

# FR2A THRU FR2K

## SURFACE MOUNT ULTRAFAST RECTIFIER

VOLTAGE - 50 to 800 Volts CURRENT - 2.0 Amperes

### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- High temperature soldering:  
260 °C/10 seconds at terminals

### MECHANICAL DATA

Case: JEDEC DO-214AA molded plastic

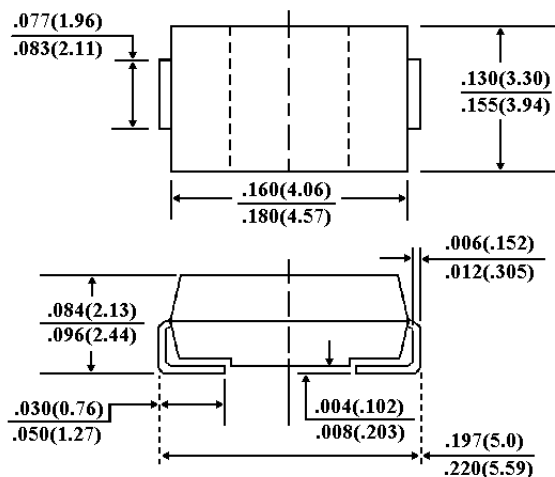
Terminals: Solder plated, solderable per  
MIL-STD-750, Method 2026

Polarity: Indicated by cathode band

Standard packaging: 12mm tape (EIA-481)

Weight: 0.003 ounce, 0.093 gram

### SMB/DO-214AA



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

Resistive or inductive load.

For capacitive load, derate current by 20%.

|   | SYMBOLS          | FR2A        | FR2B | FR2D | FR2G | FR2J | FR2K | UNITS |
|---|------------------|-------------|------|------|------|------|------|-------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$        | 50          | 100  | 200  | 400  | 600  | 800  | Volts |
| Maximum RMS Voltage   | $V_{RMS}$        | 35          | 70   | 140  | 280  | 420  | 560  | Volts |
| Maximum DC Blocking Voltage   | $V_{DC}$         | 50          | 100  | 200  | 400  | 600  | 800  | Volts |
| Maximum Average Forward Rectified Current, at $T_L=90$ °C                                       | $I_{(AV)}$       | 2.0         |      |      |      |      |      | Amps  |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load(JEDEC method) | $I_{FSM}$        | 50.0        |      |      |      |      |      | Amps  |
| Maximum Instantaneous Forward Voltage at 2.0A   | $V_F$            | 1.30        |      |      |      |      |      | Volts |
| Maximum DC Reverse Current $T_A=25$ °C  | $I_R$            | 5.0         |      |      |      |      |      | µg A  |
| At Rated DC Blocking Voltage $T_A=125$ °C   |                  | 200         |      |      |      |      |      |       |
| Maximum Reverse Recovery Time (Note 1) $T_J=25$ °C  | $T_{RR}$         | 150         |      |      |      | 250  | 500  | nS    |
| Typical Junction capacitance (Note 2)   | $C_J$            | 40          |      |      |      |      |      | pF    |
| Maximum Thermal Resistance (Note 3)   | $R_{\theta KJL}$ | 20.0        |      |      |      |      |      | °C/W  |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$   | -50 to +150 |      |      |      |      |      | °C    |

### NOTES:

1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{rr}=0.25A$
2. Measured at 1 MHz and Applied reverse voltage of 4.0 volts

# RATING AND CHARACTERISTIC CURVES

## FR2A THRU FR2K

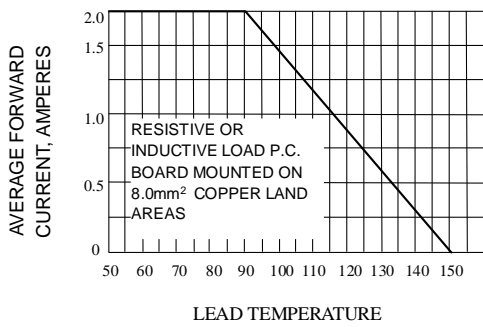


Fig. 1-FORWARD CURRENT DERATING CURVE

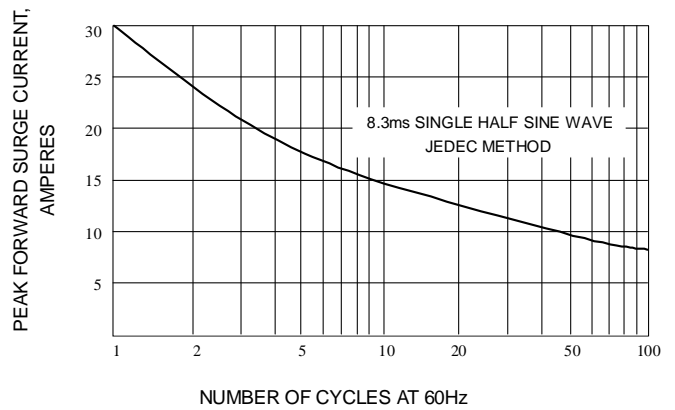


Fig. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

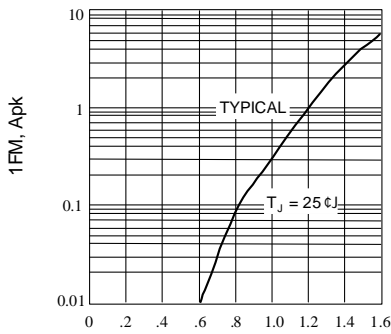


Fig. 3-FORWARD CHARACTERISTICS

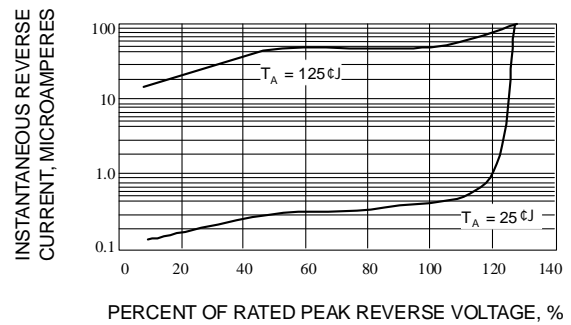


Fig. 4-TYPICAL REVERSE CHARACTERISTICS

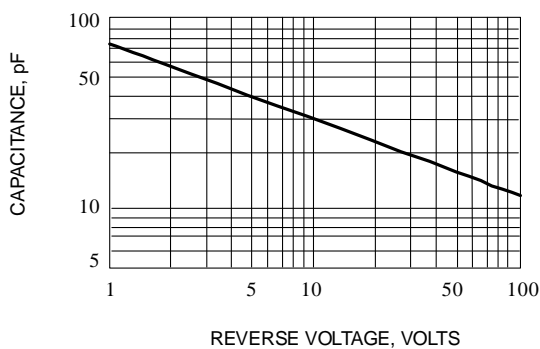
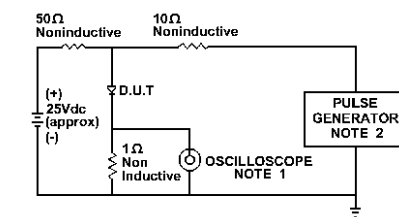


Fig. 5-TYPICAL JUNCTION CHARACTERISTICS



NOTE: 1. Rise Time = 7ns max.  
 Input Impedance = 1 megohm. 22pF  
 2. Rise Time = 10ns max.  
 Source Impedance = 50 Ohms

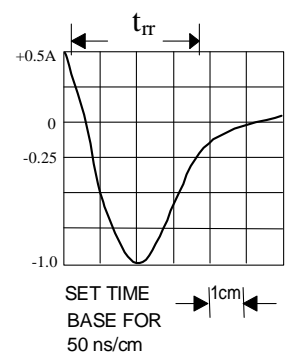


Fig. 6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM