

MMSD71RKT1

Switching Diode

The switching diode has the following features:

Features

- SOD-123 Surface Mount Package
- High Breakdown Voltage
- Fast Speed Switching Time
- Pb-Free Package is Available

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | V_R | 80 | Vdc |
| Peak Forward Current | I_F | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|------------|----------------------------|
| Total Device Dissipation FR-5 Board (Note1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 425 3.4 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction-to-Ambient | $R_{\theta JA}$ | 290 | $^\circ\text{C/W}$ |

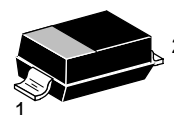
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. FR-5 = 1.0oz Cu, 1.0in² pad



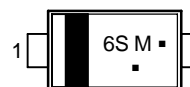
ON Semiconductor[®]

<http://onsemi.com>



SOD-123
CASE 425
STYLE 1

MARKING DIAGRAM



6S = Device Code

M = Date Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

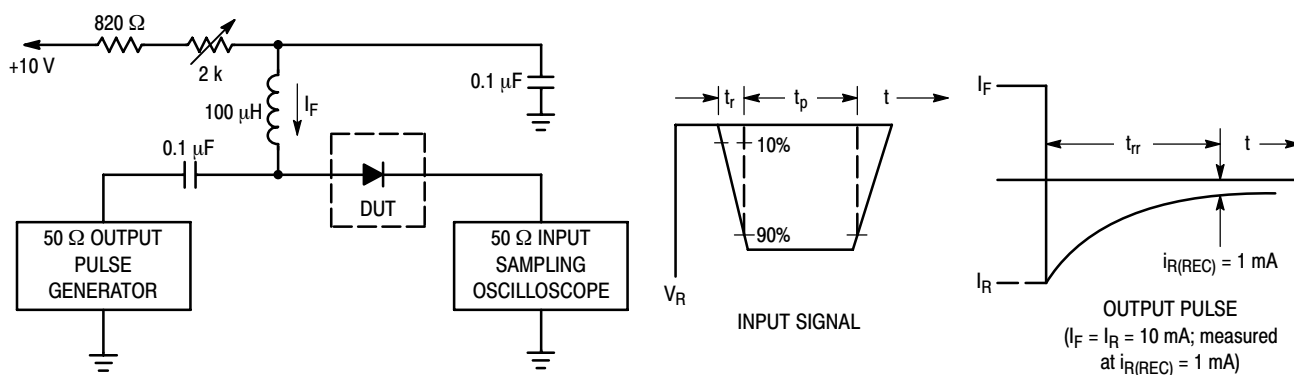
| Device | Package | Shipping [†] |
|-------------|----------------------|-----------------------|
| MMSD71RKT1 | SOD-123 | 3000 / Tape & Reel |
| MMSD71RKT1G | SOD-123 (Pb-Free) | 3000 / Tape & Reel |

[†]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.

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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 ($I_{BR} = 100 \mu\text{A}$) | $V_{(BR)}$ | 80 | – | Vdc |
| Reverse Voltage Leakage Current ($V_R = 80 \text{ Vdc}$) | I_R | – | 500 | nA |
| Forward Voltage ($I_F = 100 \text{ mA}$) | V_F | – | 1200 | mVdc |
| Diode Capacitance ($V_R = 0.5 \text{ Vdc}$, $f = 1.0 \text{ MHz}$) | C_D | – | 2.0 | pF |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mA}$) (Figure 1) | t_{rr} | – | 4.0 | ns |



- Notes: 1. A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

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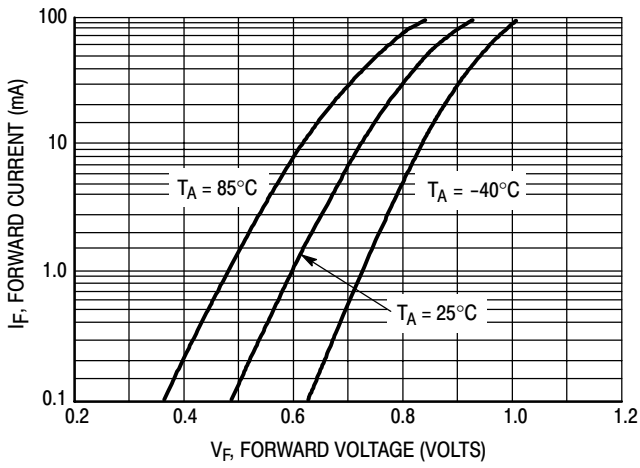


Figure 2. Forward Voltage

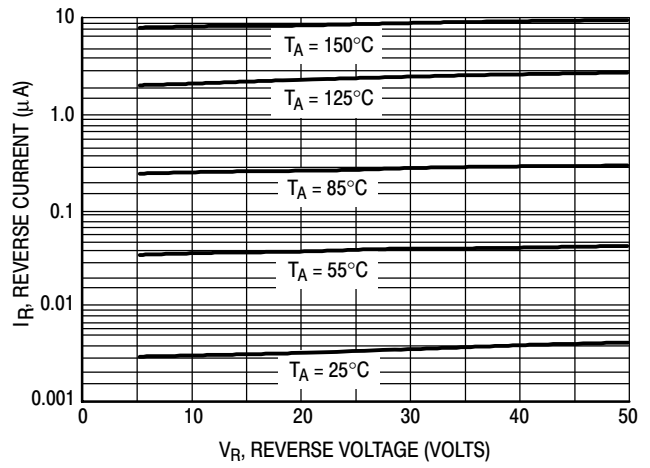


Figure 3. Leakage Current

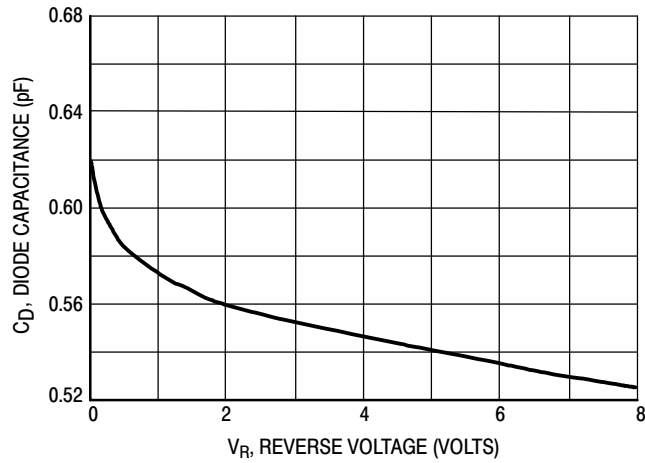
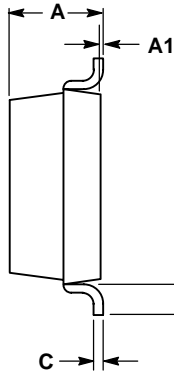
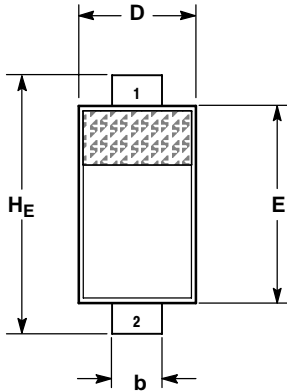


Figure 4. Capacitance

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PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE E



NOTES:

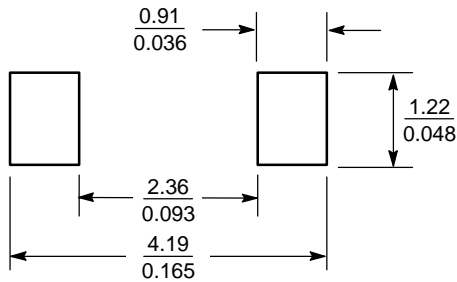
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| 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 | --- | --- |

STYLE 1:

- PIN 1. CATHODE
2. ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 ($\frac{\text{mm}}{\text{inches}}$)

*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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