



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:

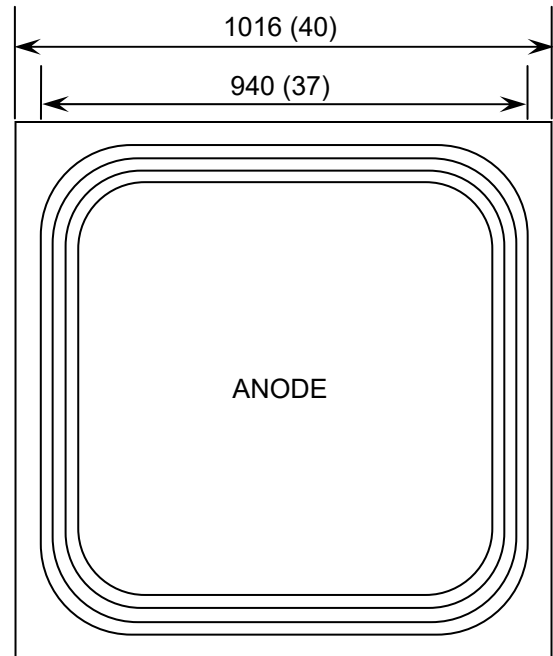
- No suffix - MIL-STD-750 /2073 Visual Inspection
- "H" - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class H LAT
- "K" - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

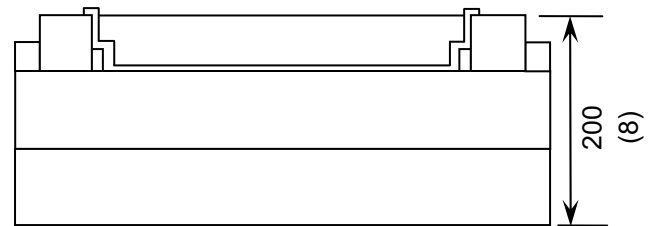
For further information on LAT process flows see below.

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 $T_J = 25^\circ\text{C}$ 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	$I_{F(AV)}, T_J = 75^\circ\text{C}$	2.5	A
	$I_{F(AV)}, T_A = 55^\circ\text{C}$	1	
Peak forward surge current ¹	I_{FSM}	35	A
Operating Junction temperature	T_J	-55 to 175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to 200	$^\circ\text{C}$

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

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

- $T_A = 25^\circ\text{C}$ @ $I_O = 1\text{A}$ and $V_{RWM} = \text{rated}$, 8.3 ms surges at 1minute intervals.
- Pulse Width = 3.8ms

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

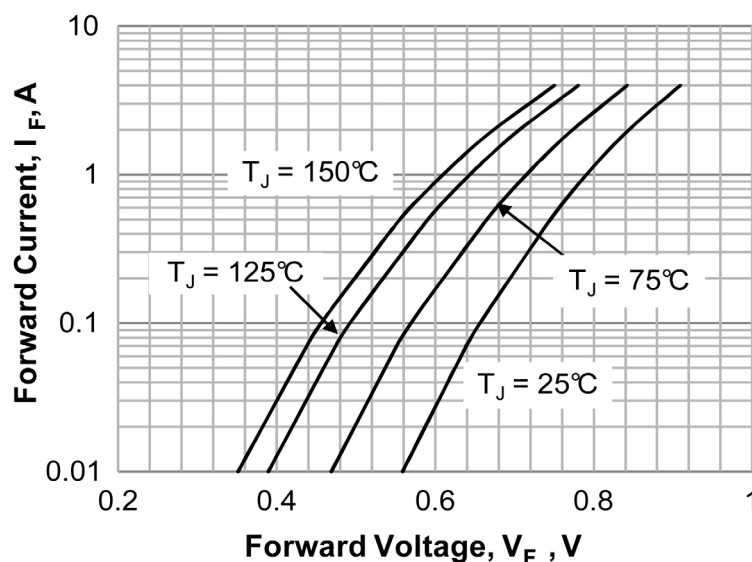


FIGURE 1. Forward Voltage Characteristics





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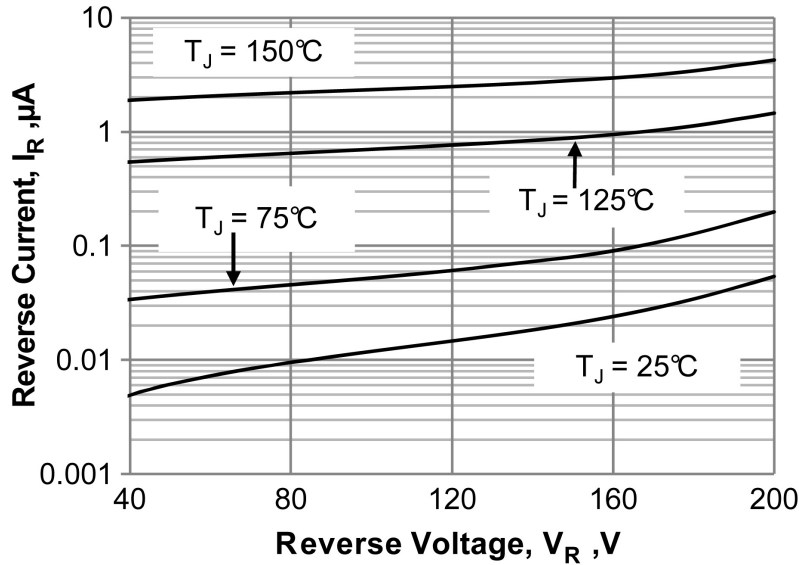


FIGURE 2. Reverse Leakage Characteristics

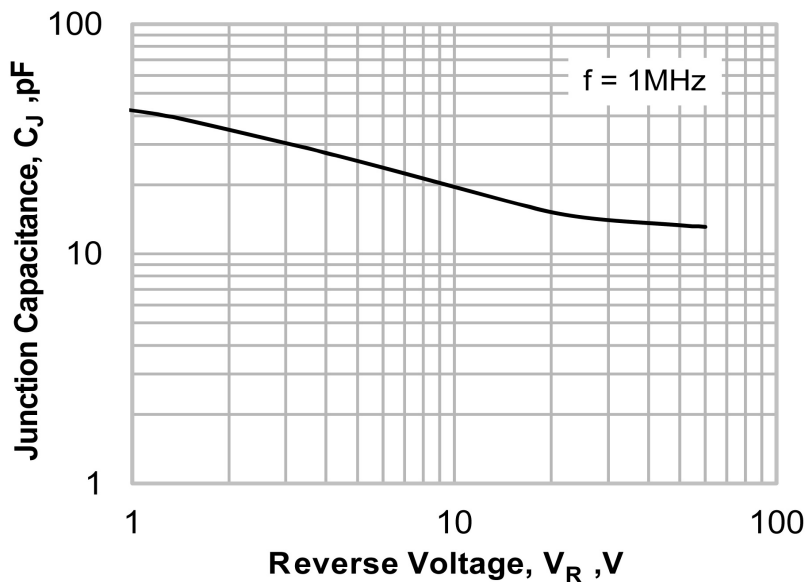


FIGURE 3. Typical Junction Capacitance

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