

# BAT42W

Plastic-Encapsulate Schottky Barrier Diode

ROHS

## Features

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

## Mechanical Data

- ◆ Case: SOD-123
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Polarity: Color Band Denotes Cathode End
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Device Marking: S7

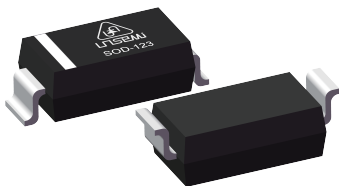
## Mechanical Characteristics

Parameter	Symbol	Value	Units
Repetitive Peak Reverse Voltage	VRRM	30	V
Reverse Voltage	VR	30	V
Repetitive Peak Forward Current	IFM	0.2	A
Non-Repetitive Peak Forward Surge Current @t=8.3ms	IFSM	4.0	A
Power Dissipation	PD	0.5	W
Thermal Resistance Junction to Ambient	RθJA	200	°C/W
Junction Temperature Range	TJ	-40~+125	°C
Storage Temperature Range	Tstg	-55~+150	°C



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SOD-123



## Functional Diagram



**Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)**

Parameter	Symbol	Test Conditions	Value		Units
			Min.	Max.	
Reverse Current	$I_R$	$V_R=25V$	-	0.5	$\mu A$
Forward Voltage	$V_F$	$I_F=10mA$	-	0.4	V
		$I_F=50mA$	-	0.65	V
		$I_F=200mA$	-	1.0	V
Capacitance Between Terminals	$C_T$	$V_R=1V, f=1MHz$	-	10	pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=10mA, I_{rr}=0.1 \times I_R, R_L=100\Omega$	-	5.0	ns

**Electrical Characteristics Curves**

Fig.1 Forward Characteristics

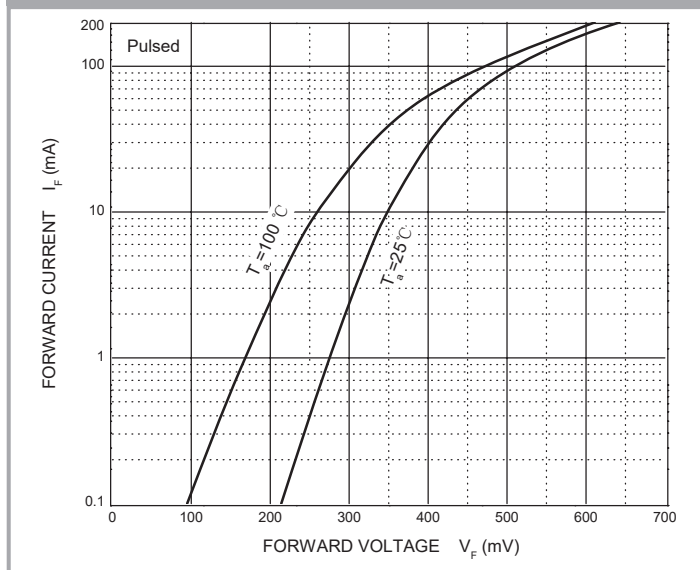
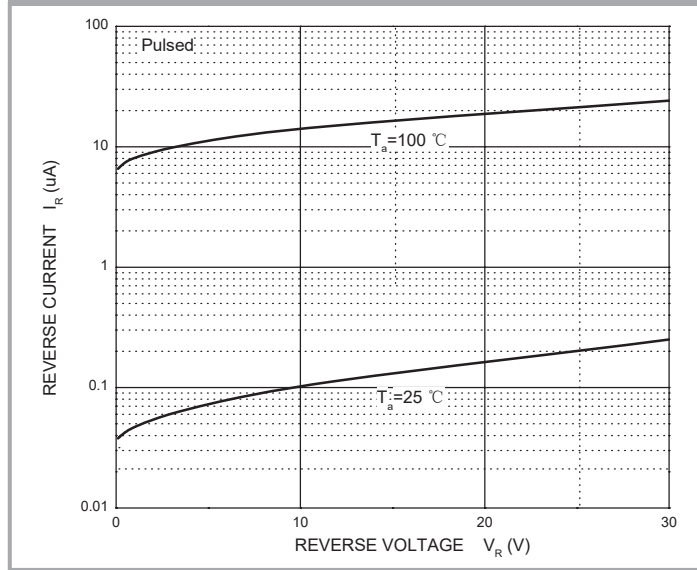


Fig. 2 Reverse Characteristics



## Electrical Characteristics Curves

Fig.3 Capacitance Characteristics

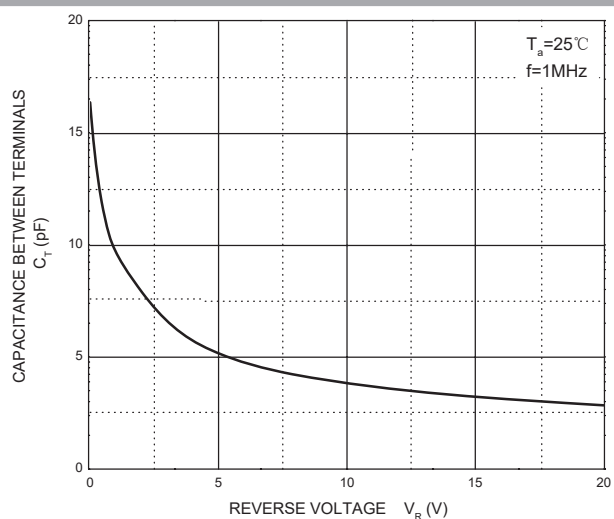
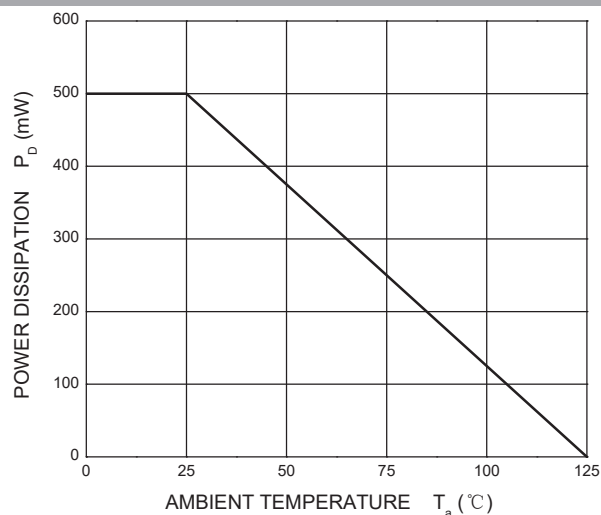
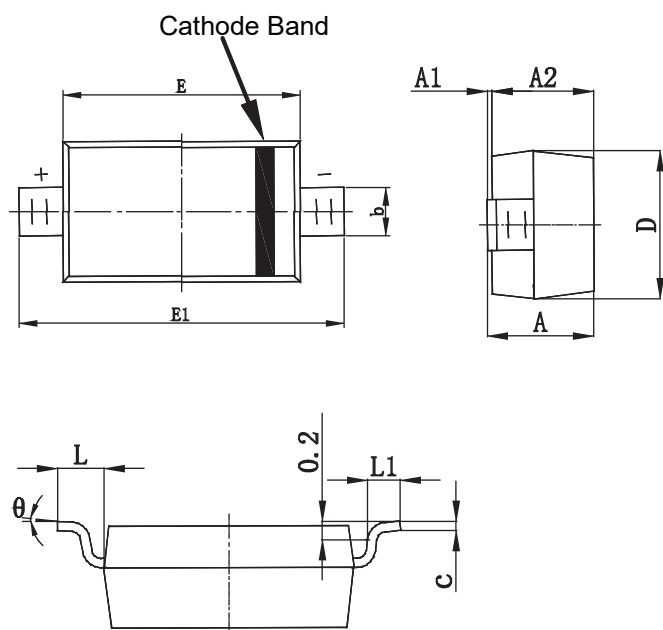


Fig. 4 Power Derating Curve



## Package Outline & Dimensions

### SOD-123



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

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