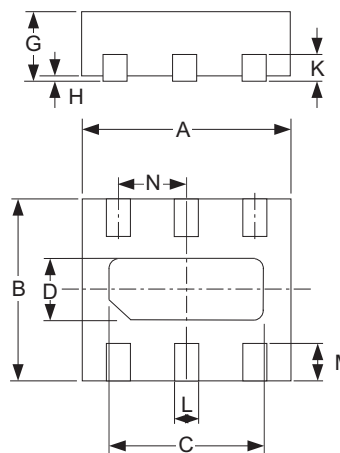


**Features**

- Low Forward Voltage Drop
- Fast Switching
- Very High Density (Six diode Elements in a sub-miniature Package)
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**

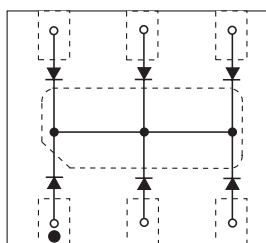
**Mechanical Data**

- Case: DFN1616-6
- Case material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (NiPdAu Finish annealed over Copper leadframe).
- Polarity: Pin 1 Dot and Center Pad notch, See diagram
- Marking Code: ST (See Page 2)
- Weight: 0.004 grams (approximate)



| DFN1616-6 |       |       |       |
|-----------|-------|-------|-------|
| Dim       | Min   | Max   | Typ   |
| A         | 1.55  | 1.675 | 1.60  |
| B         | 1.55  | 1.675 | 1.60  |
| C         | 1.10  | 1.30  | 1.20  |
| D         | 0.30  | 0.50  | 0.40  |
| G         | 0.545 | 0.605 | 0.575 |
| H         | 0     | 0.05  | 0.02  |
| K         | —     | —     | 0.13  |
| L         | 0.20  | 0.30  | 0.25  |
| M         | 0.275 | 0.375 | 0.325 |
| N         | —     | —     | 0.50  |

**All Dimensions in mm**



TOP VIEW SCHEMATIC

**Maximum Ratings** @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic   | Symbol   | Value       | Unit |
|--|--|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 30          | V    |
| Forward Continuous Current   | I <sub>FM</sub>  | 200         | mA   |
| Non-Repetitive Peak Forward Surge Current @ t < 1.0s                                   | I <sub>FSM</sub>                                       | 625         | mA   |
| Power Dissipation (total package)  | P <sub>d</sub>   | 250         | mW   |
| Thermal Resistance Junction to Ambient Air   | R <sub>θJA</sub>                                       | 400         | °C/W |
| Operating Temperature Range  | T <sub>j</sub>   | -55 to +125 | °C   |
| Storage Temperature Range  | T <sub>STG</sub>                                       | -65 to +125 | °C   |

**Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

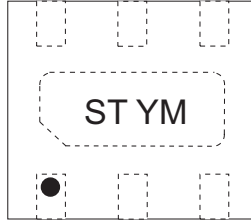
| Characteristic                     | Symbol             | Min | Typ                   | Max                      | Unit | Test Condition  |
|------------------------------------|--------------------|-----|-----------------------|--------------------------|------|---|
| Reverse Breakdown Voltage (Note 1) | V <sub>(BR)R</sub> | 30  | —                     | —                        | V    | I <sub>R</sub> = 100μA  |
| Forward Voltage                    | V <sub>F</sub>     | —   | 260<br>—<br>—<br>525  | 300<br>360<br>460<br>570 | mV   | I <sub>F</sub> = 0.1mA<br>I <sub>F</sub> = 1.0mA<br>I <sub>F</sub> = 10mA<br>I <sub>F</sub> = 30mA        |
| Reverse Current (Note 1)           | I <sub>R</sub>     | —   | 25<br>30<br>35<br>100 | 125<br>150<br>500<br>700 | nA   | V <sub>R</sub> = 1V<br>V <sub>R</sub> = 2V<br>V <sub>R</sub> = 5V<br>V <sub>R</sub> = 30V                 |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | —                     | 5.0                      | ns   | I <sub>F</sub> = I <sub>R</sub> = 10mA,<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

Notes: 1. Short duration test pulse used to minimize self-heating effect.  
2. No purposefully added lead.  
3. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

**Ordering Information**

|                           |                               |                                     |
|---------------------------|-------------------------------|-------------------------------------|
| <b>Device</b><br>SDM6CC-7 | <b>Packaging</b><br>DFN1616-6 | <b>Shipping</b><br>3000/Tape & Reel |
|---------------------------|-------------------------------|-------------------------------------|

**Marking Information**

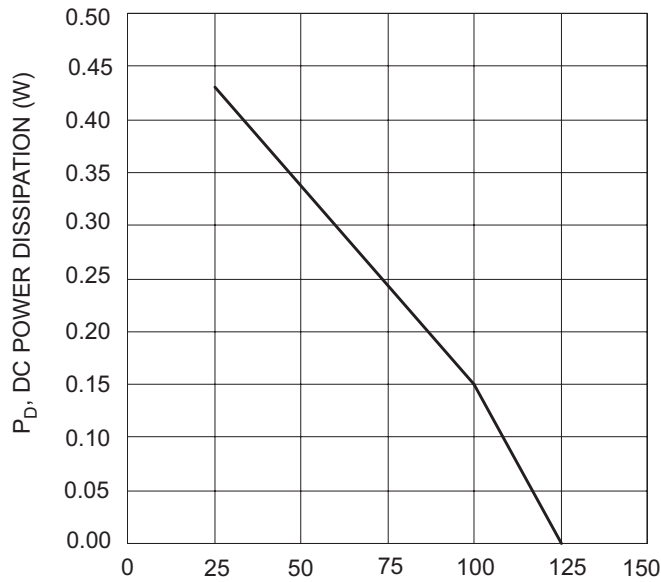


ST = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: T = 2006  
 M = Month ex: 9 = September

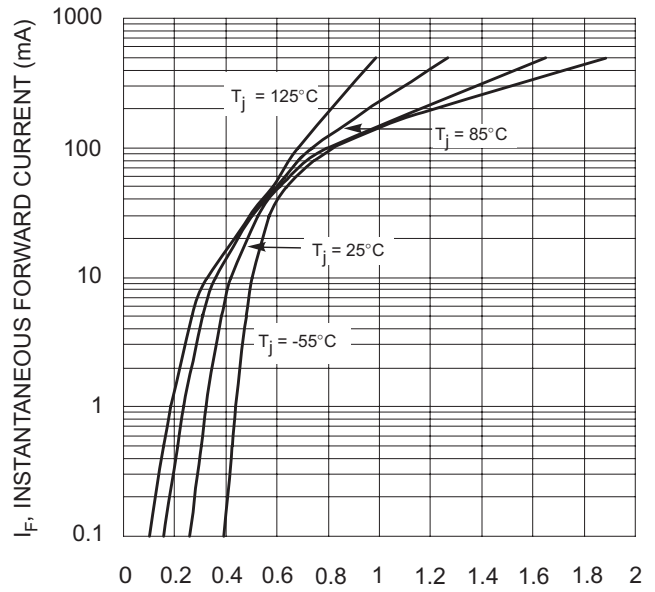
Date Code Key

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Year</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> |
| <b>Code</b> | T           | U           | V           | W           | X           | Y           | Z           |

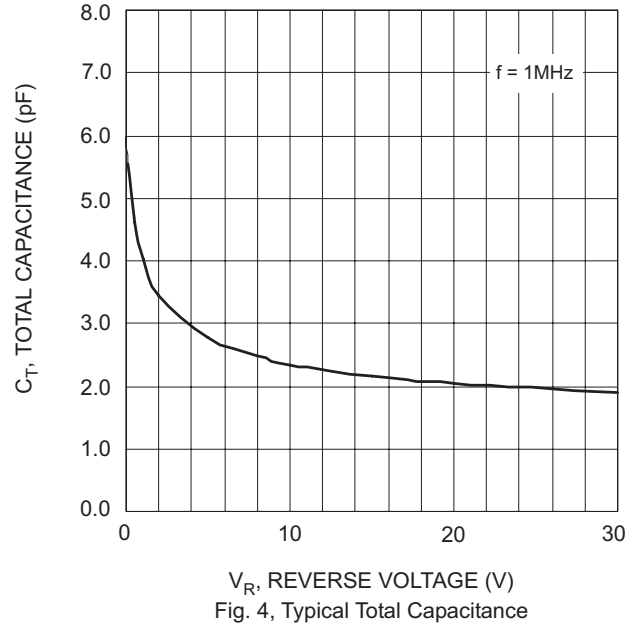
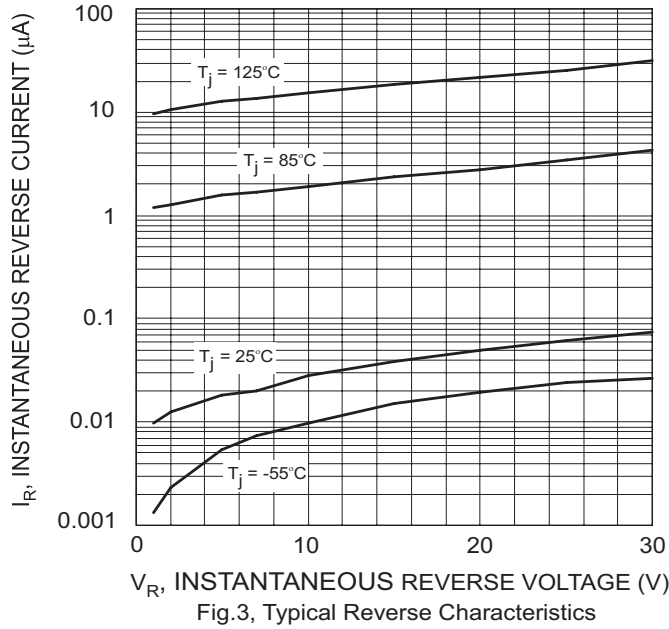
|              |            |            |            |            |            |            |            |            |            |            |            |            |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>Month</b> | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> | <b>Sep</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| <b>Code</b>  | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | O          | N          | D          |



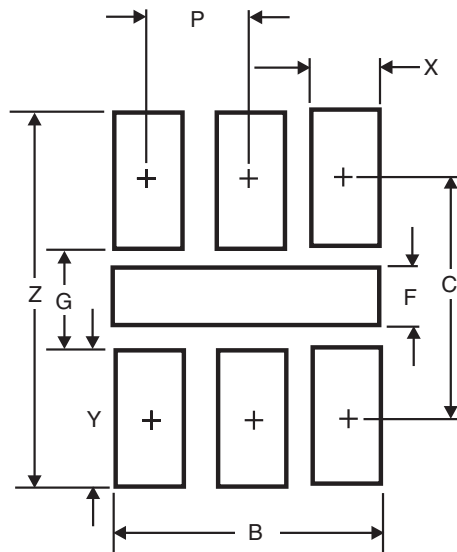
$T_A$ , AMBIENT TEMPERATURE (°C)  
 Fig. 1, Power Dissipation Derating



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
 Fig. 2, Typical Forward Characteristics



**Suggested Pad Layout**



| Dimensions |        |             |
|------------|--------|-------------|
| Dim        | Inches | Millimeters |
| B          | .051   | 1.30        |
| C          | .060   | 1.52        |
| P          | .020   | 0.50        |
| F          | .018   | 0.45        |
| G          | .035   | 0.89        |
| X          | .012   | 0.30        |
| Y          | .025   | 0.63        |
| Z          | .085   | 2.15        |

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