

**SURFACE MOUNT
FAST SWITCHING DIODE**

**REVERSE VOLTAGE – 250 Volts
FORWARD CURRENT – 0.2 Amperes**

FEATURES

- Fast switching speed
- Ideally suited for automatic insertion
- For general purpose switching applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

MECHANICAL DATA

- Package: SOD-123 plastic
- Package Material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.), “Halogen-free”
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Code: JS
- Weight: 11.67mg (Approximate)

SOD-123



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at +25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Continuous reverse voltage	V_R	250	V
Peak forward current	I_F	200	mA
Peak forward surge current @ $t = \leq 1\text{ms}$. Duty: 25%	I_{FM}	625	mA
Peak forward surge current @ $t = 8/20\mu\text{s}$	I_{pp}	15	A
Power dissipation @ $T_a = +25^\circ\text{C}$, Derate above +25°C (Note 4)	P_D	250	mW
Typical thermal resistance (Note 4)	R_{thJA}	500	$^\circ\text{C}/\text{W}$
Operation and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Forward voltage	$I_F = 100\text{mA}$	V_F	1000	mV
	$I_F = 200\text{mA}$		1250	
Reverse breakdown voltage	$I_{BR} = 100\mu\text{A}$	V_{BR}	250	V
Reverse leakage current	$V_R = 200\text{V}$ $V_R = 200\text{V}$ @ $T_J = +150^\circ\text{C}$	I_R	0.1	μA
			100	
Typical total capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_T	5	pF

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	Value	UNIT
Maximum reverse recovery time	$I_F = I_R = 30\text{mA}$, $R_L = 100\Omega$	t_{rr}	50	ns

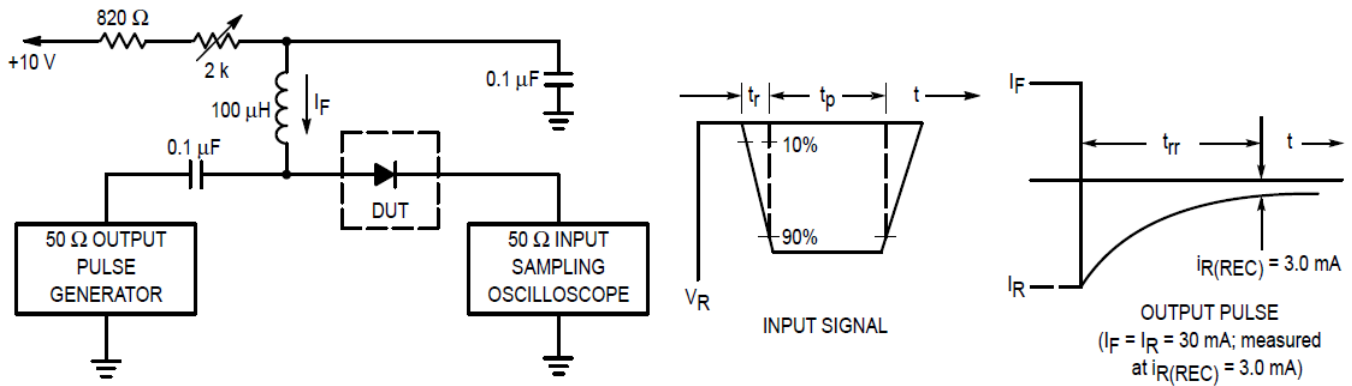
Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
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. Device mounted on FR-5 board, minimum pad.

RATING AND CHARACTERISTIC CURVES

BAV21W

FIG.1 - RECOVERY TIME EQUIVALENT TEST CIRCUIT



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 30 mA.
 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 30 mA.
 3. $t_p \gg t_{rr}$

Fig.2 - FORWARD CURRENT

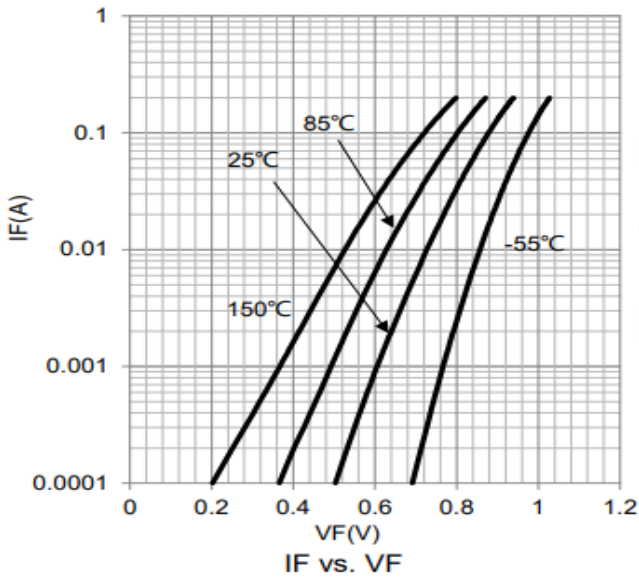


Fig. 3 - REVERSE LEAKAGE

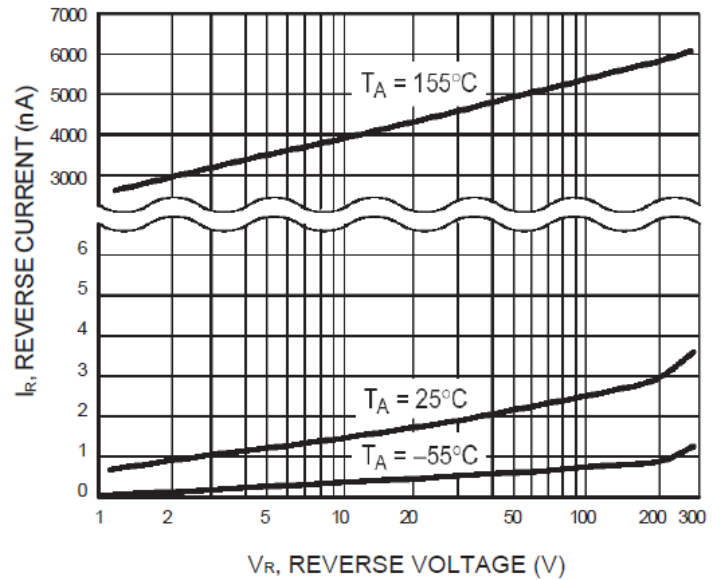
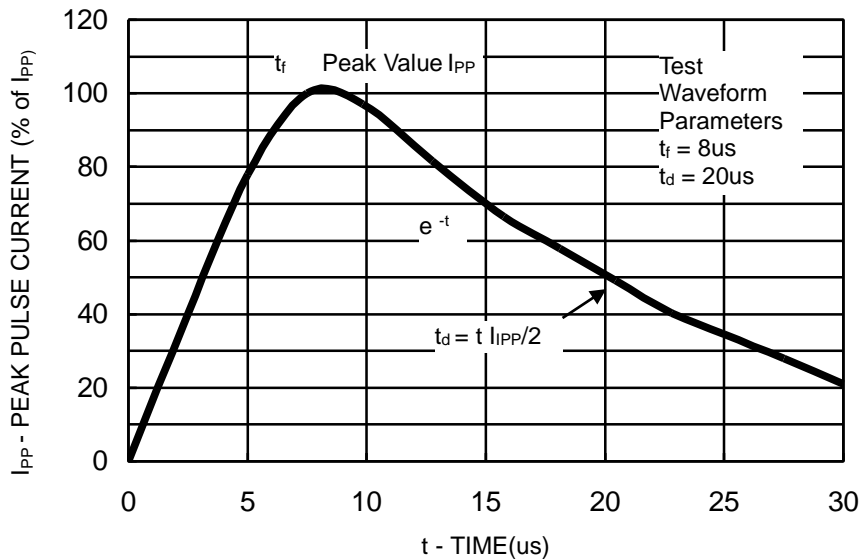
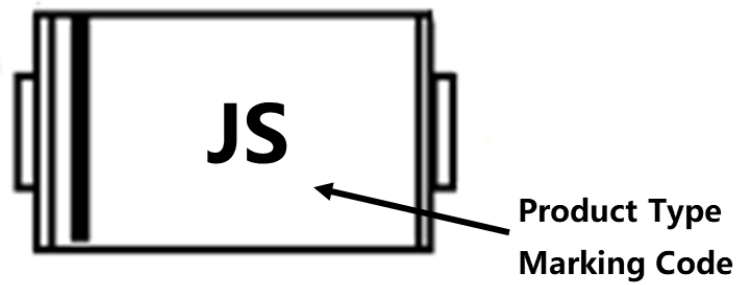


Fig.4 - PULSE WAVEFORM



Ordering Information:

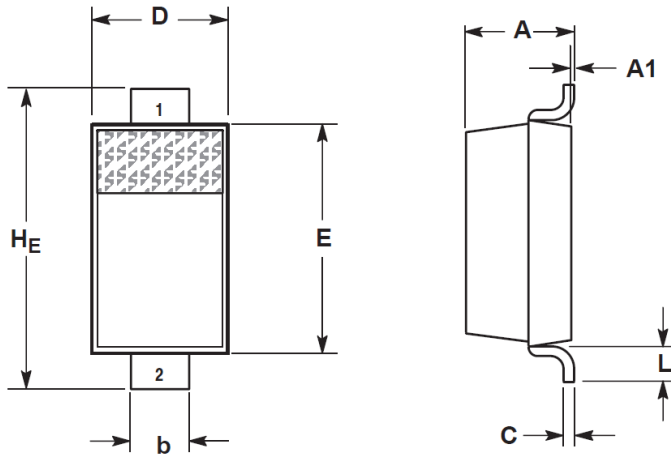
Part Number	Package	Packing	
		Qty.	Carrier
BAV21W	SOD-123	3000pcs	Tape & Reel

Marking Information:

MECHANICAL INFORMATION
BAV21W

Package Dimensions:

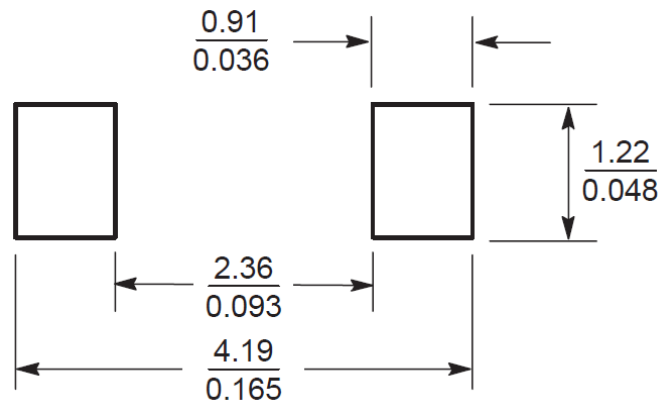
SOD-123



Dim.	INCHES		MILLIMETERS	
	Min.	Max.	Min.	Max.
A	0.037	0.053	0.94	1.35
A1	0.000	0.004	0.00	0.10
b	0.020	0.028	0.51	0.71
c	--	0.006	--	0.15
D	0.055	0.071	1.40	1.80
E	0.100	0.112	2.54	2.84
HE	0.140	0.152	3.56	3.86
L	0.010	--	0.25	--

Note:
PIN 1. Cathode
PIN 2. Anode

Soldering Pad Layout:



SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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