# 100V 0.3A Fast Switching Diode - 1N914

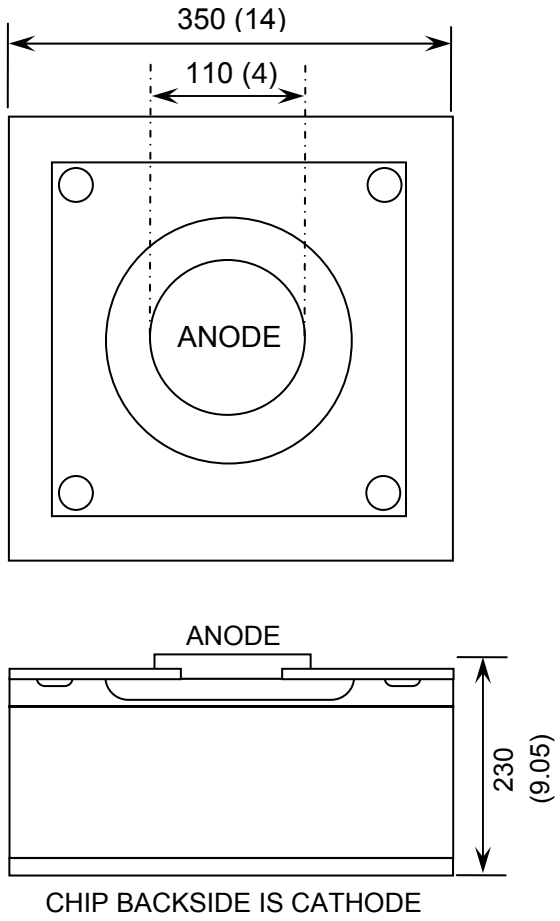
**Rev 1.1**
**24/10/24**

**Small-Signal high speed switching diode in bare die form**

## Features:

- Fast Switching Speed
- High conductance
- General purpose switching applications
- 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 (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- Die Thickness <> 230µm(9 Mils) – On request
- With additional electrical selection – On request

## Mechanical Specification

| | | |
|---|---|---|
| Die Size (Unsawn) | 350 x 350<br>13.78 x 13.78 | µm<br>mils |
| Anode Pad Size | 110 Ø<br>4.3 Ø | µm<br>mils |
| Die Thickness | 230 (±15)<br>9.05 (±0.59) | µm<br>mils |
| Top Metal Composition | Al | |
| Back Metal Composition | AuAs | |

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## Absolute Maximum Ratings[1] $T_J$ = 25°C unless otherwise stated

| PARAMETER | SYMBOL | VALUE | | UNIT |
|---|---|---|---|---|
| Non-repetitive Peak Reverse Voltage | $V_{RSM}$ | 105 | | V |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | 100 | | V |
| Average Rectified Forward Current | $I_O$ | 200 | | mA |
| DC Forward Current | $I_F$ | 300 | | mA |
| Recurrent Peak Forward Current | $I_f$ | 400 | | mA |
| Non-repetitive Peak forward surge current | $I_{FSM}$ | Pulse width 1s | 1 | A |
| | | Pulse width 1µs | 4 | |
| Power Dissipation | $P_D$ | 200 | | mW |
| Operating Junction temperature | $T_J$ | -55 to 175 | | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to 200 | | °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.

## Electrical Characteristics $T_J$ = 25°C unless otherwise stated

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Breakdown Voltage | $V_R$ | $I_R$ = 100µA | 100 | - | - | V |
| | | $I_R$ = 5µA | 75 | - | - | V |
| Forward Voltage[2] | $V_F$ | $I_F$ = 5mA | - | - | 0.72 | V |
| | | $I_F$ = 20mA | - | - | 1 | |
| | | $I_F$ = 100mA | - | - | 1 | |
| Reverse Leakage | $I_R$ | $V_R$ = 20V | - | - | 0.025 | µA |
| | | $V_R$ = 20V, $T_J$ = 150°C | - | - | 50 | |
| | | $V_R$ = 75V | - | - | 5 | |
| | | $V_R$ = 100V | - | - | 10 | |
| Total Capacitance | $C_T$ | $V_R$ = 0V, f = 1MHz | - | - | 4 | pF |
| Reverse Recovery Time | $t_{rr}$ | $I_F$ = 10mA, $V_R$ = 6V (600mA)<br>$I_{rr}$ = 1mA, $R_L$ = 100Ω | - | - | 4 | ns |

**2**. Pulse Width = 8.3ms, Non-recurrent square wave

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## Typical Characteristics $T_J$ = 25°C unless otherwise stated

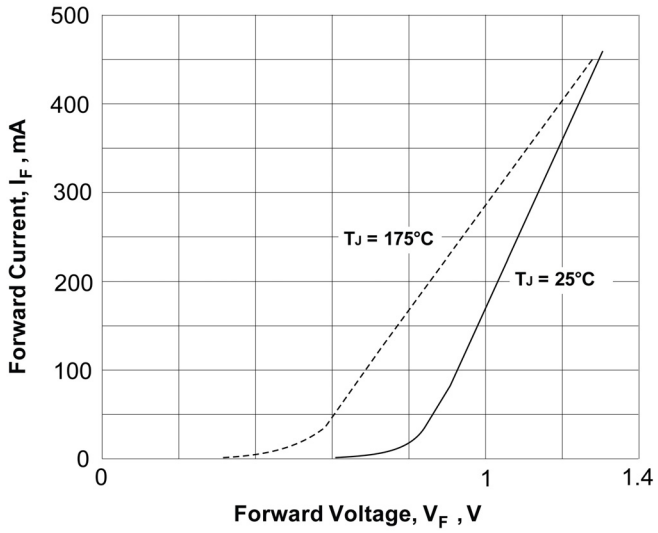


**FIGURE 1.** Forward Voltage Characteristics

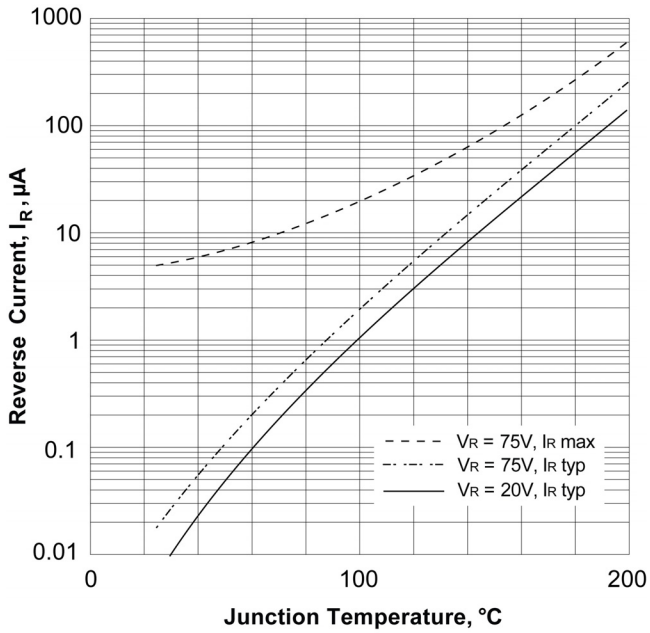


**FIGURE 2.** Leakage Current Versus Temperature