

## Features

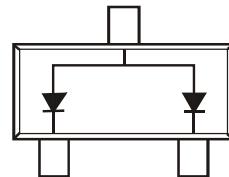
- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- Two Diode Elements Connected in a Common Anode Configuration
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 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
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approximate)



Top View


 Top View  
Internal Schematic

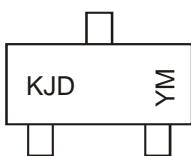
## Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
BAW56-7-F	Commercial	SOT23	3,000/Tape & Reel
BAW56-13-F	Commercial	SOT23	10,000/Tape & Reel
BAW56Q-7-F	Automotive	SOT23	3,000/Tape & Reel
BAW56Q-13-F	Automotive	SOT23	10,000/Tape & Reel

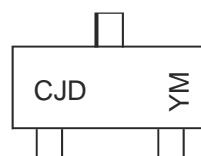
Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See <http://www.diodes.com> 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



K = SAT (Shanghai Assembly / Test site)  
 JD = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: Z = 2012)  
 M = Month (ex: 9 = September)



C = CAT (Chengdu Assembly / Test site)  
 JD = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: Z = 2012)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	1998	1999	2000	.....	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	J	K	L	.....	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
Non-Repetitive Peak Reverse Voltage	$V_{RM}$	100	V
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	75	V
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(\text{RMS})}$	53	V
Forward Continuous Current (Note 5)	$I_{FM}$	300	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$	$I_{FSM}$	2.0	A
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\text{s}$		1.0	

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	$P_D$	350	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	357	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	°C

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	75	—	V	$I_R = 2.5\mu\text{A}$
Forward Voltage	$V_F$	—	0.715 0.855 1.0 1.25	V	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$
Reverse Current (Note 6)	$I_R$	—	2.5 50 30 25	$\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$ nA	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_J = +150^\circ\text{C}$ $V_R = 25\text{V}, T_J = +150^\circ\text{C}$ $V_R = 20\text{V}$
Total Capacitance	$C_T$	—	2.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	4.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

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.

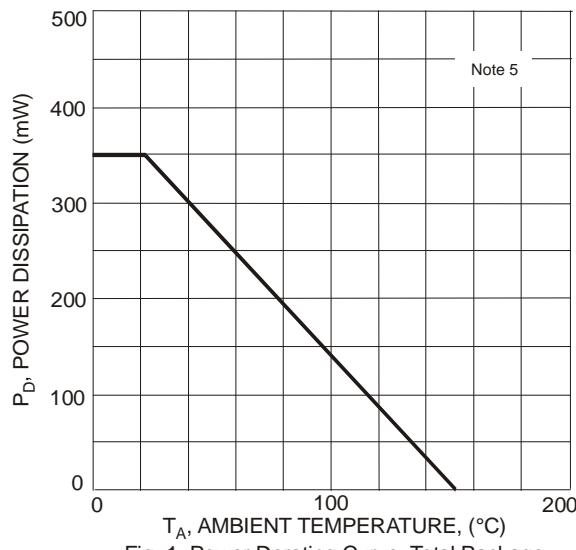


Fig. 1 Power Derating Curve, Total Package

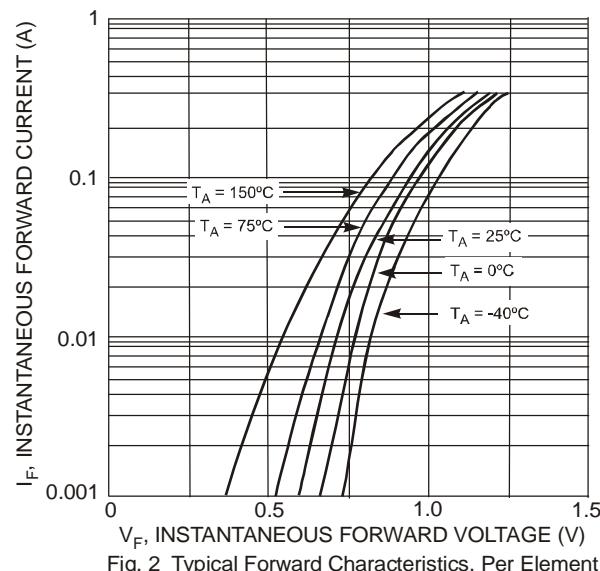


Fig. 2 Typical Forward Characteristics, Per Element

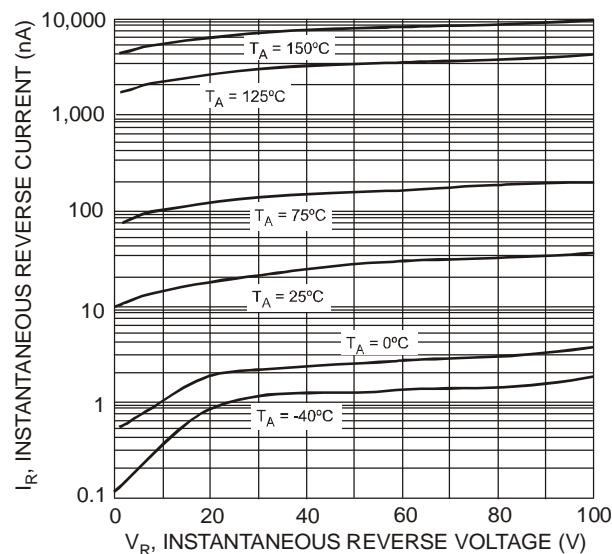


Fig. 3 Typical Reverse Characteristics, Per Element

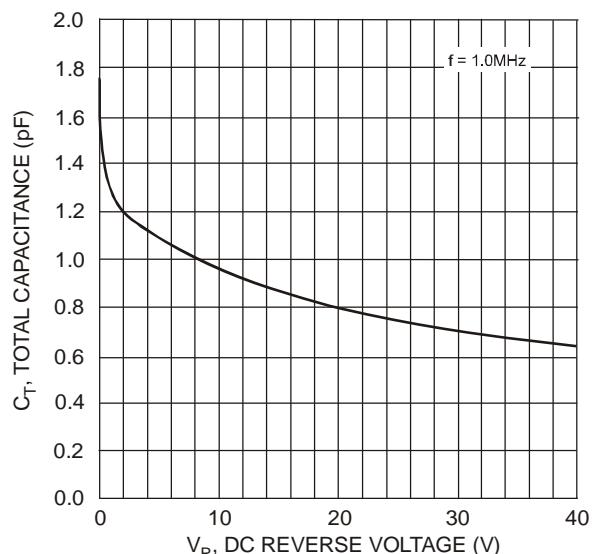
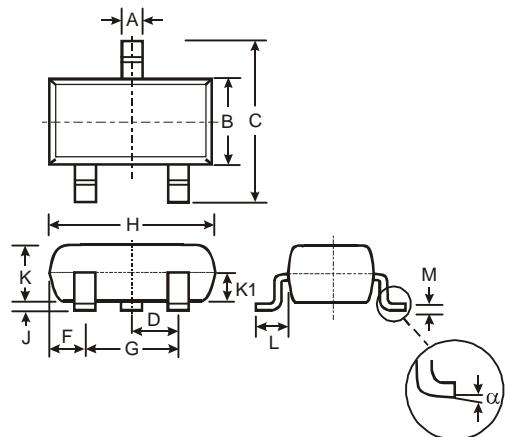


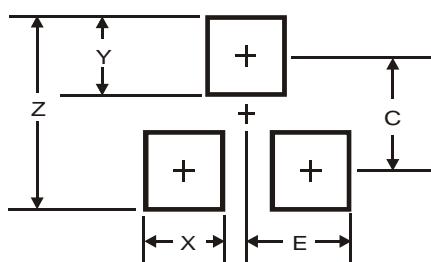
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## 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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