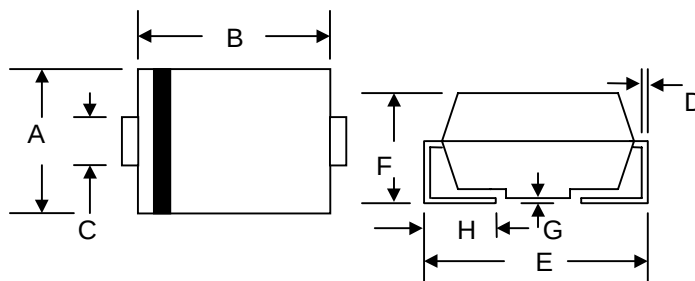


## 3.0A SURFACE MOUNT GLASS PASSIVATED FAST RECOVERY DIODE

### Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Surge Overload Rating to 100A Peak
- Low Power Loss
- Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



### Mechanical Data

- Case: SMC/DO-214AB, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.21 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 4**

| SMC/DO-214AB         |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 5.59  | 6.22  |
| B                    | 6.60  | 7.11  |
| C                    | 2.75  | 3.25  |
| D                    | 0.152 | 0.305 |
| E                    | 7.75  | 8.13  |
| F                    | 2.00  | 2.62  |
| G                    | 0.051 | 0.203 |
| H                    | 0.76  | 1.27  |
| All Dimensions in mm |       |       |

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

| Characteristic                                                                                                     | Symbol                                                 | FR3A        | FR3B | FR3D | FR3G | FR3J | FR3K | 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  | V    |
| RMS Reverse Voltage                                                                                                | V <sub>R(RMS)</sub>                                    | 35          | 70   | 140  | 280  | 420  | 560  | V    |
| Average Rectified Output Current @T <sub>L</sub> = 75°C                                                            | I <sub>O</sub>                                         | 3.0         |      |      |      |      |      | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 100         |      |      |      |      |      | A    |
| Forward Voltage @I <sub>F</sub> = 3.0A                                                                             | V <sub>FM</sub>                                        | 1.30        |      |      |      |      |      | 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>                                        | 10<br>350   |      |      |      |      |      | μA   |
| Reverse Recovery Time (Note 1)                                                                                     | t <sub>rr</sub>                                        | 150         |      |      |      | 250  | 500  | nS   |
| Typical Junction Capacitance (Note 2)                                                                              | C <sub>j</sub>                                         | 60          |      |      |      |      |      | pF   |
| Typical Thermal Resistance (Note 3)                                                                                | R <sub>θJL</sub>                                       | 15          |      |      |      |      |      | °C/W |
| Operating and Storage Temperature Range                                                                            | T <sub>j</sub> , T <sub>STG</sub>                      | -50 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 4.0 V DC.  
 3. Mounted on P.C. Board with 8.0mm<sup>2</sup> land area.

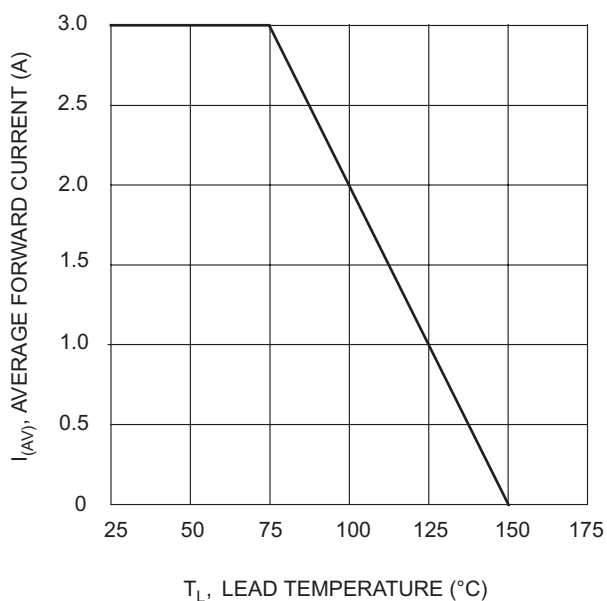


Fig. 1 Forward Current Derating Curve

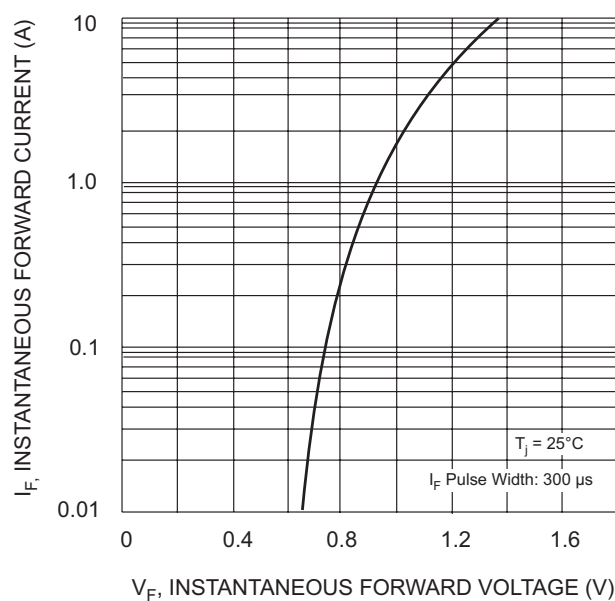


Fig. 2 Typical Forward Characteristics

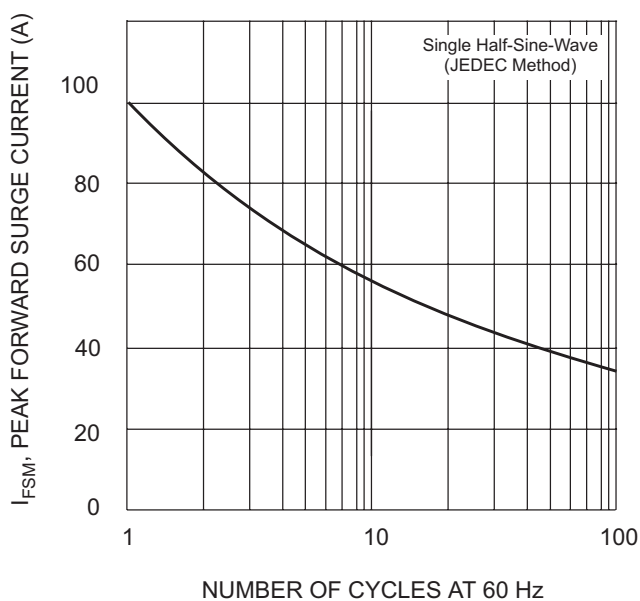


Fig. 3 Forward Surge Current Derating Curve

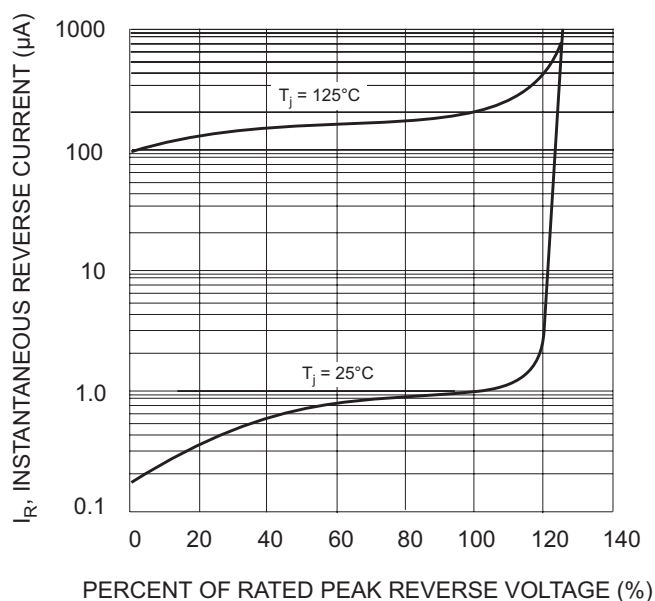
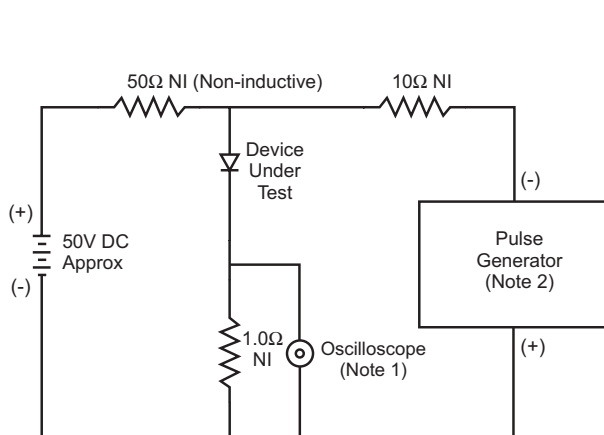
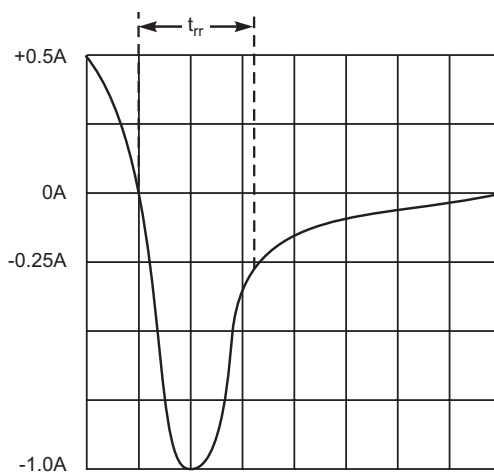


Fig. 4 Typical Reverse Characteristics



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .



Set time base for 10ns/cm

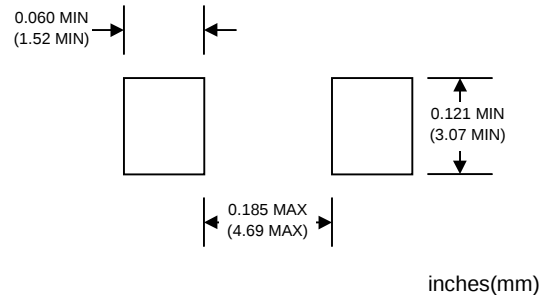
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## MARKING INFORMATION



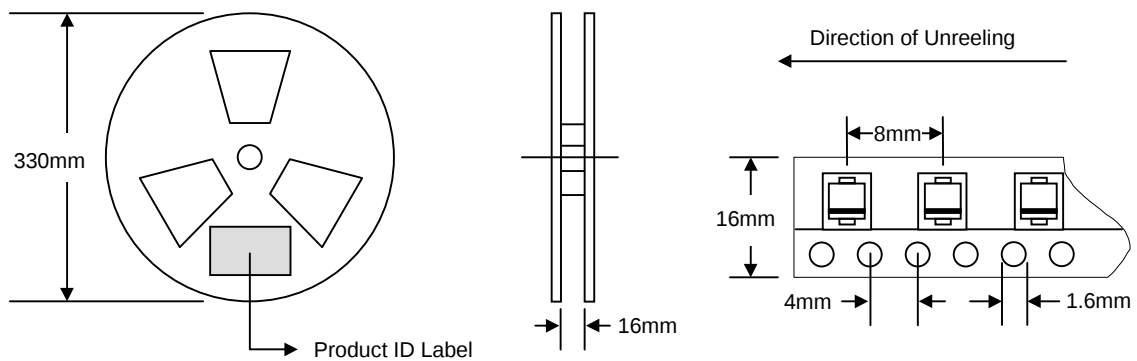
Cathode = Polarity Band  
 WTE = Manufacturer's Logo  
 FR3x = Device Number  
 x = A, B, D, G, J or K

## RECOMMENDED FOOTPRINT



## PACKAGING INFORMATION

### TAPE & REEL



| Reel Diameter (mm) | Quantity (PCS) | Inner Box Size L x W x H (mm) | Quantity (PCS) | Carton Size L x W x H (mm) | Quantity (PCS) | Approx. Gross Weight (KG) |
|--------------------|----------------|-------------------------------|----------------|----------------------------|----------------|---------------------------|
| 330                | 3,000          | 340 x 337 x 45                | 6,000          | 370 x 370 x 420            | 48,000         | 19.0                      |

**Note:** 1. Paper reel, white or gray color.  
 2. Components are packed in accordance with EIA standard 481-1 and 481-2.

## ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| FR3A-T3     | SMC          | 3000/Tape & Reel  |
| FR3B-T3     | SMC          | 3000/Tape & Reel  |
| FR3D-T3     | SMC          | 3000/Tape & Reel  |
| FR3G-T3     | SMC          | 3000/Tape & Reel  |
| FR3J-T3     | SMC          | 3000/Tape & Reel  |
| FR3K-T3     | SMC          | 3000/Tape & Reel  |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, FR3A-T3-LF.**

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**WARNING:** DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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