150V 2.5A 25ns Rectifier – 1N5806

Rev 1.0
07/12/20

Super-Fast recovery rectifier diode in bare die form

Features:

- Very low reverse recovery time
- High efficiency, low switching losses
- Very low forward voltage drop
- Controlled avalanche with peak reverse power capability
- High reliability tested grades.

Ordering Information

The following part suffixes apply:

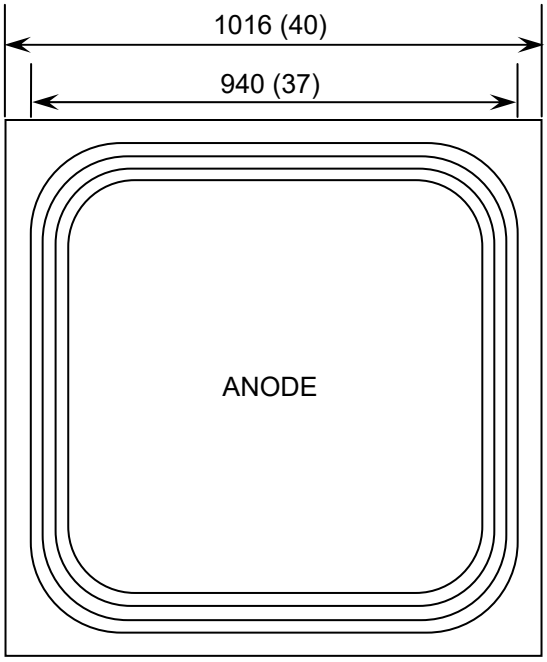
- No suffix - MIL-STD-750 /2073 Visual Inspection
- "**H**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class H LAT
- "**K**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

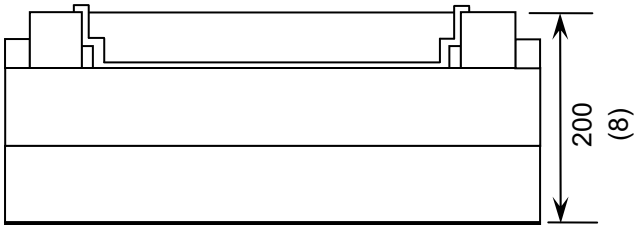
For further information on LAT process flows see below.

www.siliconsupplies.com\quality\bare-die-lot-qualification

Die Dimensions in µm (mils)



CHIP BACKSIDE IS CATHODE



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)	1016 x 1016 40 x 40	µm mils
Anode Pad Size	940 x 940 37 x 37	µm mils
Die Thickness	200 (±20) 7.87 (±0.79)	µm mils
Top Metal Composition	Al	
Back Metal Composition	Ti/Ni/Ag	

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Absolute Maximum Ratings T_J = 25°C unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Working peak reverse voltage	V_{RWM}	150	V
Repetitive peak reverse voltage	V_{RRM}	150	V
Average forward rectified current	$I_{F(AV)}$, T_J = 75°C	2.5	A
	$I_{F(AV)}$, T_A = 55°C	1	
Peak forward surge current[1]	I_{FSM}	35	A
Operating Junction temperature	T_J	-55 to 175	°C
Storage Temperature Range	T_{STG}	-65 to 200	°C

Electrical Characteristics T_J = 25°C unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V_{BR}	I_{BR} = 100μA	160	-	-	V
Maximum instantaneous forward voltage[1]	V_F	I_F = 1A	-	-	0.875	V
		I_F = 1A, T_J = 125°C	-	-	0.800	
		I_F = 2.5A	-	-	0.975	
Maximum reverse leakage current	I_{RM} @ V_{RWM}	V_{RWM} = 150V, T_J = 25°C	-	-	1	μA
		V_{RWM} = 150V, T_J = 125°C	-	-	175	
Maximum reverse recovery time	t_{rr}	I_F = 0.5A, I_{RM} = 0.5A, $I_{R(REC)}$ = 0.05A	-	-	25	ns
Junction Capacitance	C_J	V_R = 10V, T_J = 25°C, f_{SIG} = 1MHz, V_{SIG} = 50mV (p-p)	-	-	25	pF

1. T_A = 25°C @ I_O = 1A and V_{RWM} = rated, 8.3 ms surges at 1minute intervals.
2. Pulse Width = 3.8ms

Typical Characteristics T_J = 25°C unless otherwise stated

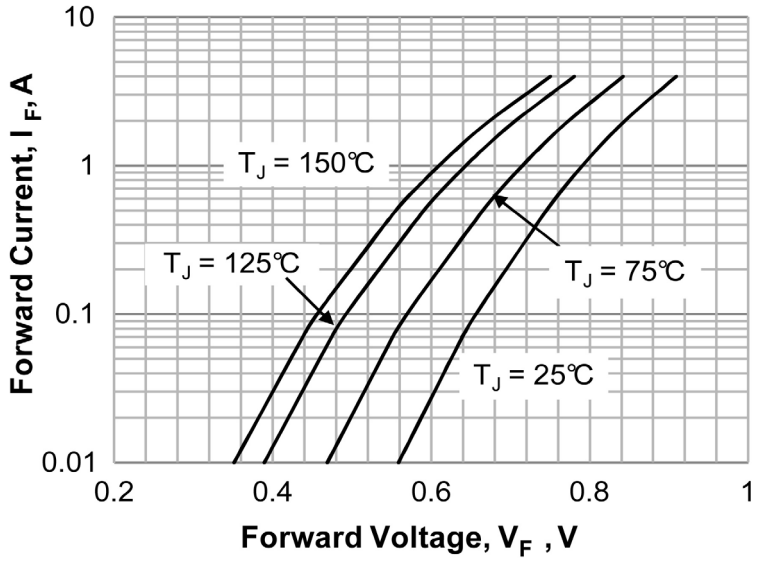

FIGURE 1. Forward Voltage Characteristics

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Typical Characteristics T_J = 25°C unless otherwise stated

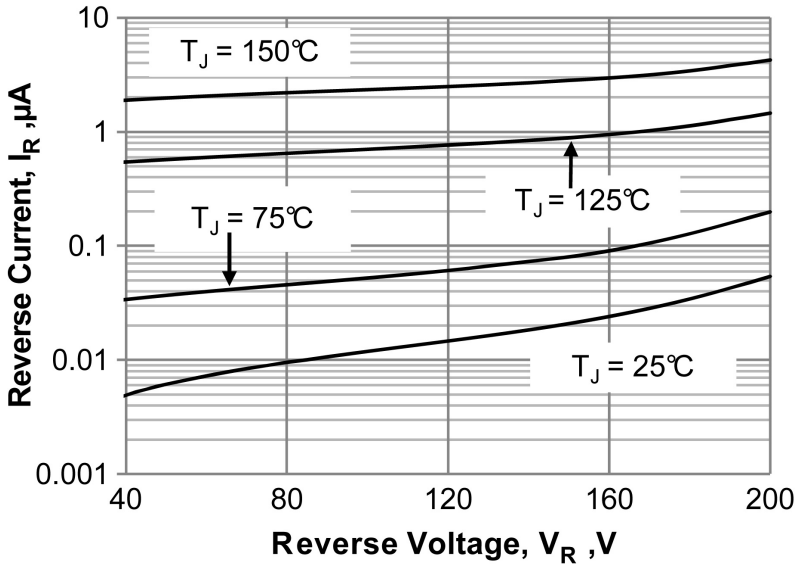

FIGURE 2. Reverse Leakage Characteristics

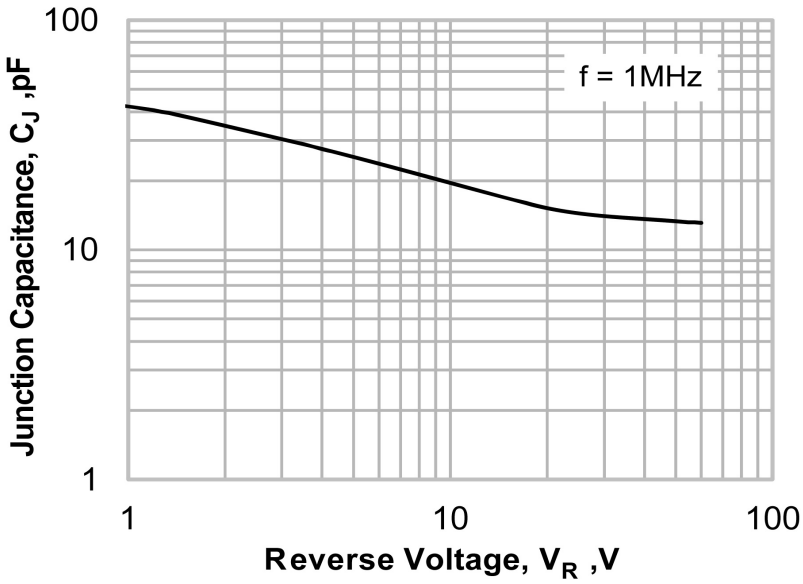

FIGURE 3. Typical Junction Capacitance