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June 2015

# **BAT54XV2 Schottky Barrier Diode**

#### **Features**

- Low Forward Voltage Drop
- Flat Lead, Surface Mount Device at 0.60mm Height
- Extremely Small Outline Plastic Package SOD523F
- Moisture Level Sensitivity 1
- · Pb-free Version and RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Green Mold Compound



SOD-523F Band Indicates Cathode BAT54XV2 Marking: 5B

## **Ordering Information**

Part Number	Top Mark	Package	Packing Method
BAT54XV2	5B	SOD-523F 2L	Tape and Reel

## **Absolute Maximum Ratings**

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^{\circ}\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
V <sub>RRM</sub>	Maximum Repetitive Reverse Voltage	30	V
$V_{R}$	Maximum DC Blocking Voltage	30	V
I <sub>F(AV)</sub>	Average Rectified Forward Current	200	mA
I <sub>FSM</sub>	Peak Forward Surge Current (Square Wave at pw = 300 μsec)	4	Α
T <sub>J</sub>	Operating Junction Temperature	+125	°C
T <sub>STG</sub>	Storage Temperature Range	-65 to +125	°C

## **Thermal Characteristics**

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Value	Unit
$P_{D}$	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient <sup>(1)</sup>	500	°C/W

#### Note:

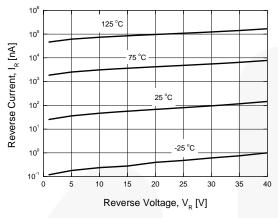
1. Device mounted on FR-4 PCB minimum land pad.

#### **Electrical Characteristics**

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV <sub>R</sub>	Breakdown Voltage	I <sub>R</sub> = 10 μA	30		V
I <sub>R</sub>	Reverse Leakage Current	V <sub>R</sub> = 25 V		2	μΑ
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 0.1 mA		0.24	V
		I <sub>F</sub> = 1 mA		0.32	
		I <sub>F</sub> = 10 mA	1	0.40	
		I <sub>F</sub> = 30 mA		0.50	
		I <sub>F</sub> = 100 mA		0.80	
T <sub>RR</sub>	Reverse Recovery Time	$I_F = I_R = 10 \text{ mA}, R_L = 100 \Omega,$ $I_{RR} = 1 \text{ mA}$		5	nS
С	Capacitance	V <sub>R</sub> = 1 V, f = 1 MHz		10	pF

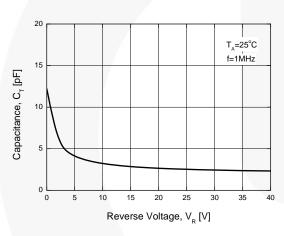
## **Typical Performance Characteristics**



100 102 125 °C 25 °C 101 100 100 200 300 400 500 600 700 800 Forward Voltage, V<sub>F</sub> [mV]

Figure 1. Reverse Current vs. Reverse Voltage

Figure 2. Forward Voltage vs. Forward Current



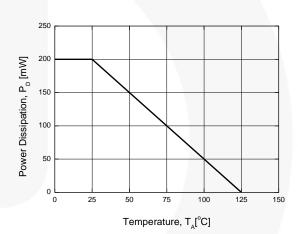
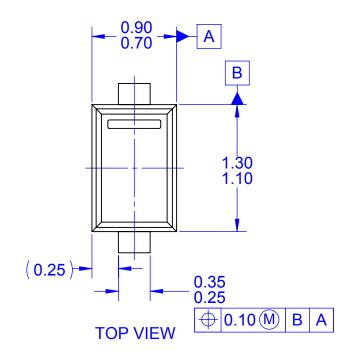
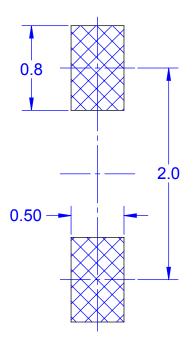


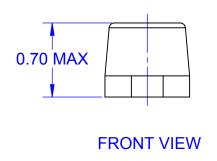
Figure 3. Total Capacitance

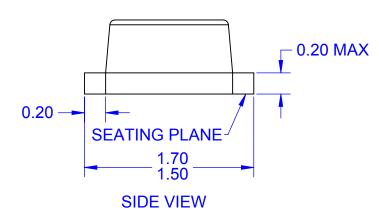
Figure 4. Power Derating





### LAND PATTERN RECOMMENDATION





#### **NOTES:**

- A. CONFORMS TO JEITA SC-79
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DRAWING CONFORMS TO ASME Y14.5M-2009 D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS
- E. LAND PATTERN RECOMMENDATION IS BASED ON
- IPC7351A STANDARD SOD1609X65M F. DRAWING FILENAME: MKT-SOD523F1rev2



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