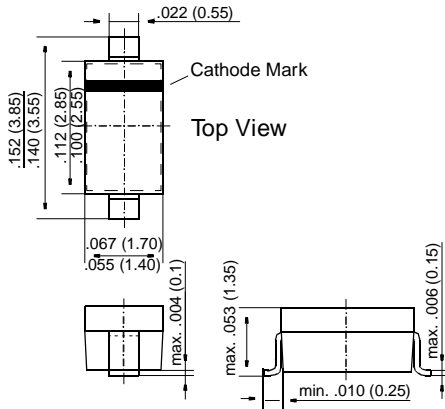


# BAT42W, BAT43W

## Schottky Diodes

### SOD-123



Dimensions in inches and (millimeters)

### FEATURES

- ◆ For general purpose applications
- ◆ These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges.
- ◆ These diodes are also available in the DO-35 case with the type designations BAT42 to BAT43 and in the MiniMELF case with type designations LL42 to LL43.



### MECHANICAL DATA

**Case:** SOD-123 Plastic Case

**Weight:** approx. 0.01 g

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	30	V
Forward Continuous Current at $T_{amb} = 25\text{ °C}$	$I_F$	200	mA
Repetitive Peak Forward Current at $t_p < 1\text{ s}$ , $\delta < 0.5$ , $T_{amb} = 25\text{ °C}$	$I_{FRM}$	500	mA
Surge Forward Current at $t_p < 10\text{ ms}$ , $T_{amb} = 25\text{ °C}$	$I_{FSM}$	4 <sup>2)</sup>	A
Power Dissipation <sup>1)</sup> at $T_{amb} = 65\text{ °C}$	$P_{tot}$	200 <sup>2)</sup>	mW
Junction Temperature	$T_j$	125	°C
Ambient Operating Temperature Range	$T_{amb}$	-55 to +125	°C
Storage Temperature Range	$T_S$	-55 to +150	°C

<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature

# BAT42W, BAT43W

## ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage tested with 100 $\mu$ A Pulses	$V_{(BR)R}$	30	–	–	V
Forward Voltage Pulse Test $t_p < 300 \mu s$ , $\delta < 2\%$ at $I_F = 200 \text{ mA}$ at $I_F = 10 \text{ mA}$ at $I_F = 50 \text{ mA}$ at $I_F = 2 \text{ mA}$ at $I_F = 15 \text{ mA}$	$V_F$ $V_F$ $V_F$ $V_F$ $V_F$ <b>BAT42W</b> <b>BAT42W</b> <b>BAT43W</b> <b>BAT43W</b>	– – – 0.26 –	– – – – –	1 0.4 0.65 0.33 0.45	V V V V V
Leakage Current Pulse Test $t_p < 300 \mu s$ , $\delta < 2\%$ at $V_R = 25 \text{ V}$ at $V_R = 25 \text{ V}$ , $T_j = 100 \text{ }^\circ\text{C}$	$I_R$ $I_R$	– –	– –	0.5 100	$\mu\text{A}$ $\mu\text{A}$
Capacitance at $V_R = 1 \text{ V}$ , $f = 1 \text{ MHz}$	$C_{tot}$	–	7	–	pF
Reverse Recovery Time from $I_F = 10 \text{ mA}$ through $I_R = 10 \text{ mA}$ to $I_R = 1 \text{ mA}$ , $R_L = 100 \Omega$	$t_{rr}$	–	–	5	ns
Detection Efficiency at $R_L = 15 \text{ K}\Omega$ , $C_L = 300 \text{ pF}$ , $f = 45 \text{ MHz}$ , $V_{RF} = 2 \text{ V}$	$\eta_v$	80	–	–	%
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	–	–	0.3 <sup>2)</sup>	K/mW
<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature					