



# 100V 0.5A Schottky Diode – SiS100SA5V

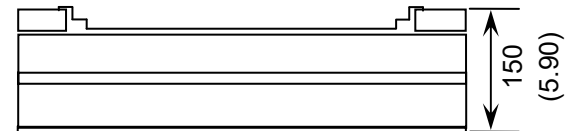
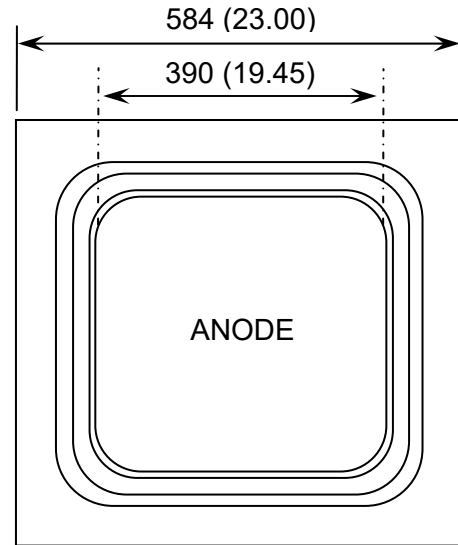
Rev 1.0  
17/11/21

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 $\mu\text{m}$ (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](http://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  $\leftrightarrow$  150 $\mu\text{m}$ (6 Mils) – On request
- With additional electrical selection – On request

## Mechanical Specification

Die Size (with scribe line)	584 x 584 23 x 23	$\mu\text{m}$ mils
Anode Pad Size	390 x 390 15.35 x 15.35	$\mu\text{m}$ mils
Die Thickness	150 ( $\pm$ 20) 5.90 ( $\pm$ 0.79)	$\mu\text{m}$ mils
Top Metal Composition	TiW/Al 0.15/3 $\mu\text{m}$	
Back Metal Composition	TiNi/Ag/Sn 0.2/0.8/1.4 $\mu\text{m}$	





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## Absolute Maximum Ratings<sup>1</sup> $T_J = 25^\circ\text{C}$ 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 <sup>2</sup>	$I_{FSM}$	5.5	A
Typical Thermal Resistance <sup>3</sup>	$R_{TH (J-A)}$	100	$^\circ\text{C/W}$
Operating Junction temperature	$T_J$	-65 to 150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to 200	$^\circ\text{C}$

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<sup>2</sup> copper pad.

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

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

4. Pulse test;  $t_p \leq 300 \mu\text{s}$





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

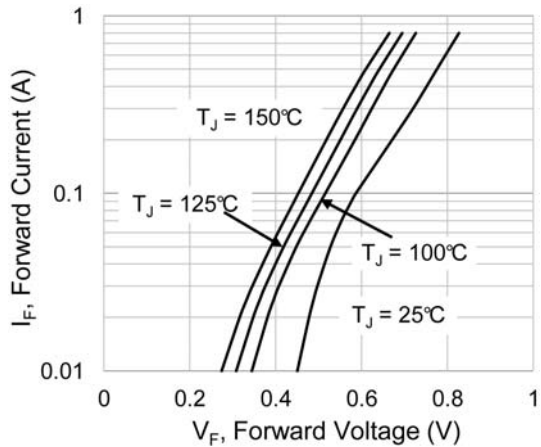


FIGURE 1. Forward Voltage Characteristics

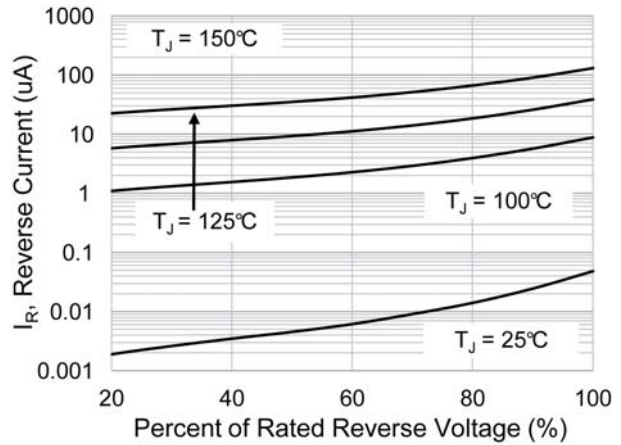


FIGURE 2. Reverse Current Versus Reverse Voltage

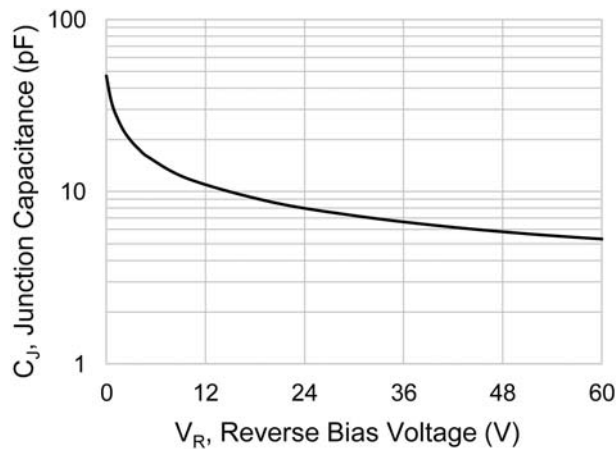


FIGURE 3. Junction Capacitance Versus Reverse Voltage

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