30V 200mA Schottky Diode – BAT54

Rev 1.1
13/07/23

Small-signal ultra-fast switching schottky diode in bare die form

Features:

- 5 nanosecond max switching speed
- Low forward voltage drop
- 200mA current rating
- Guard-Ring for over-voltage protection
- High reliability tested grades & matched characteristic options.

Ordering Information

The following part suffixes apply:

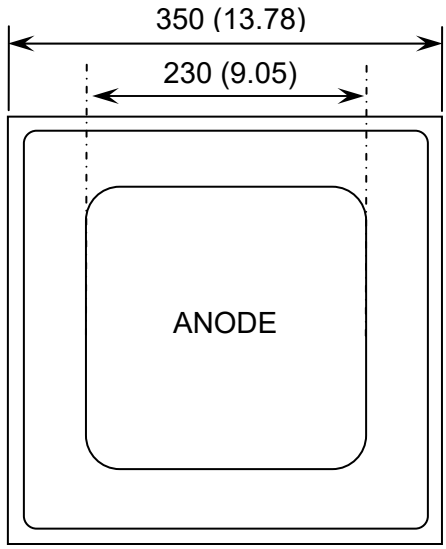
- No suffix - MIL-STD-750 /2073 Visual Inspection
- "**H**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class H LAT
- "**K**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class K LAT

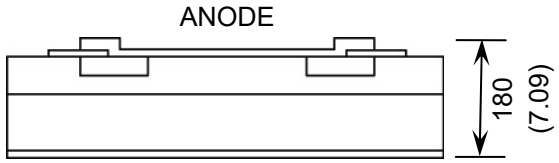
LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

www.siliconsupplies.com\quality\bare-die-lot-qualification

Die Dimensions in µm (mils)





CHIP BACKSIDE IS CATHODE

Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- Die Thickness <> 180µm(7 Mils) – On request
- With additional electrical selection – On request

Mechanical Specification

Die Size (with scribe line)	350 x 350 13.78 x 13.781	µm mils
Anode Pad Size	230 x 230 9.05 x 9.05	µm mils
Die Thickness	180 (±15) 7.09 (±0.59)	µm mils
Top Metal Composition	Al	
Back Metal Composition	AuAs	

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Absolute Maximum Ratings[1] T_J = 25°C unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
DC Blocking Voltage	V_R	30	V
DC Forward Current	I_F	200	mA
Non-repetitive Peak forward surge current[2]	I_{FSM}	600	mA
Power Dissipation	P_D	290	mW
Operating Junction temperature	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-65 to 200	°C

Electrical Characteristics T_J = 25°C unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage[3]	V_{BR}	I_R = 10μA	30	-	-	V
Forward Voltage[3]	V_F	I_F = 0.1mA	-	-	0.24	V
		I_F = 1mA	-	-	0.32	
		I_F = 10mA	-	-	0.40	
		I_F = 30mA	-	-	0.50	
		I_F = 100mA	-	-	0.80	
Reverse Leakage[3]	I_R	V_R = 25V	-	-	2	μA
Total Capacitance	C_T	V_R = 1V, f = 1MHz	-	-	10	pF
Reverse Recovery Time	t_{rr}	I_F = I_R = 10mA, I_{RR} = 1.0mA, R_L = 100Ω	-	-	5	ns

1. Operation above the absolute maximum rating may cause device failure. Operation at the absolute maximum ratings, for extended periods, may reduce device reliability. **2.** Pulse Width = 1 second. **3.** Pulse test; tp≤ 300 μs

Typical Characteristics T_J = 25°C unless otherwise stated

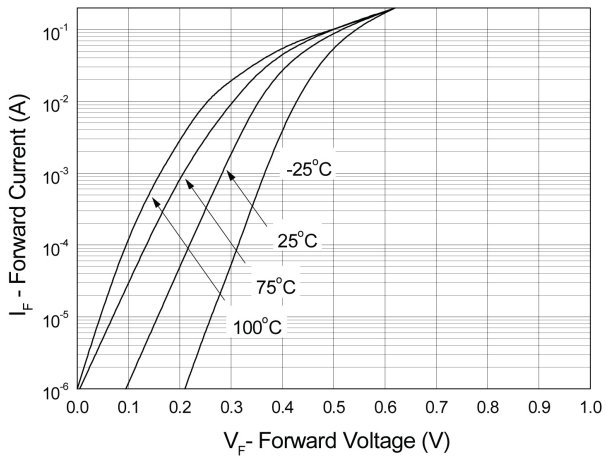

FIGURE 1. Forward Voltage Characteristics

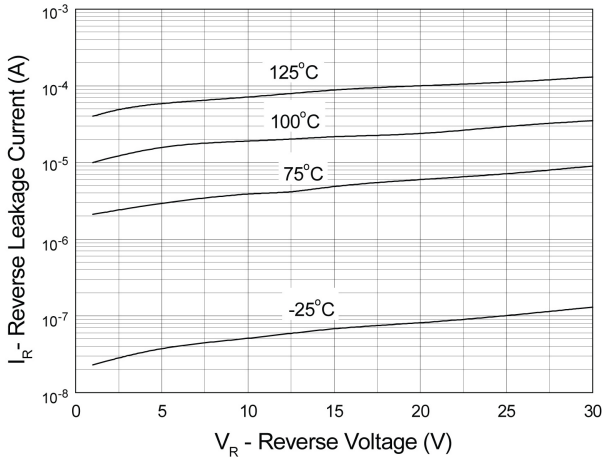

FIGURE 2. Reverse Current Versus Reverse Voltage

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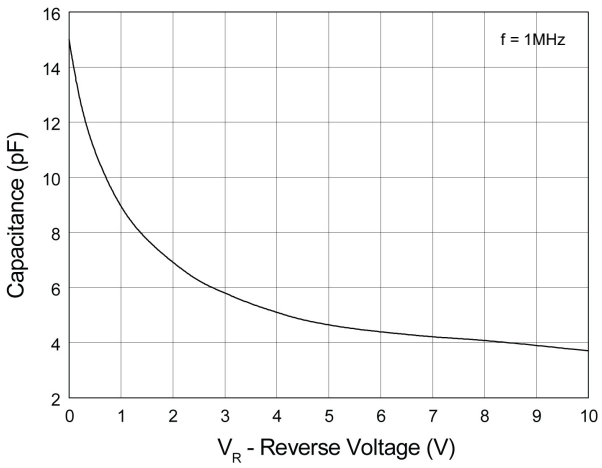

FIGURE 3. Junction Capacitance Versus Reverse Voltage