

MMSD914T1G, SMMSD914T1G, MMSD914T3G

Switching Diode

Features

- SOD-123 Surface Mount Package
- High Breakdown Voltage
- Fast Speed Switching Time
- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|-----------------|-------|------|
| Continuous Reverse Voltage | V_R | 100 | Vdc |
| Peak Forward Current | I_F | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |
| Non-repetitive Peak Forward Surge Current | I_{FSM} | | |
| Pulse Width =1 second | | 1.0 | A |
| Pulse Width =1 micro second | | 2.0 | A |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 425 | mW |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 3.4 | $\text{mW}/^\circ\text{C}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

1. FR-5 = 1.0oz Cu, 1.0in² pad



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SOD-123
CASE 425
PLASTIC



MARKING DIAGRAM



5D = Specific Device Code
M = Date Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|-------------|-------------------|----------------------|
| MMSD914T1G | SOD-123 (Pb-Free) | 3,000 / Tape & Reel |
| SMMSD914T1G | SOD-123 (Pb-Free) | 3,000 / Tape & Reel |
| MMSD914T3G | SOD-123 (Pb-Free) | 10,000 / Tape & Reel |

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|---|------------|-----|-----------|---------------------------|
| OFF CHARACTERISTICS | | | | |
| Reverse Breakdown Voltage ($I_{BR} = 100 \mu\text{A}$) | $V_{(BR)}$ | 100 | - | Vdc |
| Reverse Voltage Leakage Current ($V_R = 20 \text{ Vdc}$) ($V_R = 75 \text{ Vdc}$) | I_R | - | 25 5.0 | nA dc μA dc |
| Forward Voltage ($I_F = 10 \text{ mA}$) | V_F | - | 1000 | mVdc |
| Diode Capacitance ($V_R = 0 \text{ Vdc}$, $f = 1.0 \text{ MHz}$) | C_D | - | 4.0 | pF |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mA}$) (Figure 1) | t_{rr} | - | 4.0 | ns |

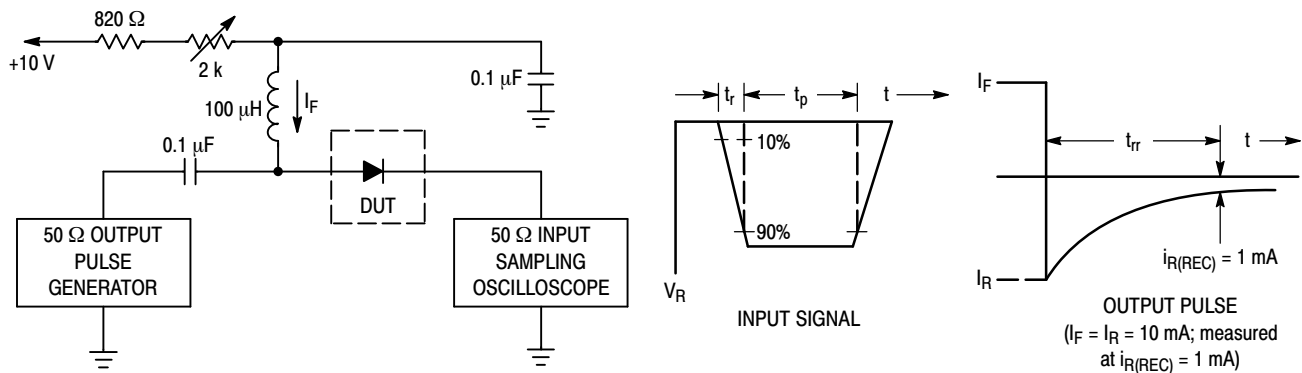


Figure 1. Recovery Time Equivalent Test Circuit

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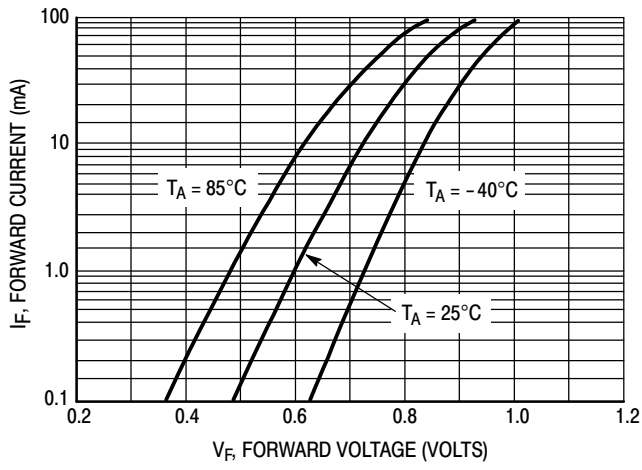


Figure 2. Forward Voltage

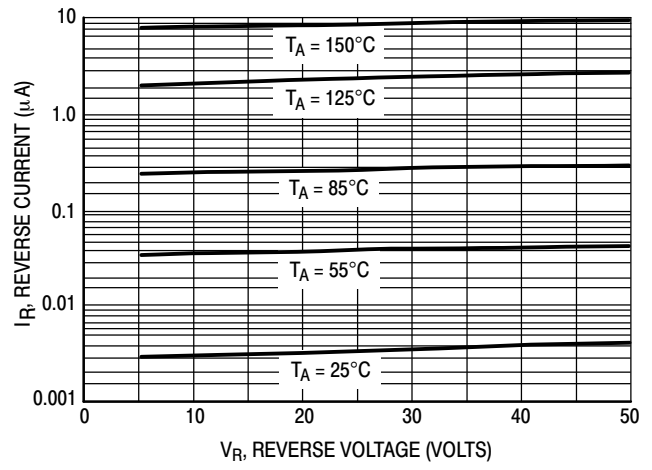


Figure 3. Leakage Current

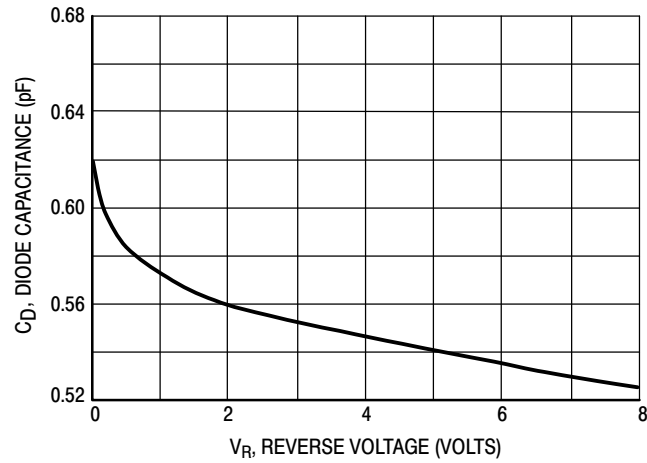
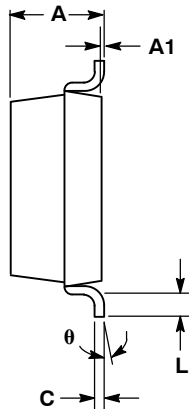
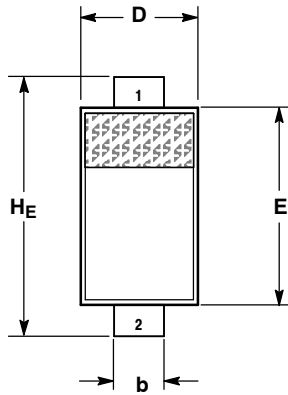


Figure 4. Capacitance

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PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE G

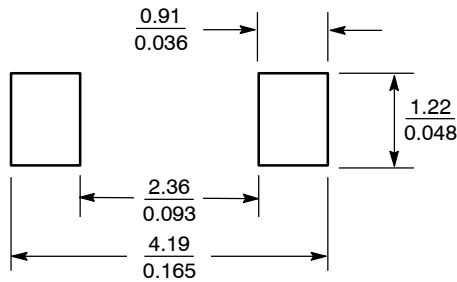


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.94 | 1.17 | 1.35 | 0.037 | 0.046 | 0.053 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| b | 0.51 | 0.61 | 0.71 | 0.020 | 0.024 | 0.028 |
| c | --- | --- | 0.15 | --- | --- | 0.006 |
| D | 1.40 | 1.60 | 1.80 | 0.055 | 0.063 | 0.071 |
| E | 2.54 | 2.69 | 2.84 | 0.100 | 0.106 | 0.112 |
| HE | 3.56 | 3.68 | 3.86 | 0.140 | 0.145 | 0.152 |
| L | 0.25 | --- | --- | 0.010 | --- | --- |
| θ | 0° | --- | 10° | 0° | --- | 10° |

STYLE 1:
PIN 1. CATHODE
2. ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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