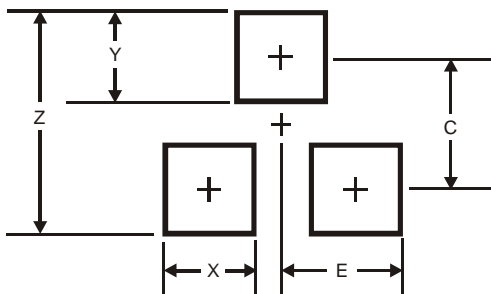
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

**Package Outline Dimensions**



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	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
$\alpha$	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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