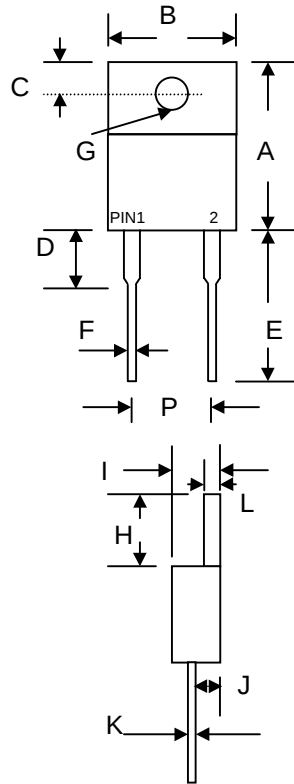


### Features

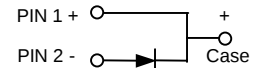
- Glass Passivated Die Construction
- Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-O

### Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 2.24 grams (approx.)
- Mounting Position: Any
- Marking: Type Number



| TO-220A              |        |        |
|----------------------|--------|--------|
| Dim                  | Min    | Max    |
| A                    | 14.9   | 15.1   |
| B                    | —      | 10.5   |
| C                    | 2.62   | 2.87   |
| D                    | 3.56   | 4.06   |
| E                    | 13.46  | 14.22  |
| F                    | 0.68   | 0.94   |
| G                    | 3.74 Ø | 3.91 Ø |
| H                    | 5.84   | 6.86   |
| I                    | 4.44   | 4.70   |
| J                    | 2.54   | 2.79   |
| K                    | 0.35   | 0.64   |
| L                    | 1.14   | 1.40   |
| P                    | 4.95   | 5.20   |
| All Dimensions in mm |        |        |



### 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                                                 | FR 801G     | FR 802G | FR 803G | FR 804G | FR 805G | FR 806G | FR 807G | 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 @T <sub>C</sub> = 100°C                                                              | I <sub>O</sub>                                         | 8.0         |         |         |         |         |         |         | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single half sine-wave superimposed on rated load<br>(JEDEC Method) | I <sub>FSM</sub>                                       | 150         |         |         |         |         |         |         | A    |
| Forward Voltage @I <sub>F</sub> = 8.0A                                                                                | V <sub>FM</sub>                                        | 1.3         |         |         |         |         |         |         | V    |
| Peak Reverse Current @T <sub>A</sub> = 25°C<br>At Rated DC Blocking Voltage @T <sub>A</sub> = 125°C                   | I <sub>RM</sub>                                        | 5.0<br>100  |         |         |         |         |         |         | μA   |
| Reverse Recovery Time (Note 1)                                                                                        | t <sub>rr</sub>                                        | 150         |         |         |         | 250     | 500     |         | nS   |
| Typical Junction Capacitance (Note 2)                                                                                 | C <sub>j</sub>                                         | 100         |         |         |         |         |         |         | pF   |
| Typical Thermal Resistance Junction to Case                                                                           | R <sub>θJC</sub>                                       | 3.0         |         |         |         |         |         |         | K/W  |
| Operating and Storage Temperature Range                                                                               | T <sub>j</sub> , T <sub>STG</sub>                      | -65 to +150 |         |         |         |         |         |         | °C   |

Note: 1. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A. See figure 5.  
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

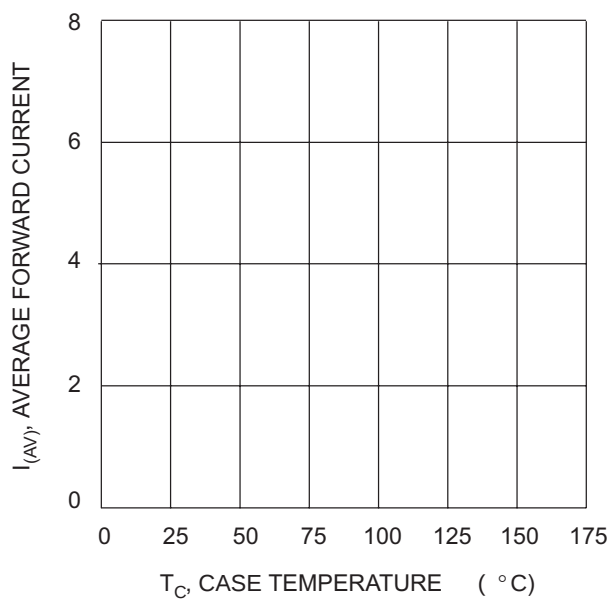


Fig. 1, Typical Forward Current Derating Curve

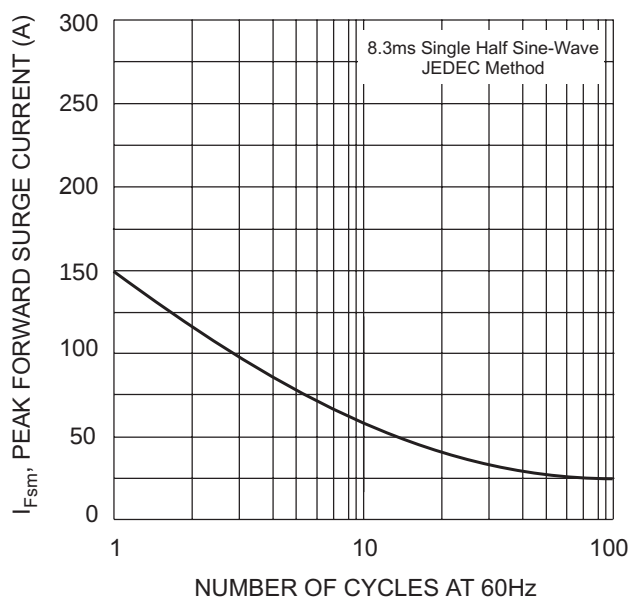


Fig. 2 Max Non-Repetitive Peak Surge Current

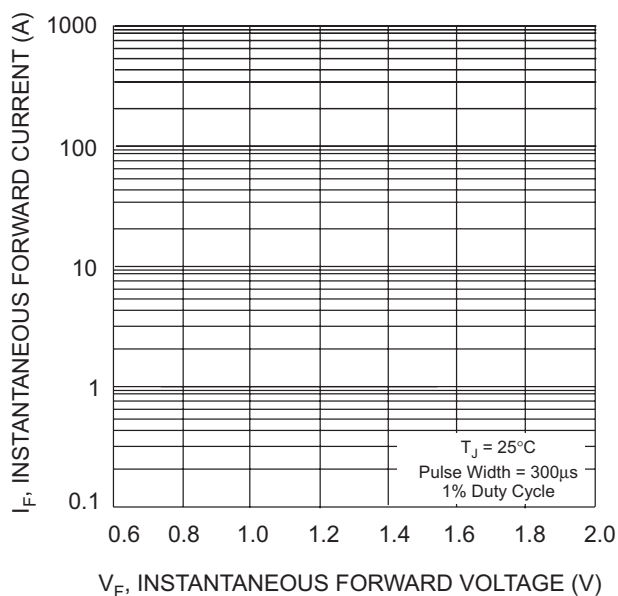


Fig. 3, Typical Instantaneous Forward Characteristics

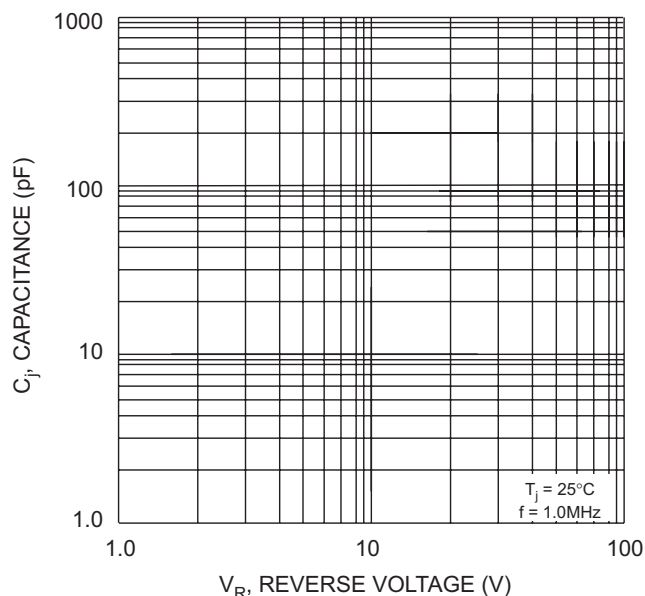
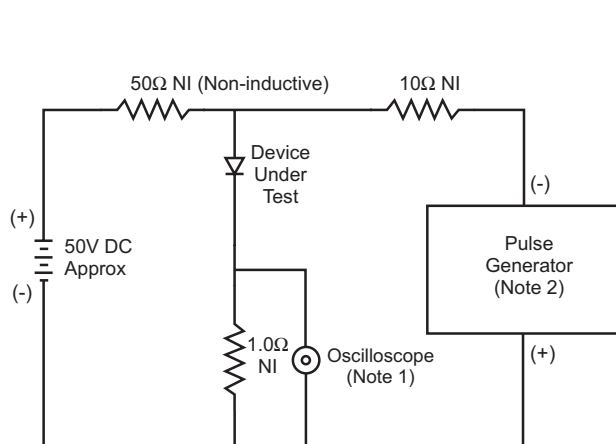


Fig. 4 Typical Junction Capacitance



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

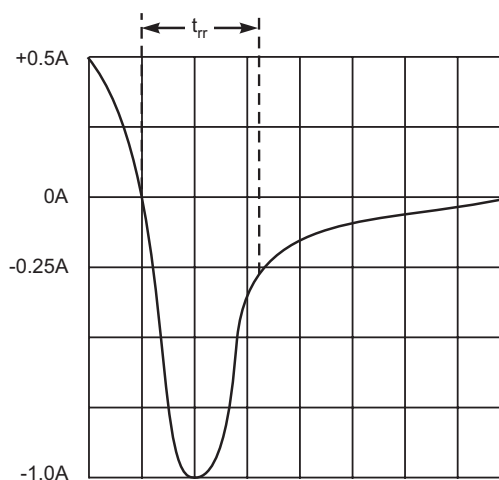


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| FR801G      | TO-220A      | 50 Units/Tube     |
| FR802G      | TO-220A      | 50 Units/Tube     |
| FR803G      | TO-220A      | 50 Units/Tube     |
| FR804G      | TO-220A      | 50 Units/Tube     |
| FR805G      | TO-220A      | 50 Units/Tube     |
| FR806G      | TO-220A      | 50 Units/Tube     |
| FR807G      | TO-220A      | 50 Units/Tube     |

Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.

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