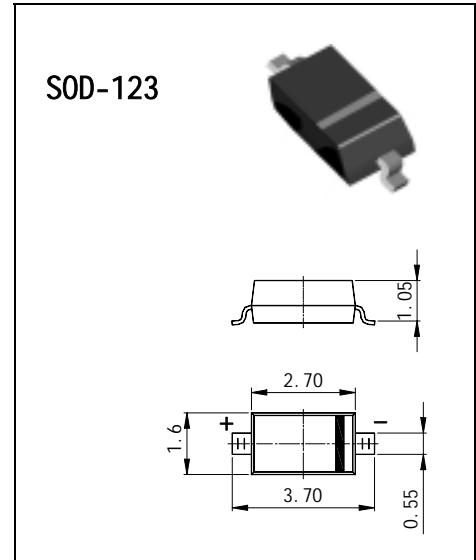




## SOD-123 Plastic-Encapsulate Diode

### Features

- Low Forward Voltage Drop
- Fast Switching Time
- Surface Mount Package Ideally Suited for Automatic Insertion



### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	BAT42W / BAT43W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current (Note 1)	$I_{FM}$	200	mA
Repetitive Peak Forward Current (Note 1) @ $t < 1.0\text{s}$	$I_{FRM}$	500	mA
Non-Repetitive Peak Forward Surge Current @ $t < 10\text{ms}$	$I_{FSM}$	4.0	A
Power Dissipation	$P_d$	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	K/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +125	$^\circ\text{C}$

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

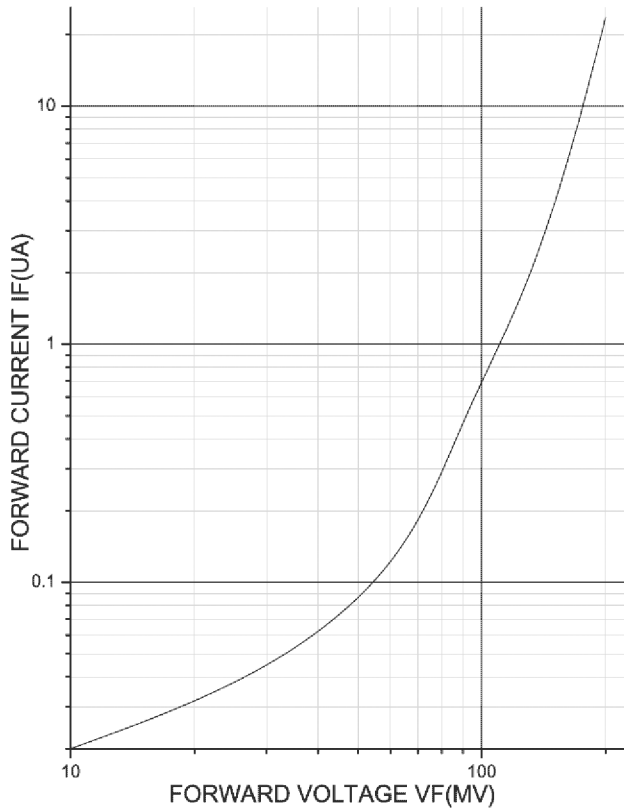
Characteristic	Symbol	Min	Max	Unit	Test Condition
Forward Voltage Drop	$V_{FM}$	—	1.0	V	$I_F = 200\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 2.0\text{mA}$ $I_F = 15\text{mA}$
Maximum Peak Reverse Current	$I_{RM}$	—	500 100	nA $\mu\text{A}$	$V_R = 25\text{V}$ $V_R = 25\text{V}, T_j = 100^\circ\text{C}$
Junction Capacitance	$C_j$	—	10	pF	$V_R = 1.0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	5.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$
Rectification Efficiency	$\eta_V$	80	—	%	$R_L = 15\Omega, C_L = 300\text{pF}$ , $f = 45\text{MHz}, V_{RF} = 2.0\text{V}$

Notes: 1. Valid provided that terminals are kept at ambient temperature.

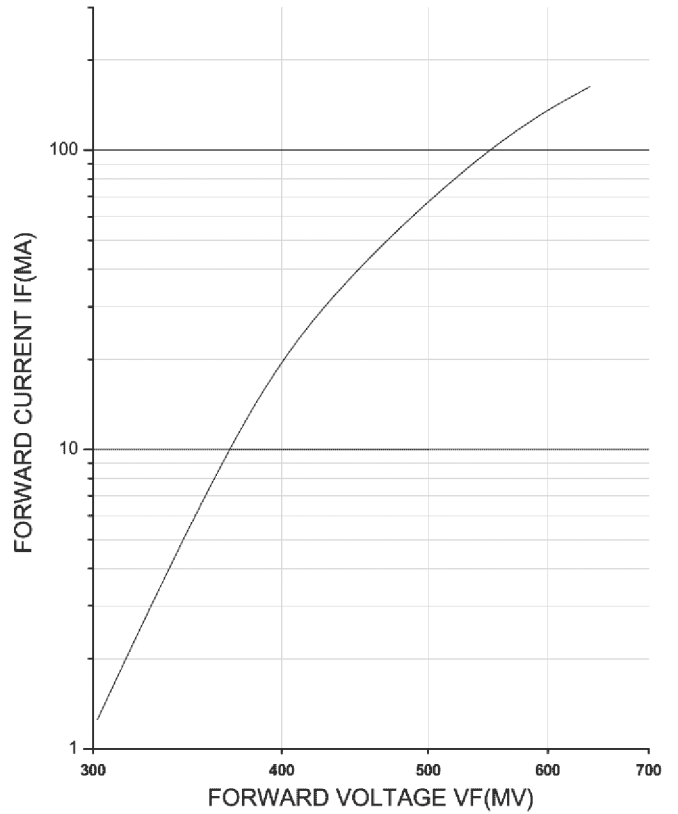
# Typital Characteristics

# BAT42W

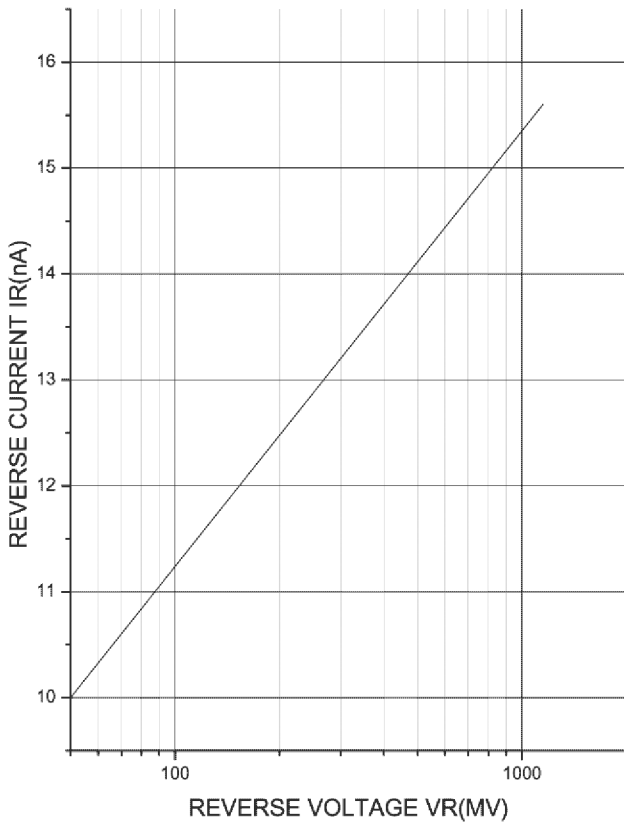
IF-VF



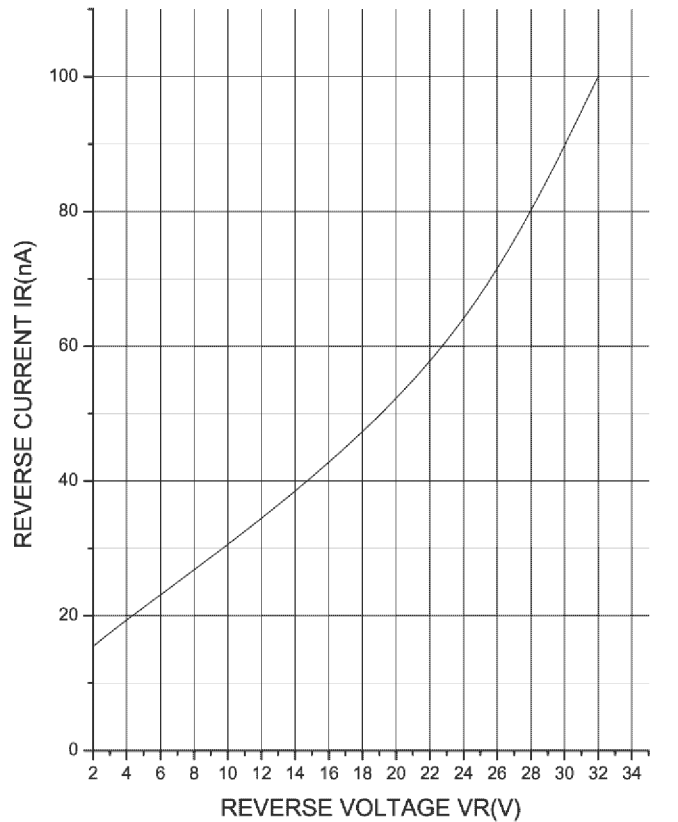
IF-VF



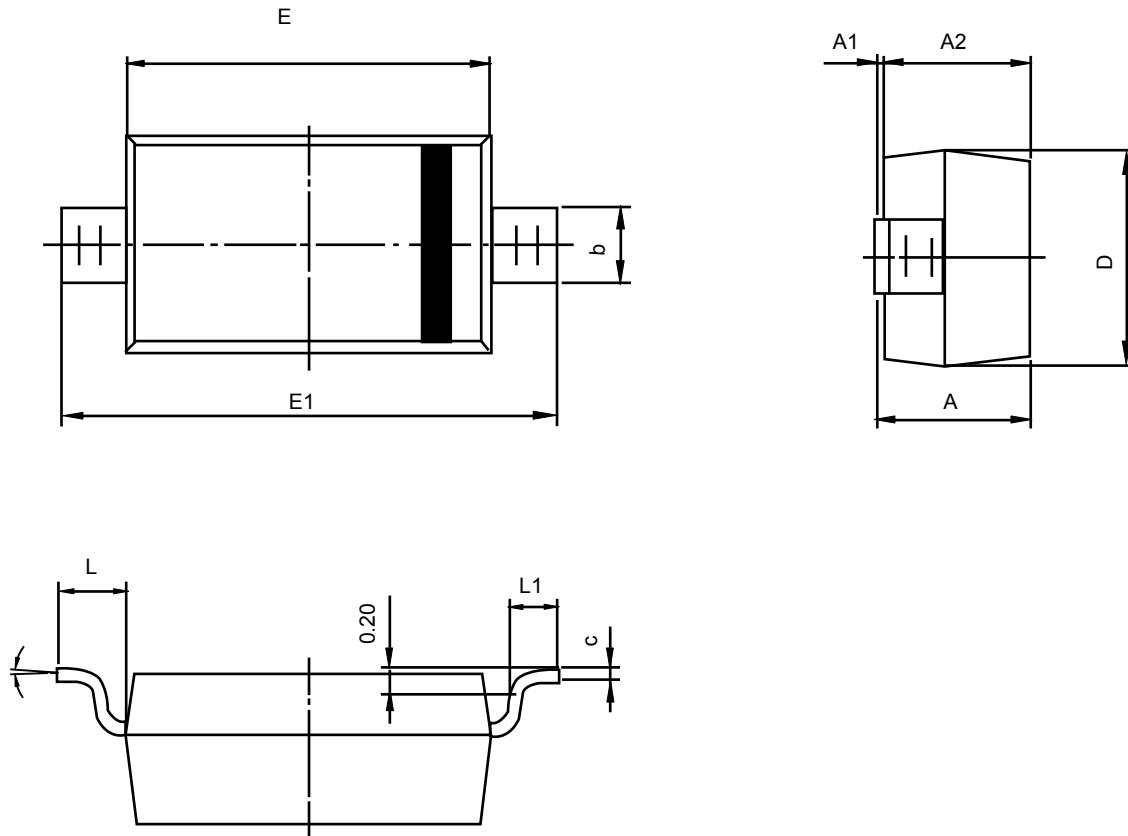
IR-VR



IR-VR



## SOD-123 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
<b>A</b>	1.050	1.250	0.041	0.049
<b>A1</b>	0.000	0.100	0.000	0.004
<b>A2</b>	1.050	1.150	0.041	0.045
<b>b</b>	0.450	0.650	0.018	0.026
<b>c</b>	0.080	0.150	0.003	0.006
<b>D</b>	1.500	1.700	0.059	0.067
<b>E</b>	2.600	2.800	0.102	0.110
<b>E1</b>	3.550	3.850	0.140	0.152
<b>L</b>	0.500REF		0.020REF	
<b>L1</b>	0.250	0.450	0.010	0.018
$\theta$	0°	8°	0°	8°