



30V 200mA Schottky Diode – BAT54

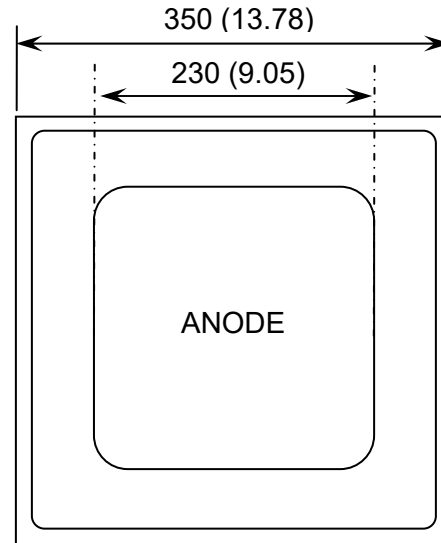
Rev 1.1
13/07/23

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.

Die Dimensions in μm (mils)



Ordering Information

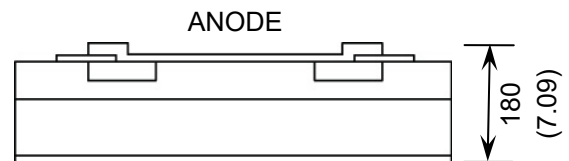
The following part suffixes apply:

- 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



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 \leftrightarrow 180 μm (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 Ratings¹ $T_J = 25^\circ\text{C}$ 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	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to 200	$^\circ\text{C}$

Electrical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage ³	V_{BR}	$I_R = 10\mu\text{A}$	30	-	-	V
Forward Voltage ³	V_F	$I_F = 0.1\text{mA}$	-	-	0.24	V
		$I_F = 1\text{mA}$	-	-	0.32	
		$I_F = 10\text{mA}$	-	-	0.40	
		$I_F = 30\text{mA}$	-	-	0.50	
		$I_F = 100\text{mA}$	-	-	0.80	
Reverse Leakage ³	I_R	$V_R = 25\text{V}$	-	-	2	μA
Total Capacitance	C_T	$V_R = 1\text{V}, f = 1\text{MHz}$	-	-	10	pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 10\text{mA}, I_{RR} = 1.0\text{mA}, R_L = 100\Omega$	-	-	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; $t_p \leq 300\mu\text{s}$

Typical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

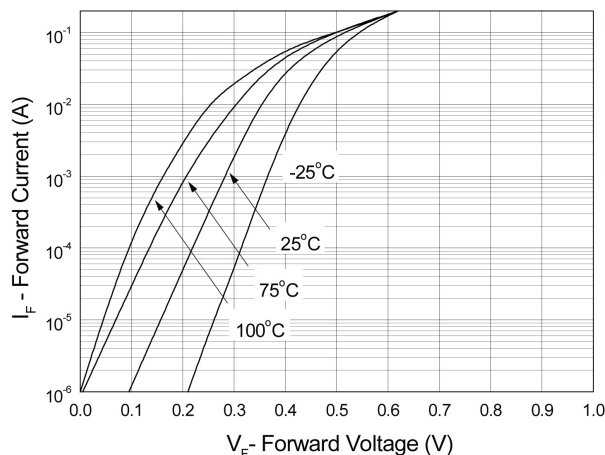


FIGURE 1. Forward Voltage Characteristics

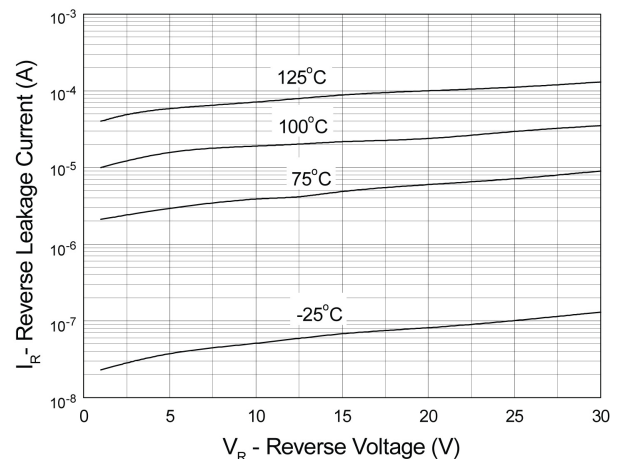


FIGURE 2. Reverse Current Versus Reverse Voltage





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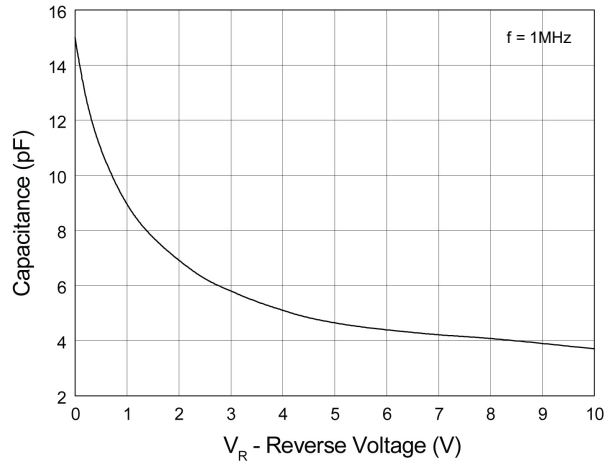


FIGURE 3. Junction Capacitance Versus Reverse Voltage

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