





#### **DUAL SURFACE MOUNT SWITCHING DIODE**

### **Features**

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- High Conductance
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device (Note 4)
- Qualified to AEC-Q101 Standards for High Reliability

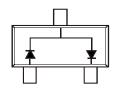
### **Mechanical Data**

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound (Note 4). 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
- Marking Information: See Page 2
- Ordering Information: See Page 2
  - Weight: 0.008 grams (approximate)

SOT-23







TOP VIEW Internal Schematic

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		$V_{RM}$	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	75	V
RMS Reverse Voltage		$V_{R(RMS)}$	53	V
Forward Continuous Current (Note 1)		I <sub>FM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I <sub>FSM</sub>	2.0 1.0	А

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_{D}$	350	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ hetaJA}$	357	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

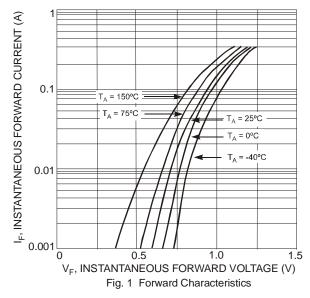
## Electrical Characteristics @TA = 25°C unless otherwise specified

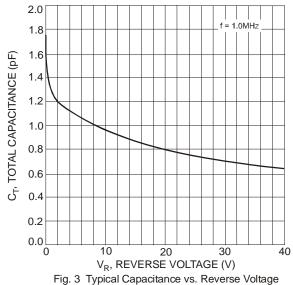
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	75	_	V	$I_R = 2.5 \mu A$
Forward Voltage	VF		0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Reverse Current (Note 2)	I <sub>R</sub>	_	2.5 50 30 25	μA μA	$V_R = 75V$ $V_R = 75V$ , $T_J = 150$ °C $V_R = 25V$ , $T_J = 150$ °C $V_R = 20V$
Total Capacitance	C <sub>T</sub>		2.0	pF	$V_R = 0, f = 1.0MHz$
Reverse Recovery Time	t <sub>rr</sub>		4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

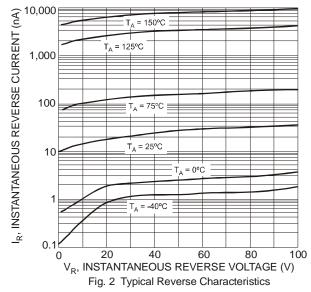
Notes:

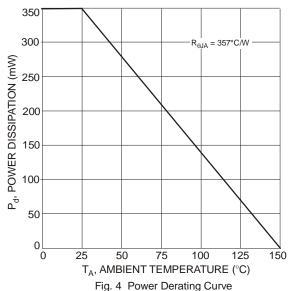
- 1. Part mounted on Polymide PC board with pad dimensions 1.13mm x 1.27mm.
- 2. Short duration pulse test used to minimize self-heating effect.
- 3. No purposefully added lead.
- Product manufactured with Data Code 9W (week 39, 2009) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 9W are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.









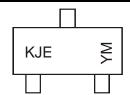


## Ordering Information (Note 5)

Part Number	Case	Packaging
BAV99-7-F	SOT-23	3,000/Tape & Reel
BAV99-13-F	SOT-23	10,000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



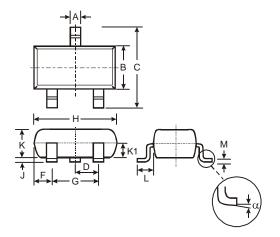
KJE = Product Type Marking Code YM = Date Code Marking Y = Year (ex: N = 2002) M = Month (ex: 9 = September)

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	М	N	Р	R	S	Т	U	V	W	Χ	Υ	Z
Month	Jan	Fel	b I	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		N	D

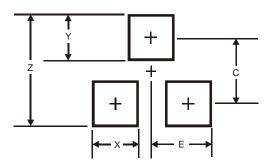


# **Package Outline Dimensions**



SOT-23						
Dim	Min	Max	Тур			
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
С	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			
Н	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			
α	0°	8°	-			
All Dimensions in mm						

## **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Υ	0.9
С	2.0
E	1.35



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