

**SURFACE MOUNT
FAST SWITCHING DIODE**

**REVERSE VOLTAGE – 75 Volts
FORWARD CURRENT – 0.25 Ampere**

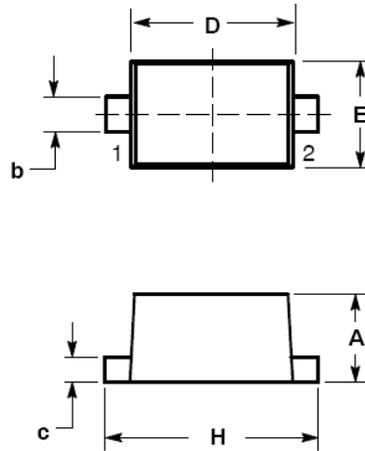
FEATURES

- Fast switching speed
- Low reverse leakage current
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

MECHANICAL DATA

- Package: SOD-523 plastic
- Package material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture sensitivity: Level 1 per J-STD-020

SOD-523



| SOD-523 | | |
|--------------------------|------|------|
| Dim. | Min. | Max. |
| A | 0.50 | 0.77 |
| b | 0.25 | 0.35 |
| c | 0.07 | 0.20 |
| D | 1.10 | 1.30 |
| E | 0.70 | 0.90 |
| H | 1.50 | 1.70 |
| Dimensions in millimeter | | |

Maximum Ratings & Thermal Characteristics @ T_A = +25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 85 | V |
| Continuous Reverse Voltage | V _R | 75 | V |
| Forward Continuous Current @ T _s = 90°C (Note 4) | I _{FM} | 250 | mA |
| Peak Forward Surge Current @ t = 1s | I _{FSM} | 0.5 | A |
| Repetitive Peak Forward Current | I _{FRM} | 0.5 | A |
| Total Power Dissipation @ T _s = 90°C (Note 4) | P _{tot} | 500 | mW |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |

Electrical Characteristics @ T_A = +25°C unless otherwise specified

| Characteristic | Test Condition | Symbol | Value | Unit |
|---|--|-----------------|-------|------|
| Maximum Forward Voltage | I _F = 150mA | V _F | 1.25 | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | V _R = 75V | I _R | 1 | µA |
| Maximum Total Capacitance | V _R = 0V, f = 1MHz | C _T | 1 | pF |
| Maximum Reverse Recovery Time | V _R = 6V I _R = I _F = 10mA R _L = 100Ω | t _{rr} | 4 | ns |

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. T_s is the temperature at the soldering point of the cathode tab.

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Fig.1 Maximum Continuous Forward Current vs. Soldering Point Temperature

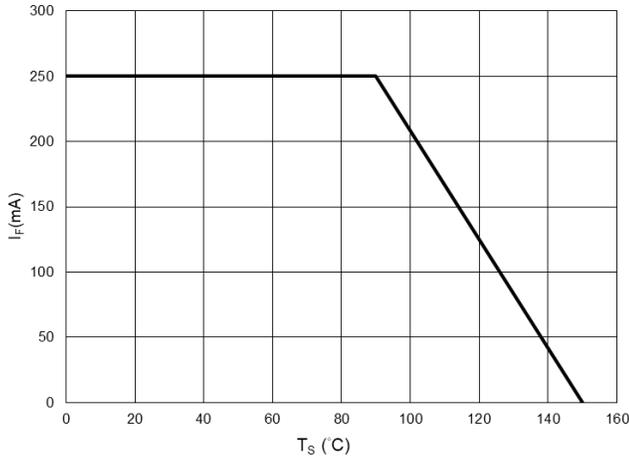


Fig.2 Typical Forward Characteristics

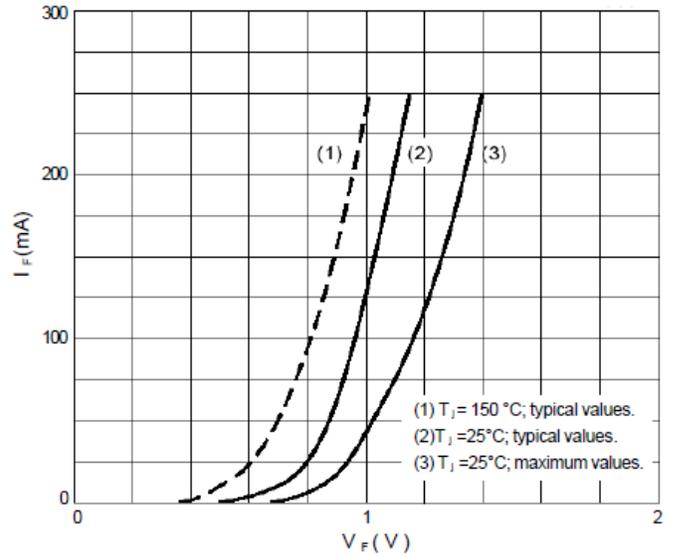


Fig.3 Non-Repetitive Peak Forward Current

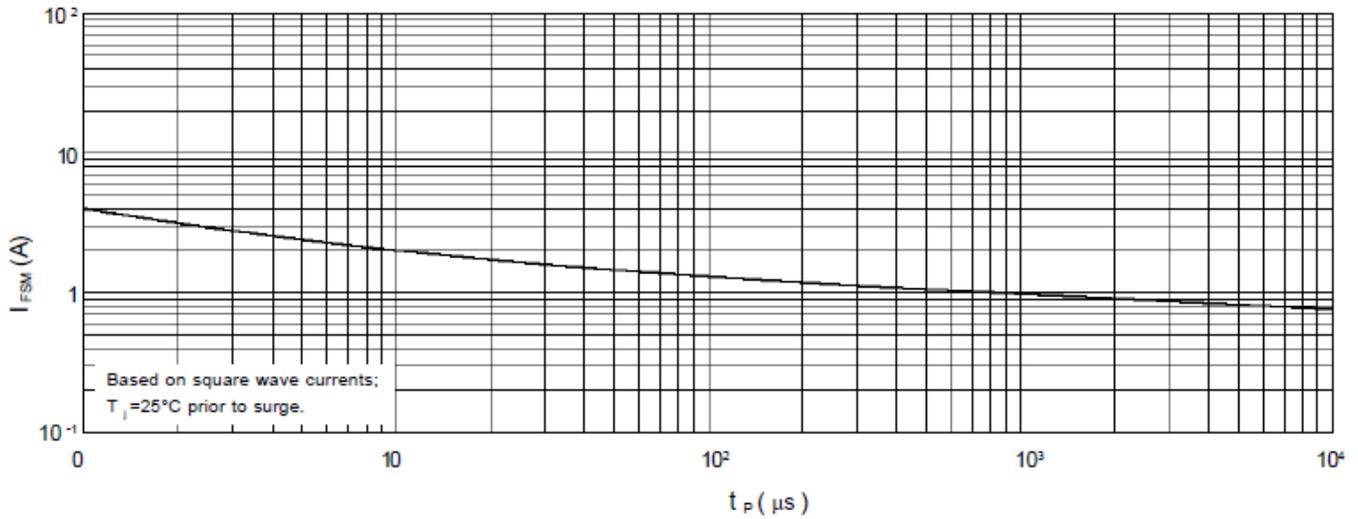


Fig.4 Reverse Current Characteristics

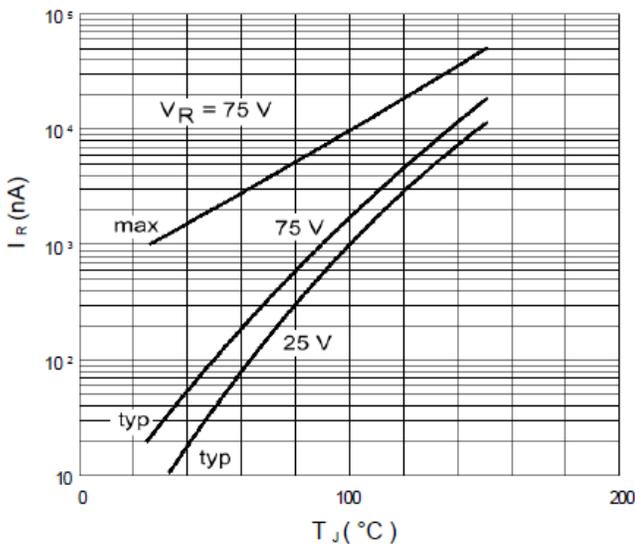
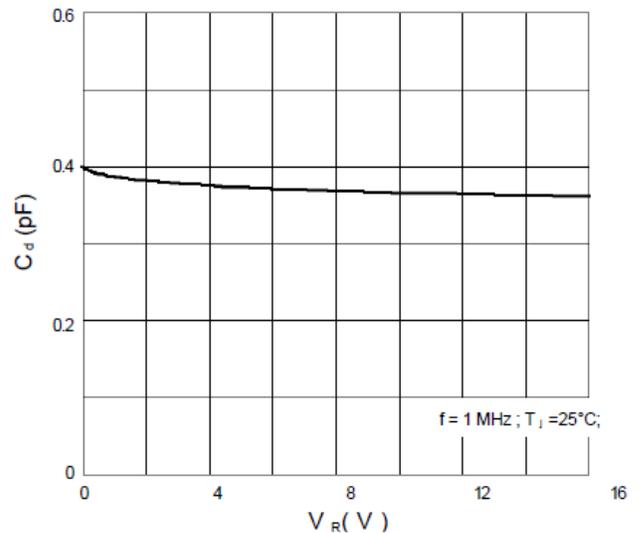
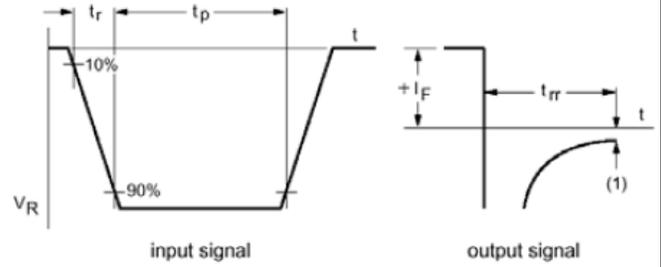
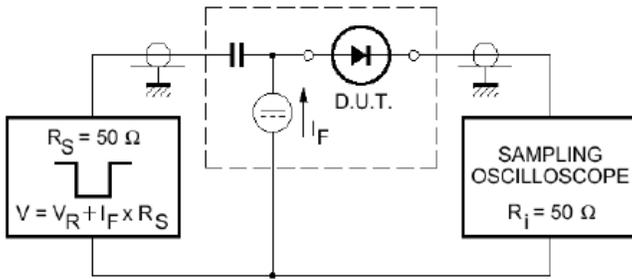


Fig.5 Capacitance Characteristics



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Fig.6 Reverse Recovery Voltage Test Circuit and Waveforms

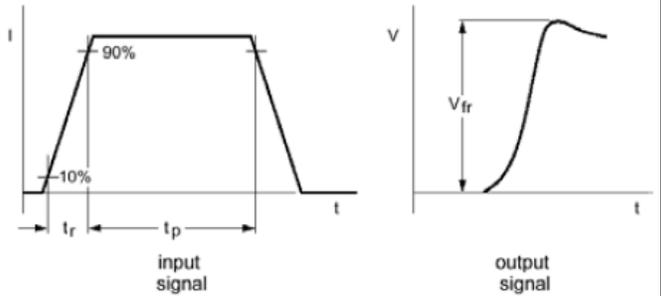
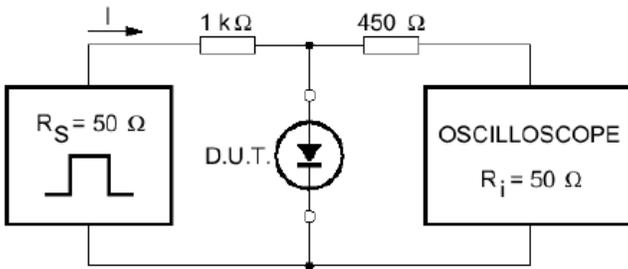


(1) $I_F = 1 \text{ mA}$.

Input signal: reverse pulse rise time $t_r = 0.6 \text{ ns}$; reverse voltage pulse duration $t_p = 100 \text{ ns}$; duty factor $\delta = 0.05$;

Oscilloscope: rise time $t_r = 0.35 \text{ ns}$.

Fig.7 Forward Recovery Voltage Test Circuit and Waveforms

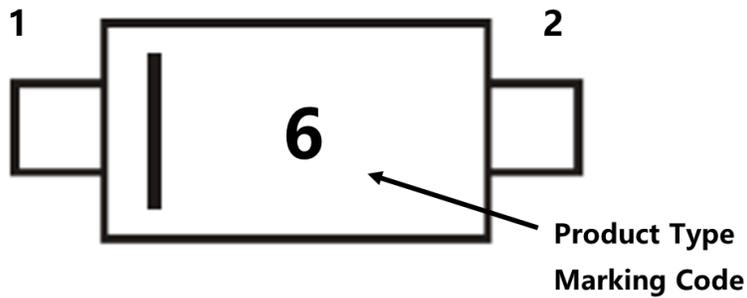


Input signal: forward pulse rise time $t_r = 20 \text{ ns}$; forward current pulse duration $t_p \geq 100 \text{ ns}$; duty factor $\delta \leq 0.005$.

Ordering Information:

| Part Number | Package | Packing | |
|-------------|---------|---------|-------------|
| | | Qty. | Carrier |
| BAS516 | SOD-523 | 3000pcs | Tape & Reel |

Marking Information:



| Device P/N | Marking Code | Equivalent Circuit Diagram |
|------------|--------------|----------------------------|
| BAS516 | 6 | 1 ○ — <— ○ 2 |

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