

DA121TT1G

Silicon Switching Diode

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| Rating | Symbol | Max | Unit |
|--|------------------------|-----|------|
| Continuous Reverse Voltage | V_R | 80 | V |
| Recurrent Peak Forward Current | I_F | 200 | mA |
| Peak Forward Surge Current Pulse Width = 10 μs | $I_{FM(\text{surge})}$ | 500 | mA |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|---------------------------|
| Total Device Dissipation, FR-4 Board (Note 1) $T_A = 25^\circ\text{C}$ Derated above 25°C | P_D | 225 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 555 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation, FR-4 Board (Note 2) $T_A = 25^\circ\text{C}$ Derated above 25°C | P_D | 360 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 345 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

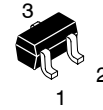
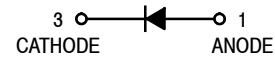
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-4 @ Minimum Pad
2. FR-4 @ 1.0 x 1.0 Inch Pad



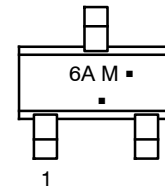
ON Semiconductor®

<http://onsemi.com>



SOT-416 / SC-75
CASE 463
STYLE 2

MARKING DIAGRAM



6A = Specific Device Code
M = Date Code*
▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

| Device | Package | Shipping† |
|-----------|----------------------|--------------------|
| DA121TT1G | SOT-416 (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.

DA121TT1G

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

| Characteristic | Symbol | Min | Max | Unit |
|--|----------|-----|----------------------------|---------------|
| Forward Voltage - ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 50\text{ mA}$) ($I_F = 150\text{ mA}$) | V_F | - | 715 866 1000 1250 | mV |
| Reverse Current - ($V_R = 75\text{ V}$) ($V_R = 75\text{ V}, T_J = 150^\circ\text{C}$) ($V_R = 25\text{ V}, T_J = 150^\circ\text{C}$) | I_R | - | 1.0 50 30 | μA |
| Capacitance - ($V_R = 0, f = 1.0\text{ MHz}$) | C_D | - | 2.0 | pF |
| Reverse Recovery Time - ($I_F = I_R = 10\text{ mA}, R_L = 50\ \Omega$) (Figure 1) | t_{rr} | - | 6.0 | ns |
| Stored Charge - ($I_F = 10\text{ mA}$ to $V_R = 6.0\text{ V}, R_L = 500\ \Omega$) (Figure 2) | QS | - | 45 | PC |
| Forward Recovery Voltage - ($I_F = 10\text{ mA}, t_r = 20\text{ ns}$) (Figure 3) | V_{FR} | - | 1.75 | V |

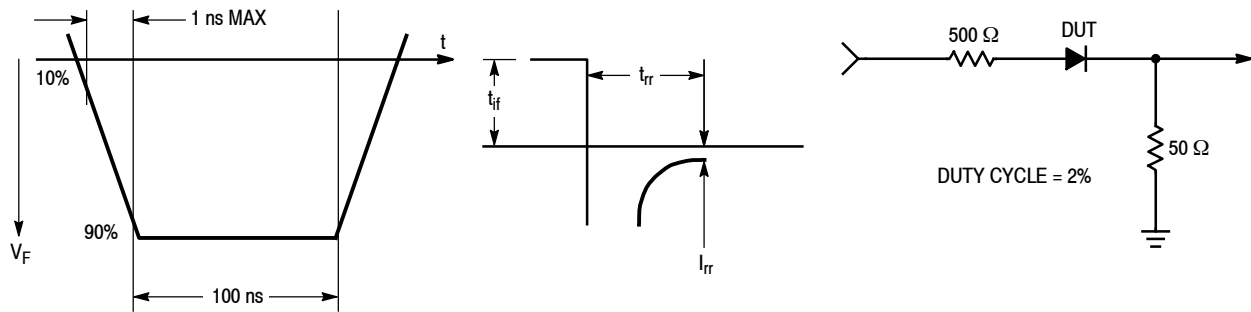


Figure 1. Reverse Recovery Time Equivalent Test Circuit

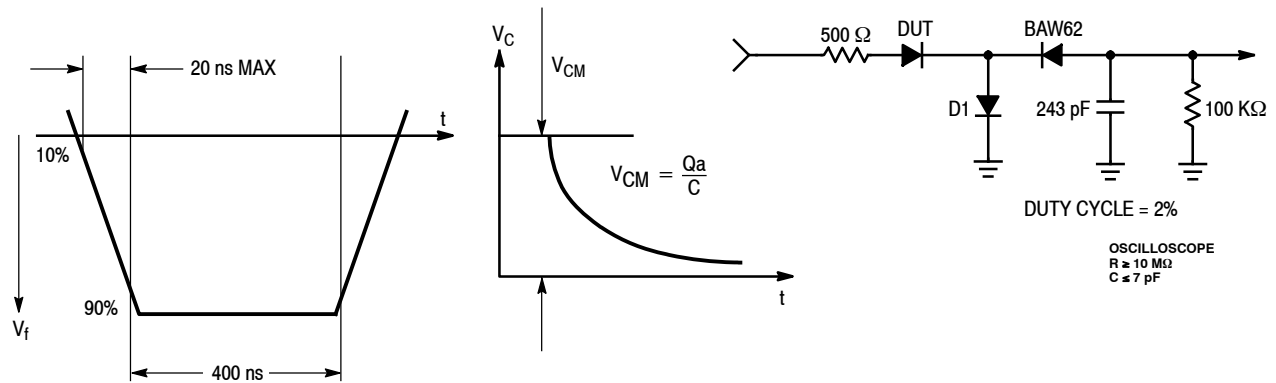


Figure 2. Recovery Charge Equivalent Test Circuit

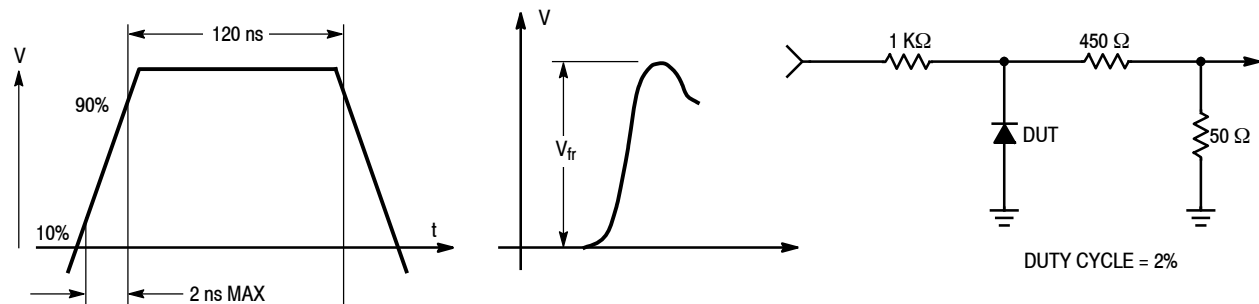


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

DA121TT1G

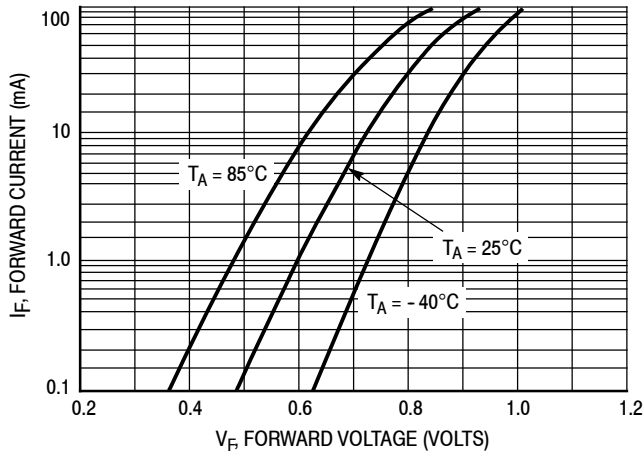


Figure 4. Forward Voltage

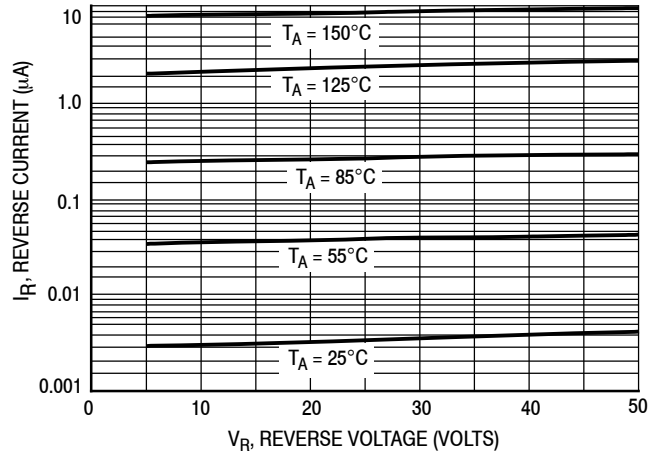


Figure 5. Leakage Current

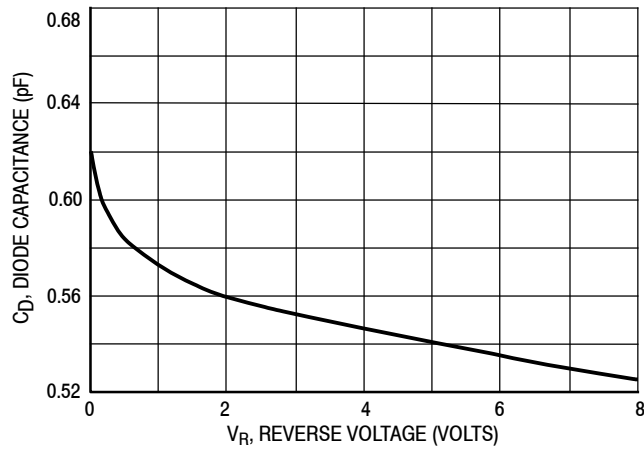


Figure 6. Capacitance

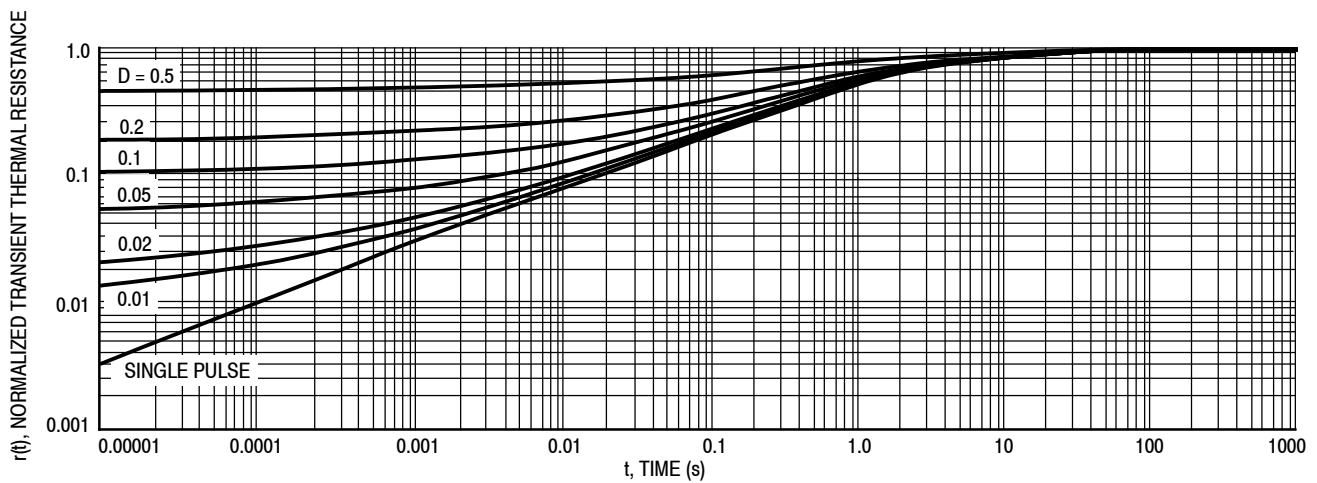


Figure 7. Normalized Thermal Response

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

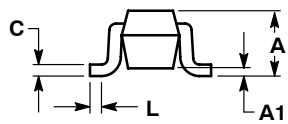
ON Semiconductor®



SC-75/SOT-416
CASE 463-01
ISSUE G

DATE 07 AUG 2015

SCALE 4:1



STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

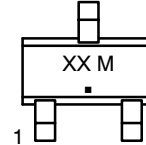
STYLE 5:
PIN 1. GATE
2. SOURCE
3. DRAIN

NOTES:

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

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.70 | 0.80 | 0.90 | 0.027 | 0.031 | 0.035 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| b | 0.15 | 0.20 | 0.30 | 0.006 | 0.008 | 0.012 |
| C | 0.10 | 0.15 | 0.25 | 0.004 | 0.006 | 0.010 |
| D | 1.55 | 1.60 | 1.65 | 0.061 | 0.063 | 0.065 |
| E | 0.70 | 0.80 | 0.90 | 0.027 | 0.031 | 0.035 |
| e | 1.00 BSC | | | 0.04 BSC | | |
| L | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| HE | 1.50 | 1.60 | 1.70 | 0.060 | 0.063 | 0.067 |

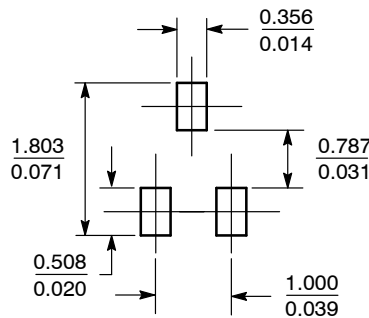
GENERIC MARKING DIAGRAM*



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

*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.

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: | 98ASB15184C | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| DESCRIPTION: | SC-75/SOT-416 | PAGE 1 OF 1 |

ON Semiconductor and 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.

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. 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. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor 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 ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor 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 ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Email Requests to: orderlit@onsemi.com

ON Semiconductor Website: www.onsemi.com

TECHNICAL SUPPORT

North American Technical Support:
Voice Mail: 1 800-282-9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:

Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative

◇