

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 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

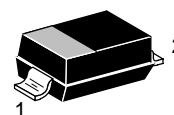
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0oz Cu, 1.0in² pad



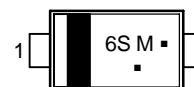
ON Semiconductor[®]

<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

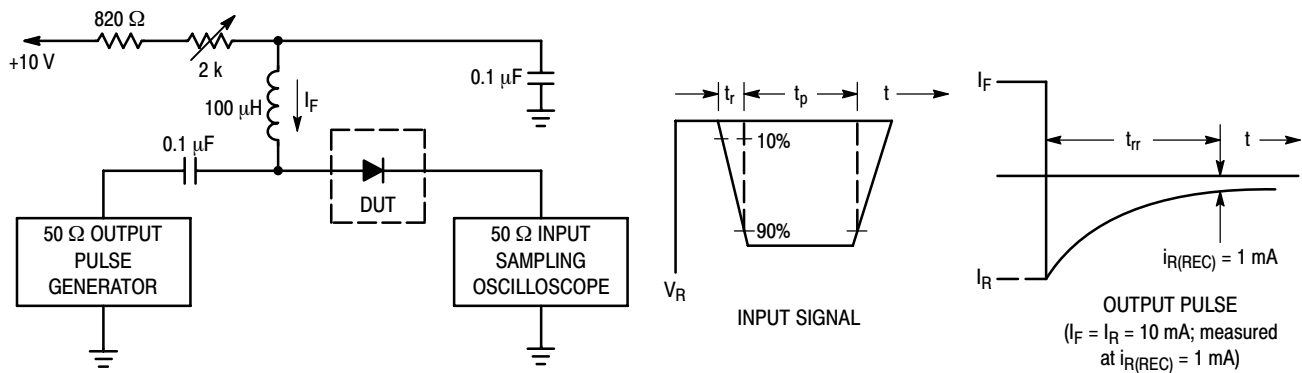
| Device | Package | Shipping [†] |
|-------------|----------------------|-----------------------|
| MMSD71RKT1 | SOD-123 | 3000 / Tape & Reel |
| MMSD71RKT1G | SOD-123 (Pb-Free) | 3000 / Tape & Reel |

[†]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.

MMSD71RKT1

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 $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

MMSD71RKT1

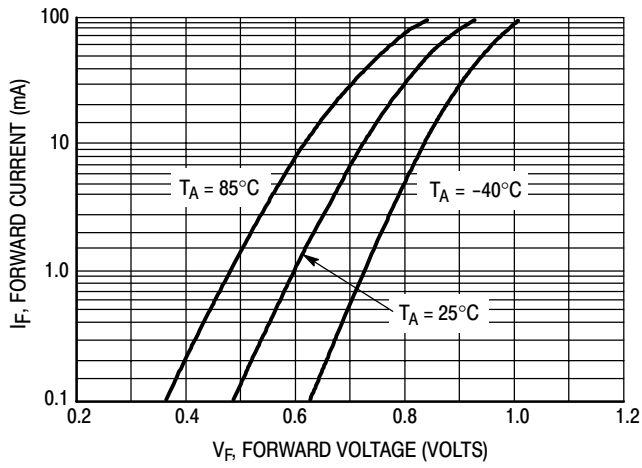


Figure 2. Forward Voltage

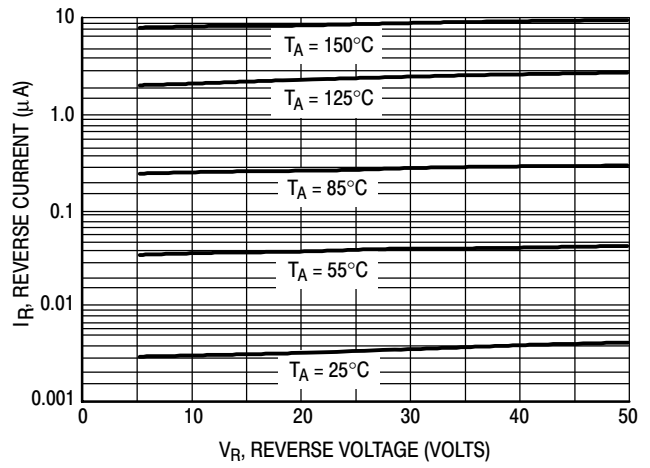


Figure 3. Leakage Current

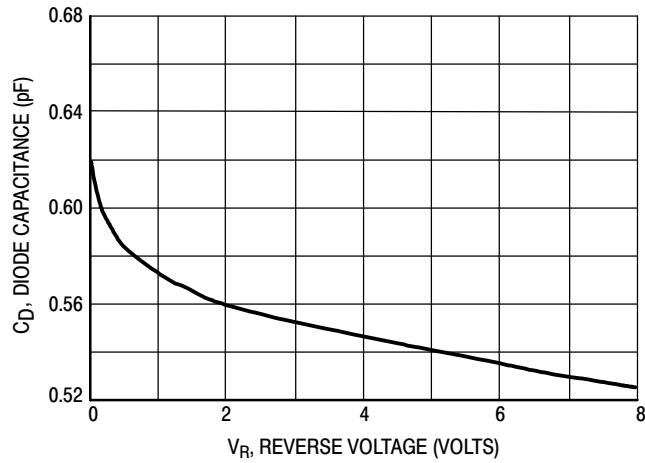


Figure 4. Capacitance

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

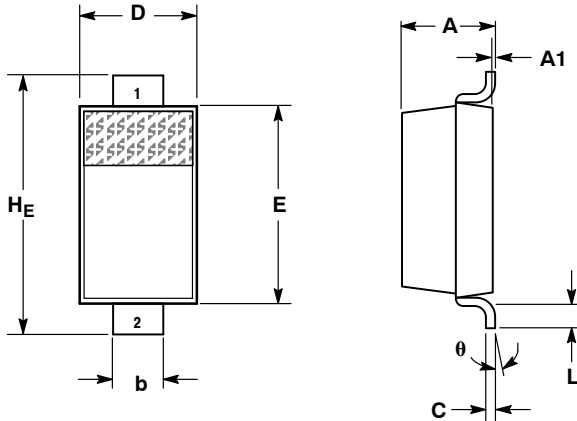
ON Semiconductor®



SCALE 5:1

SOD-123
CASE 425-04
ISSUE G

DATE 07 OCT 2009



- NOTES:
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 - 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° |

GENERIC MARKING DIAGRAM*



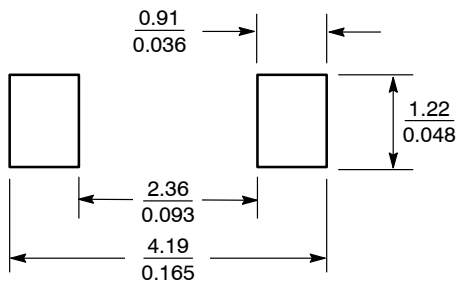
- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present.

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.

| | | |
|------------------|-------------|--|
| DOCUMENT NUMBER: | 98ASB42927B | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| DESCRIPTION: | SOD-123 | PAGE 1 OF 1 |

ON Semiconductor and ON are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales