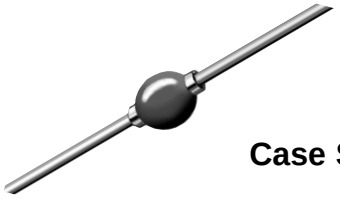
GENERAL SEMICONDUCTOR®

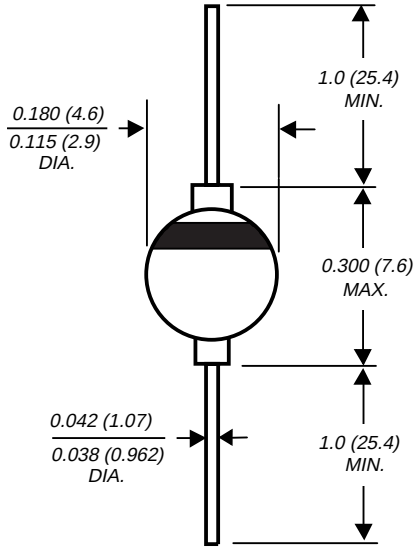
# FE6A thru FE6D

## Glass Passivated Ultrafast Rectifier

**Reverse Voltage** 50 to 200 V
**Forward Current** 6.0 A



**Case Style G4**




*Dimensions in inches and (millimeters)*

**Brazed lead assembly is covered by Patent No. 3,390,306*

Patented*

### Features

- High temperature metallurgically bonded construction
- Cavity-free glass passivated junction
- Superfast recovery time for high efficiency
- Low forward voltage, high current capability
- Capable of meeting environmental standards of MIL-S-19500
- Hermetically sealed package
- Low leakage current
- High surge current capability
- High temperature soldering guaranteed: 350°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### Mechanical Data

**Case:** Solid glass body
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026
**Polarity:** Color band denotes cathode end
**Mounting Position:** Any
**Weight:** 0.037 ounce, 1.04 gram

### Maximum Ratings and Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

| | SYMBOLS | FE6A | FE6B | FE6C | FE6D | UNITS |
|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | V |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_L$=55°C | $I_{F(AV)}$ | 6.0 | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 135 | | | | A |
| Typical thermal resistance (NOTE 1, 2) | $R_{\Theta JA}$<br>$R_{\Theta JL}$ | 55<br>18 | | | | °C/W |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -65 to +175 | | | | °C |

### Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

| | SYMBOLS | FE6A | FE6B | FE6C | FE6D | UNITS |
|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage at 6.0A | $V_F$ | 0.975 | | | | V |
| Maximum DC reverse current $T_A$=25°C<br>at rated DC blocking voltage $T_A$=100°C | $I_R$ | 5.0<br>50 | | | | µA |
| Maximum reverse recovery time at $I_F$=0.5A, $I_R$=1.0A, $I_{rr}$=0.25A | $t_{rr}$ | 35 | | | | ns |
| Typical junction capacitance at 4V, 1MHz | $C_J$ | 100 | | | | pF |

**NOTES:**
(1) Thermal resistance from junction to lead 0.375" (9.5mm) lead length with both leads attached to heatsinks.
(2) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length and mounted on P.C.B.

**10/18/99**

# FE6A thru FE6D

## Glass Passivated Ultrafast Rectifier

## Ratings and Characteristic Curves ($T_A$=25°C unless otherwise noted.)

**FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE**

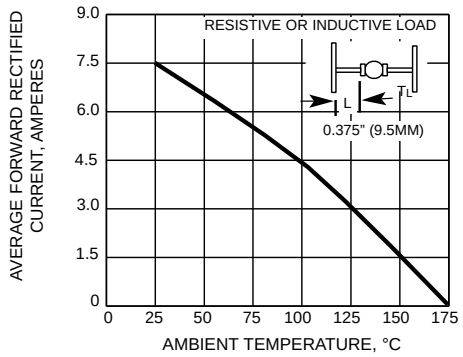



**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

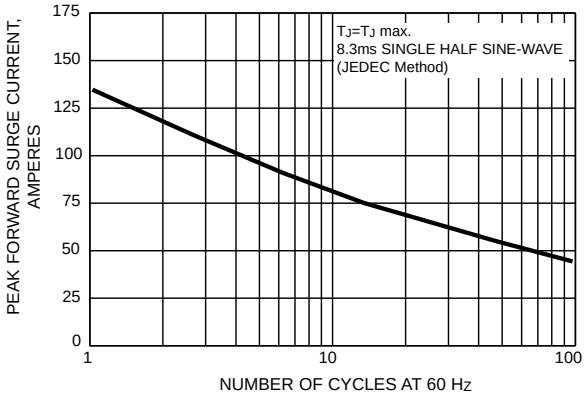



**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

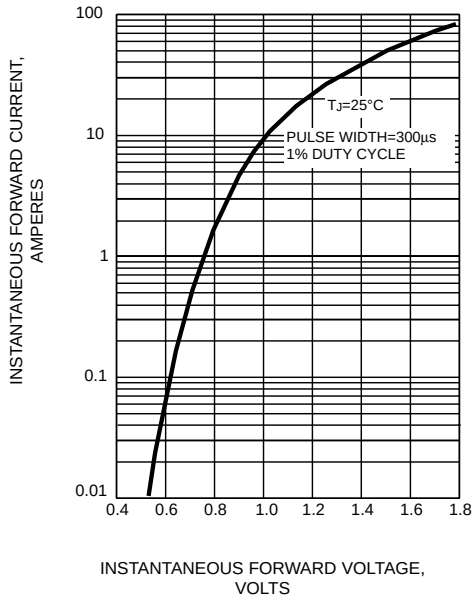



**FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS**

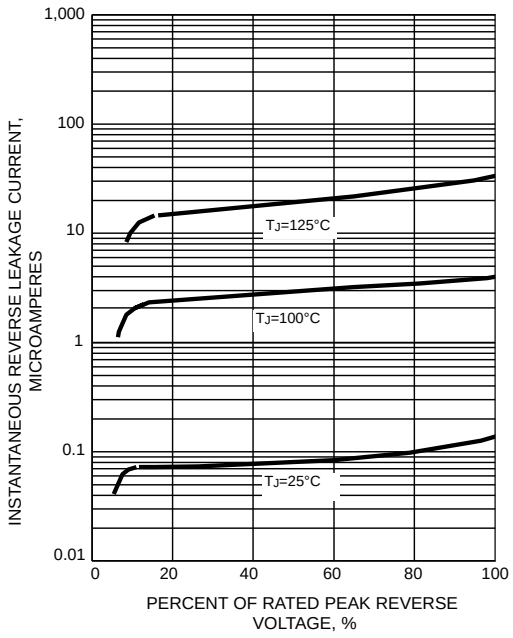



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**