40V 3A Schottky Diode – 1N5822

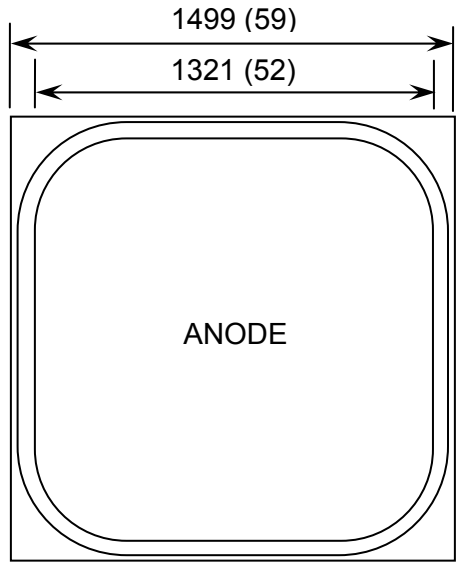
Rev 1.0
18/01/19

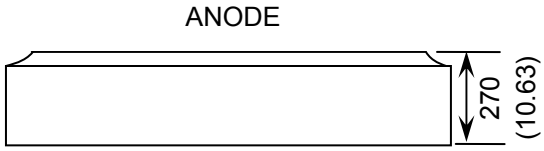
Schottky Barrier Rectifier diode in bare die form

Features:

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

Die Dimensions in 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 (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	µm mils
Anode Pad Size	1321 x 1321 52 x 52	µm mils
Die Thickness	270 (±20) 10.63 (0.79)	µm mils
Top Metal Composition	Al ≥ 2.5µm	
Back Metal Composition	Ti/Ni/Ag ≥ 3µm	

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Absolute Maximum Ratings T_J = 25°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	Ze_{JX}	2.5	°C/W
Operating Junction temperature	T_J	-65 to 125	°C
Storage Temperature Range	T_{STG}	-65 to 150	°C

Electrical Characteristics T_J = 25°C unless otherwise stated

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

1. Pulse Width = 380μs, Duty Cycle = 2.0%

Typical Characteristics T_J = 25°C unless otherwise stated

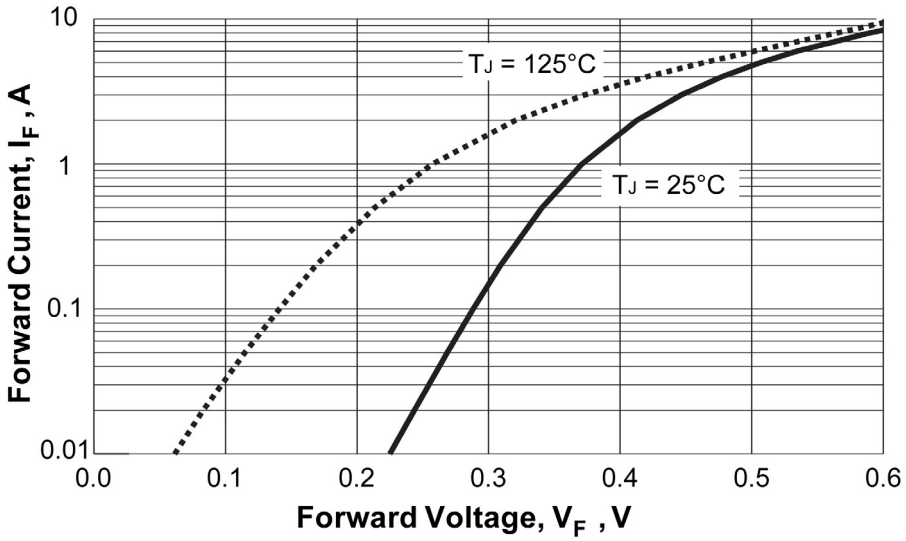

FIGURE 1. Forward Voltage Characteristics

Typical Characteristics T_J = 25°C unless otherwise stated

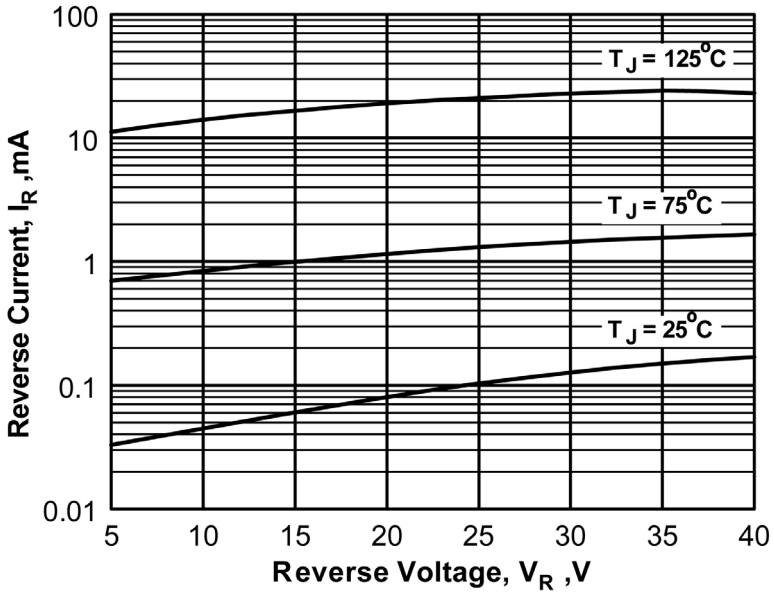

FIGURE 2. Reverse Current Versus Reverse Voltage