

## Surface Mount Schottky Barrier Diode

**(Pb)** Lead(Pb)-Free

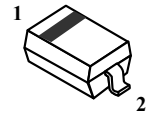
### Features:

- \* Low Forward Voltage Drop
- \* Fast Switching
- \* Ultra-Small Surface Mount Package

### Mechanical Data:

- \* Case: SOD-123, Plastic
- \* Case Material-UL Flammability Rating Classification 94V-0
- \* Leads: Solderable per MIL-STD-202, Method 208
- \* Polarity: Cathode Band
- \* Weight: 0.01 grams(approx.)

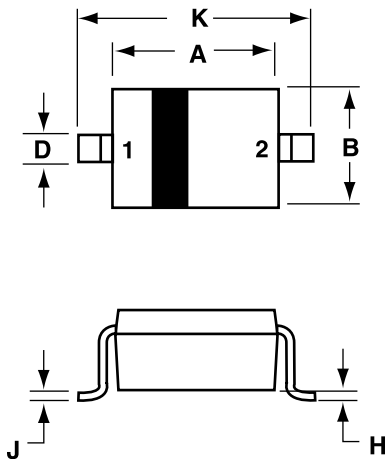
**SCHOTTKY DIODE  
200mAMPERS  
30VOLTS**



**SOD-123**

## SOD-123 Outline Dimensions

Unit:mm



SOD-123		
Dim	Min	Max
A	2.55	2.85
B	1.40	1.80
C	0.95	1.35
D	0.50	0.70
E	0.30 REF	
H	-	0.10
J	-	0.15
K	3.55	3.85

PIN 1. CATHODE  
2. ANODE

**Maximum Ratings** ( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Characteristic	Symbol	BAT42W/BAT43W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	VRRM VRWM VR	30	V
RMS Reverse Voltage	VR(RMS)	21	V
Average Rectified Output Current <sup>(1)</sup>	IFAV	200	mA
Non-Repetitive Peak Forward Surge Current @ $t < 1.0\text{ms}$	IFSM	4.0	A
Power Dissipation	Pd	200	mW
Thermal Resistance junction to Ambient Air <sup>(1)</sup>	R $\theta$ JA	500	$^{\circ}\text{C}/\text{W}$
Operating & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +125	$^{\circ}\text{C}$

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage I <sub>R</sub> =100uA	V(BR)R	30	-	V
Forward Voltage I <sub>F</sub> =200mA I <sub>F</sub> =10mA I <sub>F</sub> =50mA I <sub>F</sub> =2.0mA I <sub>F</sub> =15mA	Both Types BAT42W BAT42W BAT43W BAT43W	- - - 0.26 -	1.0 0.40 0.65 0.33 0.45	V
Reverse Current V <sub>R</sub> =25V V <sub>R</sub> =25V, T <sub>j</sub> =100 $^{\circ}\text{C}$	I <sub>R</sub>	- -	500 100	nAdc uAdc
Total Capacitance V <sub>R</sub> =1.0V, f=1.0MHz	C <sub>T</sub>	-	10	PF
Reverse Recovery Time I <sub>F</sub> =I <sub>R</sub> =10mA I <sub>rr</sub> =0.1 x I <sub>R</sub> , R <sub>L</sub> =100 $\Omega$	T <sub>rr</sub>	-	5.0	ns

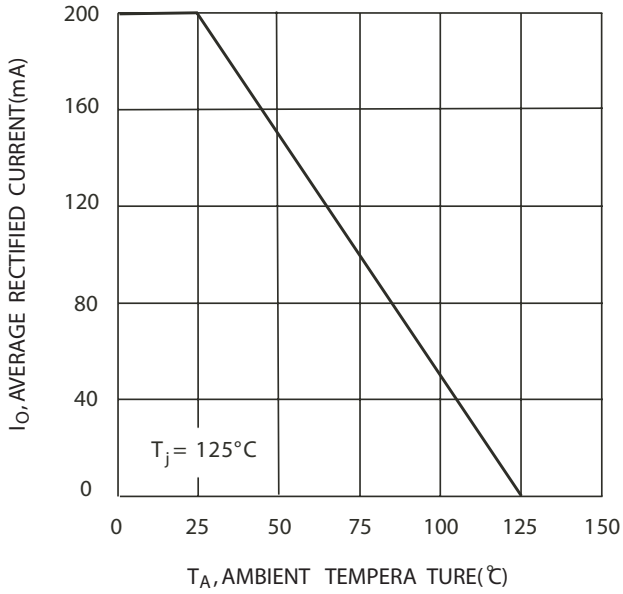
Note:

1. Parts Mounted on FR-4 PC Board with recommended pad layout.

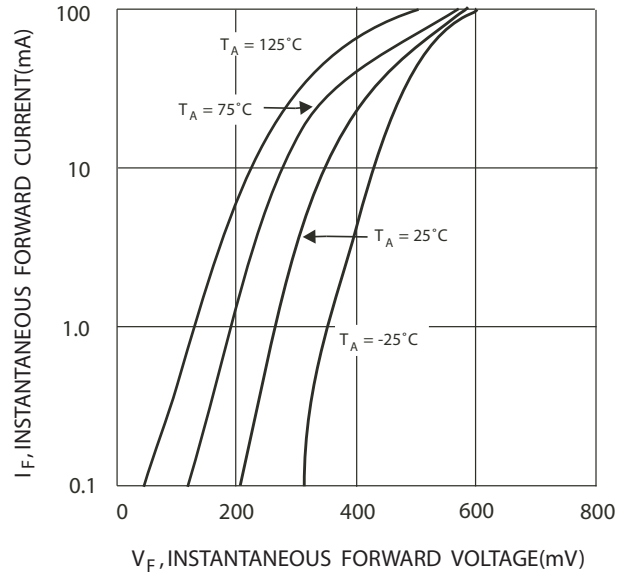
**Device Marking**

Item	Marking	Equivalent Circuit diagram
BAT42W	S7	
BAT43W	S8	

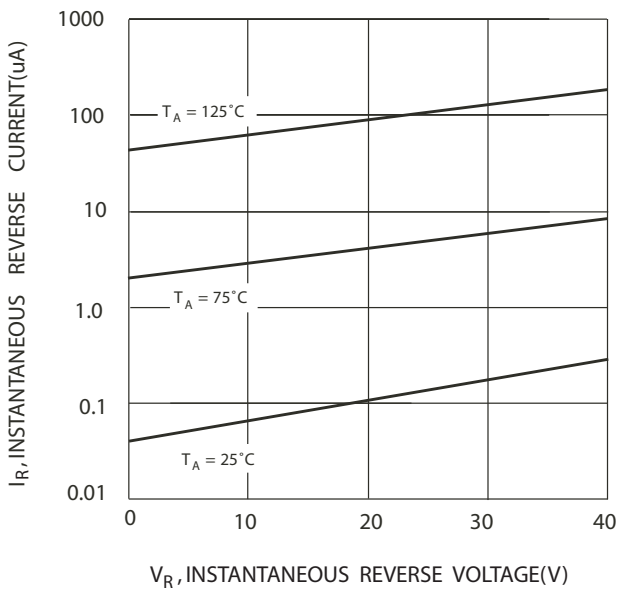
**Electrical Characteristic curves( $T_A=25^\circ\text{C}$ )**



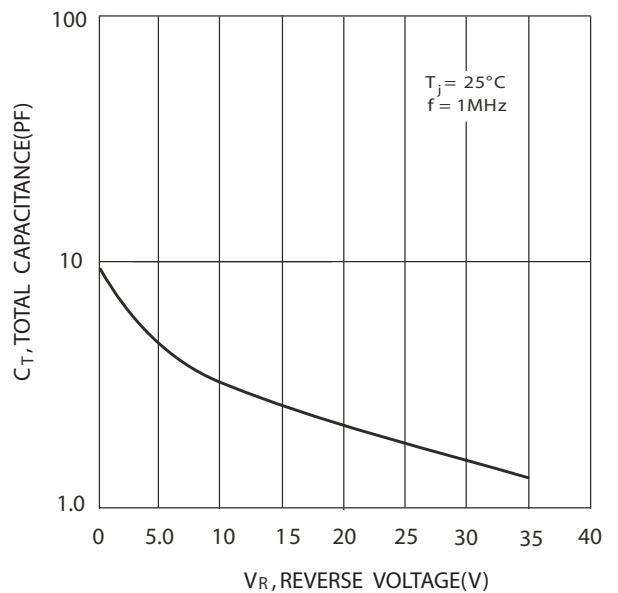
**FIG. 1 Forward Current Derating Curve**



**FIG. 2 Typical Forward Characteristics**



**FIG. 3 Typical Reverse Characteristics**



**FIG. 4 Total Capacitance vs. Reverse Voltage**