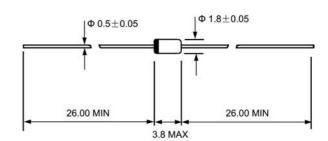


## **BAT42-BAT43**

Small Signal Schottky Diodes

**REVERSE VOLTAGE: 30 V** CURRENT: 0.2 A

# DO-35(GLASS)



Dimensions in millimeters

# **Features**

- $\Diamond$ These diodes feature very low turn-on voltage and fast guard ring against excessive voltage, such as electrostatic discharges
- 200 mW power dissipation
- These diodes are also available in the SOD-123 case with the type designations BAT42W to BAT43W and in designations LL42 to LL43

## **Mechanical Data**

Case: DO-35, glass case  $\Diamond$ 

- $\Diamond$ Polarity: Color band denotes cathode
- Weight: 0.004 ounces, 0.13 grams  $\Diamond$

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

### **ABSOLUTE MAXIMUM RATINGS**

		BAT42	BAT43	UNITS
Repetitive peak reverse voltage	$V_{RRM}$	30	)	V
Reverse breakdown voltage I <sub>R</sub> =100μ A (pulsed)	$V_{(BR)}$	30		V
Average forw ard rectified current half w ave rectification w ith resist.load  @T <sub>A</sub> =25℃ and f ≥50Hz	I <sub>AV</sub>	200	0.0	mA
Forw ard surge current @ t<10ms	$I_{FSM}$	4		Α
Pow er dissipation @ T <sub>A</sub> =65℃	$P_{tot}$	20	01)	mW
Junction temperature	$T_J$	12	25	$^{\circ}$
Storage temperature range	$T_{STG}$	-55	+150	$^{\circ}$

<sup>1)</sup>Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature.

#### **ELECTRICAL CHARACTERISTICS**

		MIN	TYP	MAX	UNITS
Forward voltage @I <sub>F</sub> =200 mA BAT42 BAT43 I <sub>F</sub> =10 mA BAT42		-	-	1	V
		-	-	1	
I <sub>F</sub> =10 MA BAT42 I <sub>F</sub> =50 MA BAT43	$V_{F}$	-	-	0.4 0.65	
I <sub>F</sub> =2 mA BAT43		_	-	0.33	
I <sub>F</sub> =15 mA BAT43		-	-	0.45	
Capacitance @ V <sub>R</sub> =1V <sub>f</sub> =1MH <sub>Z</sub>	C <sub>tot</sub>	-	7	-	pF
Reverse breakdown voltage V <sub>R</sub> =25 V V <sub>R</sub> =25 V,T <sub>J</sub> =100 °C	I <sub>R</sub>	-	-	0.5 100	μΑ
Reverse recovery time					
from I <sub>E</sub> =10mA to I <sub>R</sub> =10mA	t <sub>rr</sub>	-	-	5	ns
$I_{rr}=1$ mA, $R_L=100\Omega$ .					
Thermal resistance junction to ambient	$R_{\theta JA}$			300 <sup>1)</sup>	K/W
Rectification efficiency (NOTE2)	ην	0.80	-	-	-

<sup>1)</sup>Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature. 2)R<sub>L</sub>=15K  $C_L$ =300pF,f=45MHz,V<sub>RF</sub>=2V



# **BAT42-BAT43**

Small Signal Schottky Diodes

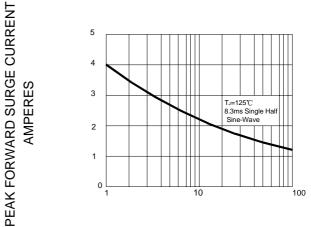
# **Ratings AND Charactieristic Curves**

## FIG.1 -FORWARD DERATING CURVE

# 

AMBIENT TEMPERATURE, ℃

# FIG.2 -PEAK FORWARD SURGE CURRENT



NUMBER OF CYCLES AT 60 Hz

## FIG.3-TYPICAL FORWARD CHARACTERISTIC

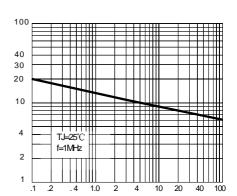
# 1000 — TJ=25°C — Pulse Width=300µS — 100 —

INSTANTANEOUS FORWARD CURRENT

m AMPERES

INSTANTANEOUS FORWARD VOLTAGE, VOLTS

## FIG.4-PEAK JUNCTION CAPACITANCE



JUNCTION CAPACITANCE, pF

REVERSE VOLTAGE, VOLTS