

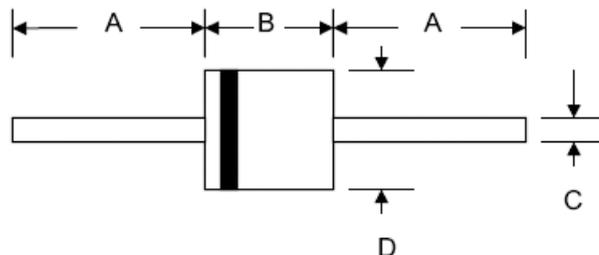


Technical Data  
Data Sheet N0450, Rev. -

*Green Products*

**Features**

- Diffused Junction
- Low Forward Voltage Drop
- High Current Capability
- High Reliability
- High Surge Current Capability
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



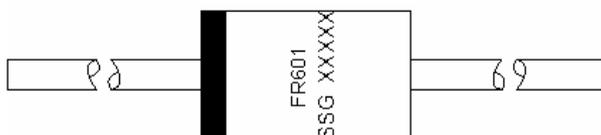
**Mechanical Data**

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 2.1 grams (approx.)
- Mounting Position: Any
- Marking: Type Number
- Epoxy: UL 94V-O rate flame retardant

| R-6 |       |      |         |       |
|-----|-------|------|---------|-------|
| Dim | Min   | Max  | Min     | Max   |
| A   | 25.4  | —    | 1.000   | —     |
| B   | 8.60  | 9.10 | 0.338   | 0.358 |
| C   | 1.20  | 1.30 | 0.047   | 0.051 |
| D   | 8.60  | 9.10 | 0.338   | 0.358 |
|     | In mm |      | In inch |       |

**Marking Diagram:**

Where XXXXX is YYWWL



FR601 = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information**

| Device      | Package          | Shipping      |
|-------------|------------------|---------------|
| FR601-FR607 | R-6<br>(Pb-Free) | 500pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.



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

Single Phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic                                                                                                        | Symbol                                                 | FR601       | FR602 | FR603 | FR604 | FR605 | FR606 | FR607 | 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> | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V    |
| RMS Reverse Voltage                                                                                                   | V <sub>R(RMS)</sub>                                    | 35          | 70    | 140   | 280   | 420   | 560   | 700   | V    |
| Average Rectified Output Current<br>(Note 1) @T <sub>A</sub> = 55°C                                                   | I <sub>O</sub>                                         | 6.0         |       |       |       |       |       |       | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on<br>rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 200         |       |       |       |       |       |       | A    |
| Forward Voltage @I <sub>F</sub> = 6.0A                                                                                | V <sub>FM</sub>                                        | 1.2         |       |       |       |       |       |       | V    |
| Peak Reverse Current @T <sub>A</sub> = 25°C<br>At Rated DC Blocking Voltage @T <sub>A</sub> = 100°C                   | I <sub>RM</sub>                                        | 10<br>200   |       |       |       |       |       |       | μA   |
| Reverse Recovery Time (Note 2)                                                                                        | t <sub>rr</sub>                                        | 150         |       |       |       | 250   | 500   |       | nS   |
| Typical Junction Capacitance (Note 3)                                                                                 | C <sub>j</sub>                                         | 100         |       |       |       |       |       |       | pF   |
| Operating Temperature Range                                                                                           | T <sub>j</sub>                                         | -65 to +125 |       |       |       |       |       |       | °C   |
| Storage Temperature Range                                                                                             | T <sub>STG</sub>                                       | -65 to +150 |       |       |       |       |       |       | °C   |

**\*Glass passivated forms are available upon request**

Note: 1. Leads maintained at ambient temperature at a distance of 9.5mm from the case

2. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A. See figure 5.

3. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.



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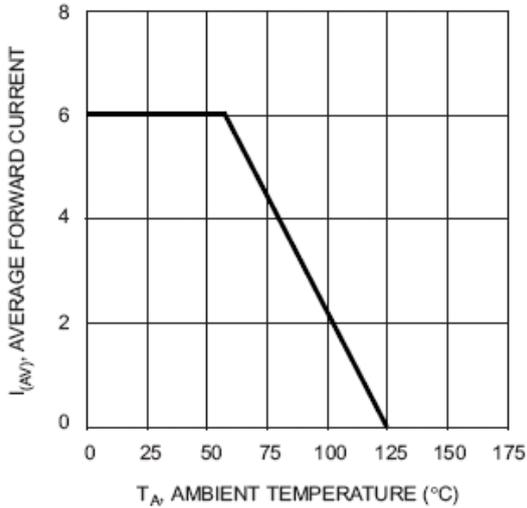


Fig. 1, Typical Forward Current Derating Curve

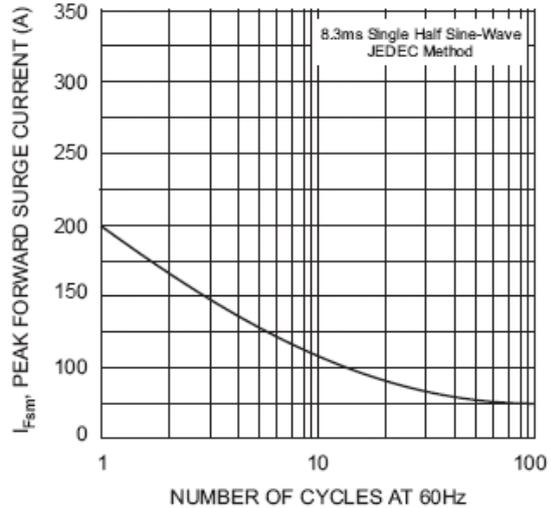


Fig. 2 Max Non-Repetitive Peak Surge Current

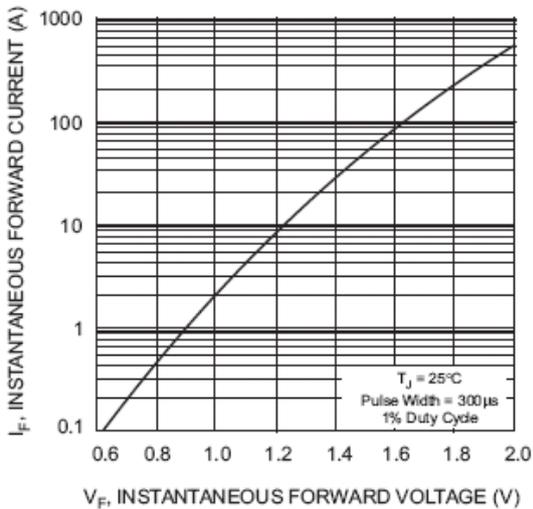


Fig. 3, Typical Instantaneous Forward Characteristics

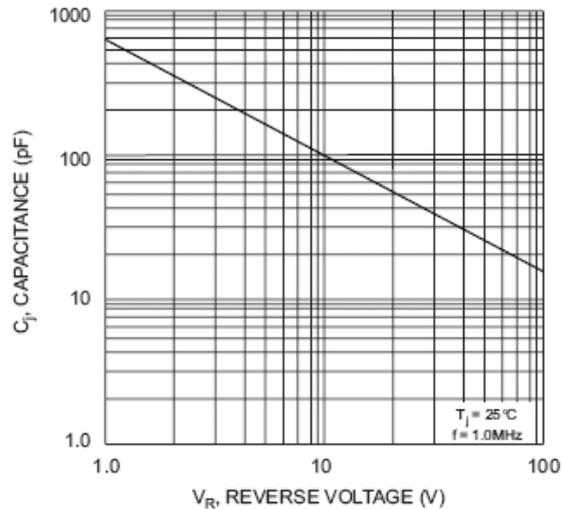
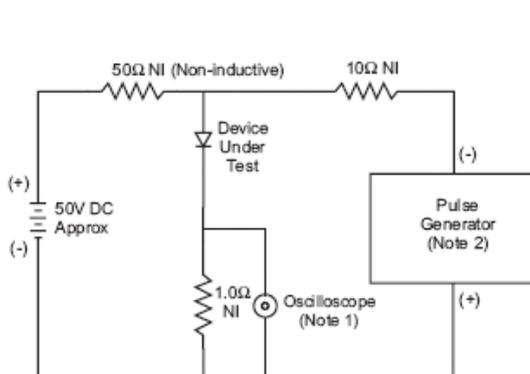
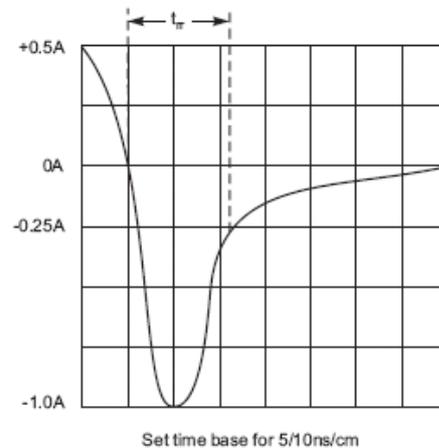


Fig. 4 Typical Junction Capacitance



Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit



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