



# 40V 3A Schottky Diode – 1N5822

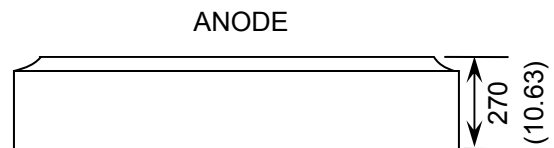
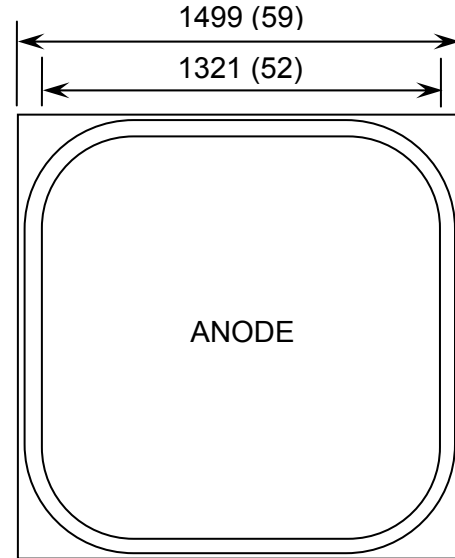
Rev 1.0  
18/01/19

Schottky Barrier Rectifier diode in bare die form

## Features:

- Guardring for over-voltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High reliability tested grades.

## 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 (100 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- With additional electrical selection – By specific request

## Mechanical Specification

Die Size (Unsawn)	1730 x 1730 59 x 59	$\mu\text{m}$ mils
Anode Pad Size	1321 x 1321 52 x 52	$\mu\text{m}$ mils
Die Thickness	270 ( $\pm 20$ ) 10.63 (0.79)	$\mu\text{m}$ mils
Top Metal Composition	Al $\geq 2.5\mu\text{m}$	
Back Metal Composition	Ti/Ni/Ag $\geq 3\mu\text{m}$	





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## Absolute Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	$V_{RRM}$	40	V
RMS Voltage	$V_{RMS}$	28	V
DC blocking voltage	$V_{DC}$	40	V
Average forward rectified current	$I_{F(AV)}$	3	A
Peak forward surge current, Test pulse – 8.3ms, half sine-wave	$I_{FSM}$	80	A
Thermal Impedance	$Z_{\theta JX}$	2.5	$^\circ\text{C/W}$
Operating Junction temperature	$T_J$	-65 to 125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to 150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Maximum instantaneous forward voltage <sup>1</sup>	$V_F$	$V_{RWM} = 40\text{V}, I_{FM} = 1\text{A}$	-	-	0.38	V
		$V_{RWM} = 40\text{V}, I_{FM} = 3\text{A}$	-	-	0.50	
		$V_{RWM} = 40\text{V}, I_{FM} = 9.4\text{A}$	-	-	0.70	
Maximum reverse leakage current	$I_{RM} @ V_{RM}$	$V_{RM} = 40\text{V}, T_J = 25^\circ\text{C}$	-	-	0.15	mA
		$V_{RM} = 40\text{V}, T_J = 100^\circ\text{C}$	-	-	12	
Junction Capacitance	$C_T$	$V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}, V_{SIG} = 50\text{mV (p-p)}$	-	-	265	pF

1. Pulse Width = 380 $\mu\text{s}$ , Duty Cycle = 2.0%

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

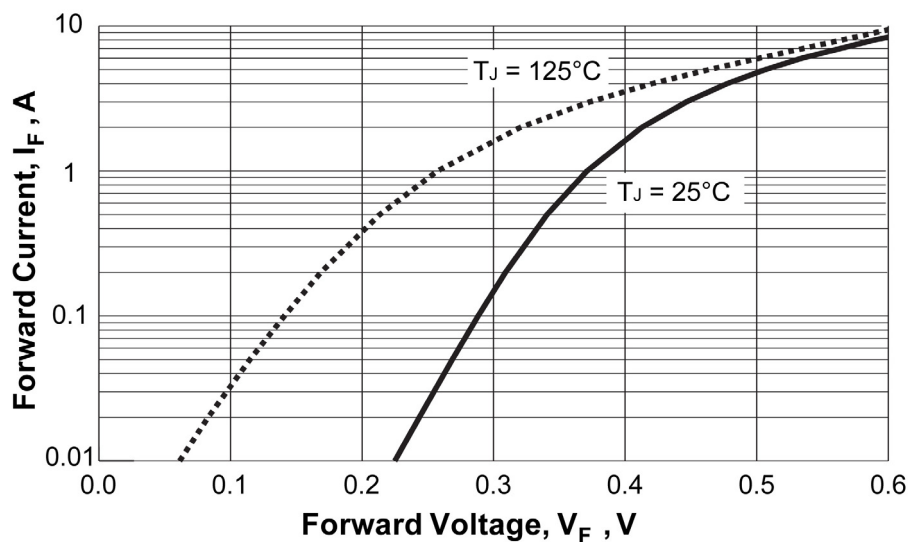


FIGURE 1. Forward Voltage Characteristics





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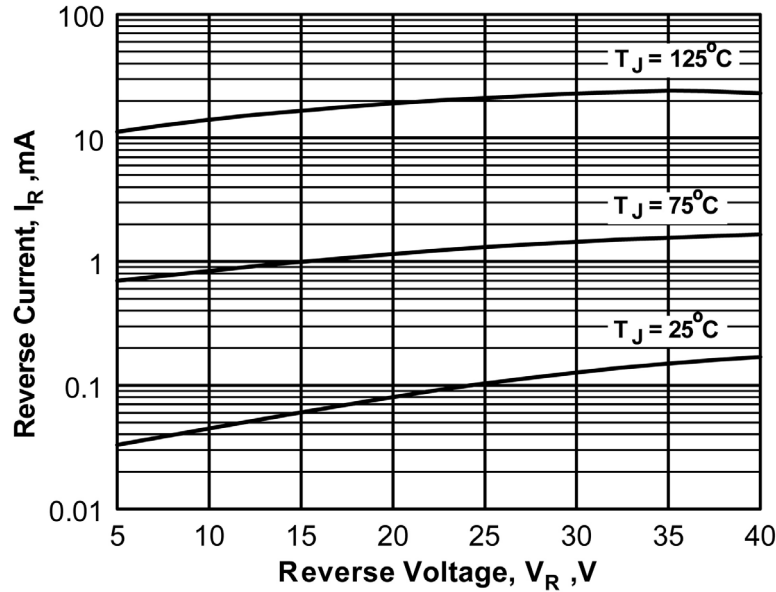


FIGURE 2. Reverse Current Versus Reverse Voltage

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