100V 0.5A Schottky Diode – SiS100SA5V

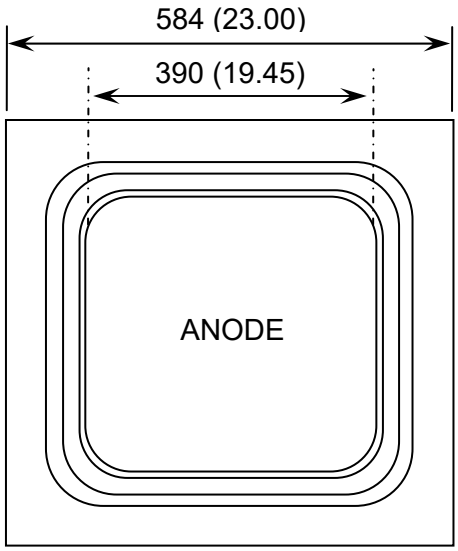
Rev 1.0
17/11/21

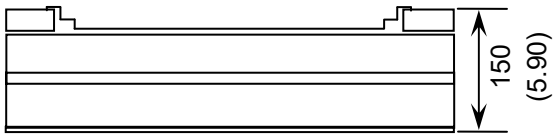
Small-signal V_F optimised schottky diode in bare die form

Features:

- Low forward voltage
- Low leakage current
- 100V breakdown voltage
- 0.5A forward current specified, high surge current
- Guard-ring for over-voltage protection

Die Dimensions in µm (mils)





CHIP BACKSIDE IS CATHODE

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

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 <> 150µm(6 Mils) – On request
- With additional electrical selection – On request

Mechanical Specification

Die Size (with scribe line)	584 x 584 23 x 23	µm mils
Anode Pad Size	390 x 390 15.35 x 15.35	µm mils
Die Thickness	150 (±20) 5.90 (±0.79)	µm mils
Top Metal Composition	TiW/Al 0.15/3µm	
Back Metal Composition	TiNi/Ag/Sn 0.2/0.8/1.4µm	

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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}	100	V
DC Blocking Voltage	V_R	100	V
DC Forward Current	I_F	500	mA
Non-repetitive Peak forward surge current[2]	I_{FSM}	5.5	A
Typical Thermal Resistance[3]	$R_{TH\ (J-A)}$	100	°C/W
Operating Junction temperature	T_J	-65 to 150	°C
Storage Temperature Range	T_{STG}	-65 to 200	°C

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**. 8.3ms single half sine-wave. **3**. Assembled in SOD-123 mounted on FR4 PCB single sided copper with 100cm^2 copper pad.

Electrical Characteristics T_J = 25°C unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage[4]	V_{BR}	I_R = 190µA	100	-	-	V
Forward Voltage[3]	V_F	I_F = 10mA	-	0.45	-	V
		I_F = 100mA	-	0.59	-	
		I_F = 250mA	-	0.70	-	
		I_F = 500mA	-	0.79	0.82	
		I_F = 10mA, T_J = 125°C	-	0.31	-	
		I_F = 100mA, T_J = 125°C	-	0.48	-	
		I_F = 250mA, T_J = 125°C	-	0.57	-	
		I_F = 500mA, T_J = 125°C	-	0.64	-	
Reverse Leakage[3]	I_R	V_R = 50V	-	5	-	nA
		V_R = 80V	-	15	-	
		V_R = 100V	-	0.1	0.8	µA
		V_R = 100V, T_J = 125°C	-	40	-	
Junction Capacitance	C_J	V_R = 4V, f = 1MHz	-	21	-	pF

4. Pulse test; tp ≤ 300 µs

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Typical Characteristics T_J = 25°C unless otherwise stated

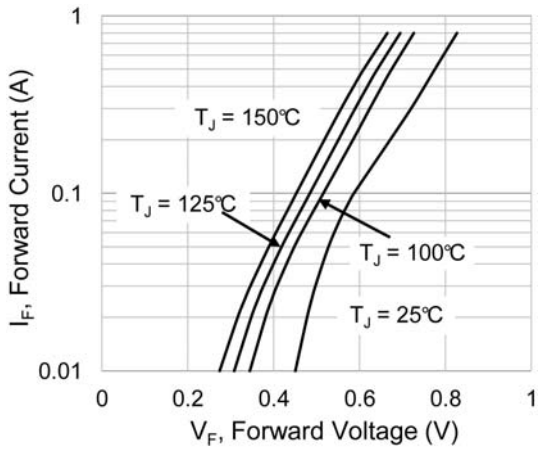

FIGURE 1. Forward Voltage Characteristics

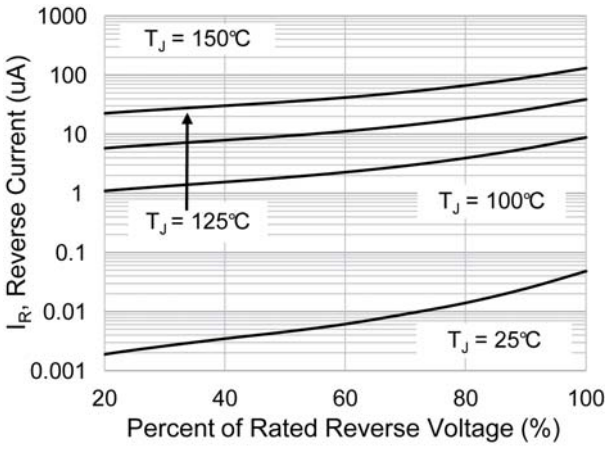

FIGURE 2. Reverse Current Versus Reverse Voltage

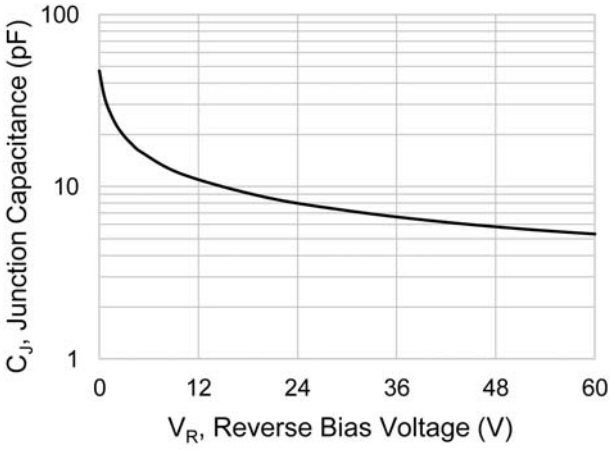

FIGURE 3. Junction Capacitance Versus Reverse Voltage