



SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

1N4148W THRU BAV16W

VOLTAGE RANGE 75 Volts
CURRENT 1-500 mAmpere

Features

SOD-123FL



- 1N4148W THRU BAV16W
- Surface mount package Ideally Suited for Automatic insertion
- Electrically Identical to Standard JEDEC
- High Conductance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard



Mechanical Data

- Case: JEDEC SOD-123 mold plastic
Body over glass passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.00063ounce, 0.018grams



Unipolar

Maximum Ratings and Electrical Characteristics

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER	SYMBOLS	1N4148W	BAV16W	UNIT
Marking Code	-	T4	T6	
Reverse Voltage	V_R	75		Volts
Maximum DC Blocking Voltage	V_{DC}	75		Volts
Peak Reverse Voltage	V_{RM}	100		Volts
RMS Voltage	V_{RMS}	50		Volts
Maximum Average Forward Rectified Current at $T_A = 25^\circ\text{C}$	$I_{F(AV)}$	200		mAmps
Peak Forward Surge Current	$t=0.001\text{mS}$	4.0		Amps
	$t=10\text{mS}$	1.5		
	$t=1\text{S}$	0.5		
Power Dissipation Derate Above at 25°C	P_d	250		mW
Maximum Instantaneous Forward Voltage	V_F	0.715@1.0mA 0.855@10mA 1.0@50mA 1.25@150mA	0.715@1.0mA 0.855@10mA 1.0@50mA	Volts
Maximum DC Reverse Current at rated DC blocking voltage at	I_R	0.025@20V 2.5@75V	1.0@75V	μAmps
Junction Capacitance ^(NOTE 2)	C_j	1.5	2.0	pF
Maximum Reverse Recovery Time ^(NOTE 1)	T_{RR}	8		nS
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625		$^\circ\text{C}/\text{W}$
Operating Junction Temperature	T_J	(-55 to +150)		$^\circ\text{C}$
Storage Temperature Range	T_{STG}	(-55 to +150)		$^\circ\text{C}$

Notes:

1. Reverse Recovery Test Conditions: $I_F=I_R=10\text{mA}$ $I_{rr}=0.1I_R$, $R_L=100\Omega$
2. Measured at 1.0MHz and applied reverse voltage of 0V.



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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG.1-FORWARD CHARACTERISTICS

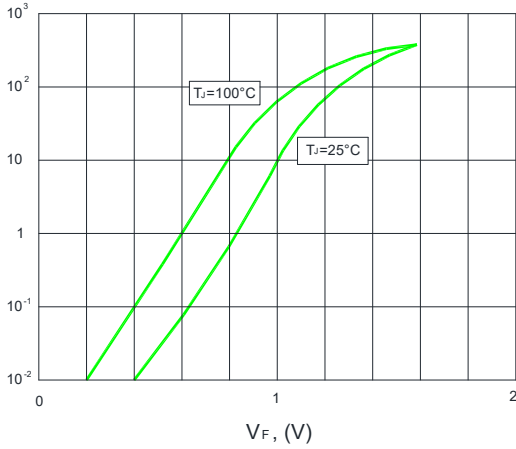


FIG.2-RELATIVE CAPACITANCE VS. REVERSE VOLTAGE

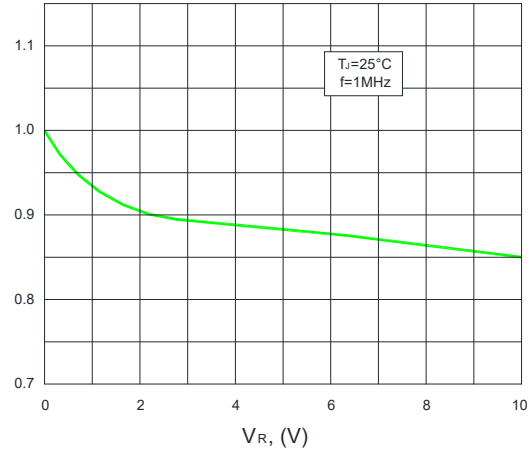


FIG.3-DYNAMIC FORWARD RESISTANCE VS. FORWARD CURRENT

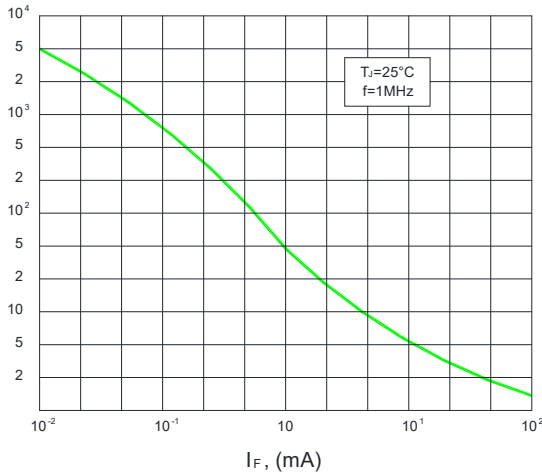


FIG.4-LEAKAGE CURRENT VS. JUNCTION TEMPERATURE

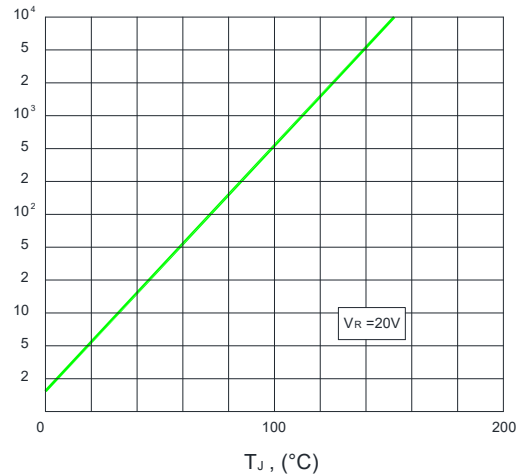


FIG.5-ADMISSIBLE POWER DISSIPATION VS. AMBIENT TEMPERATURE

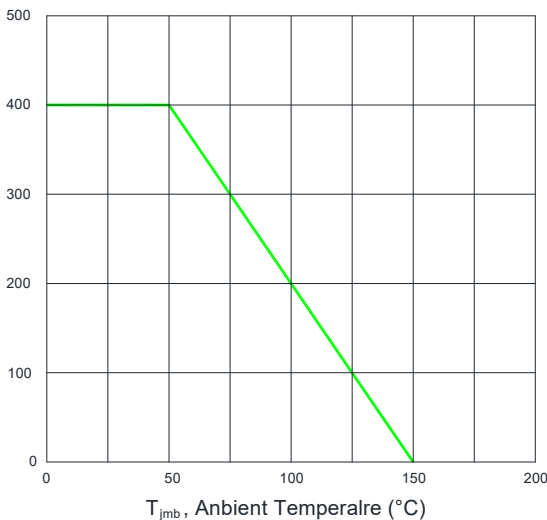
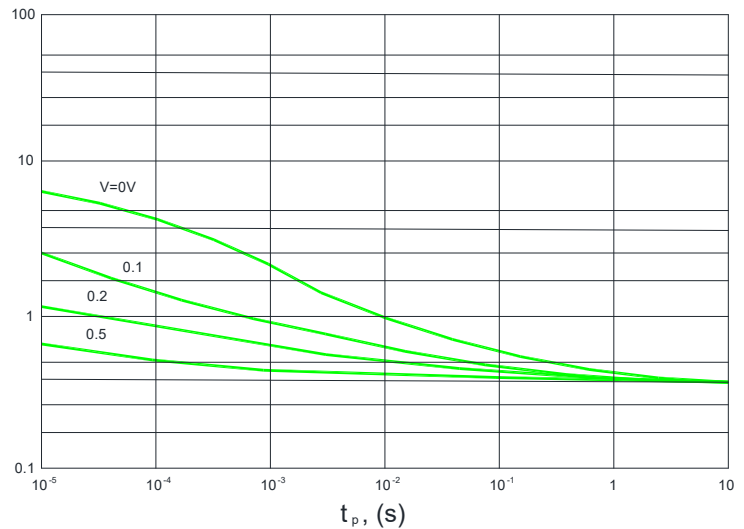


FIG.6-ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VS. PULSE DURATION

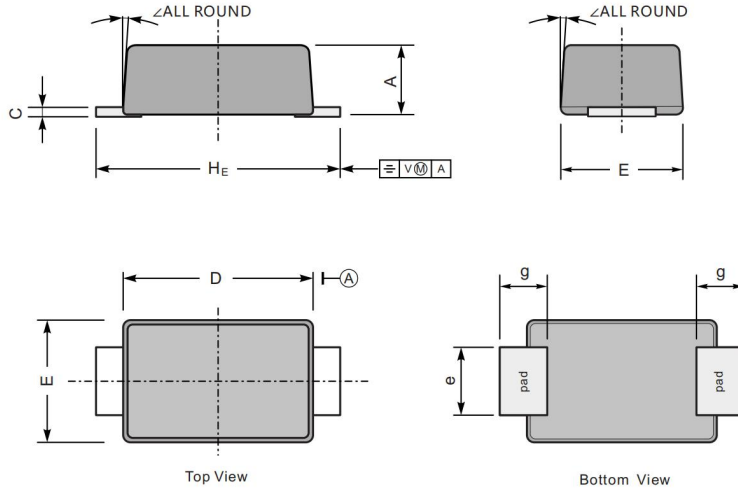




Package Outline Dimensions in inches (millimeters)

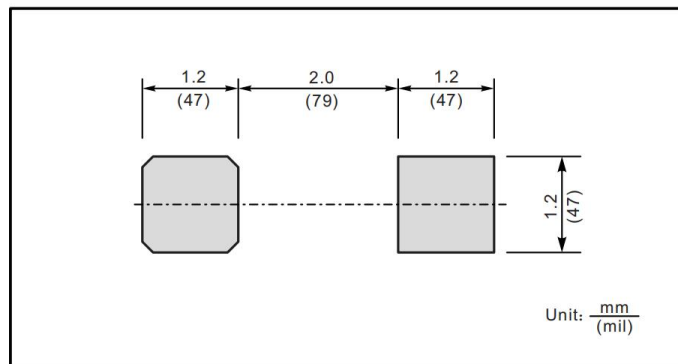
SOD-123FL

Unit: mm



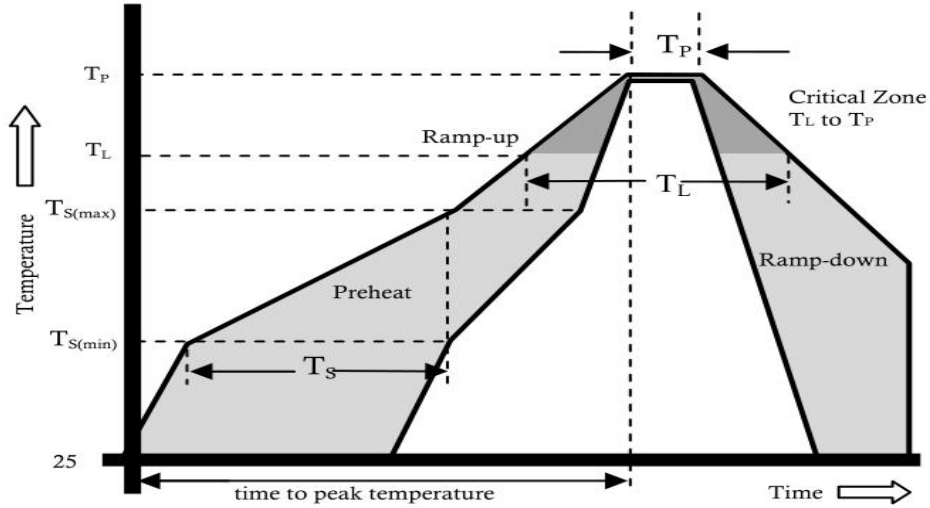
UNIT		A	C	D	E	e	g	H _E	\angle
mm	max	1.1	0.20	2.9	1.9	1.1	0.9	3.8	7°
	min	0.9	0.12	2.6	1.7	0.8	0.7	3.5	
mil	max	43	7.9	114	75	43	35	150	
	min	35	4.7	102	67	31	28	138	

The recommended mounting pad size





Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T_L)(Liquidus)	+217°C
	Temperature (T_L)	60-150 secs.
Peak Temp (T_P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_P)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T_P)		8 min. Max.
Do not exceed		+260°C



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