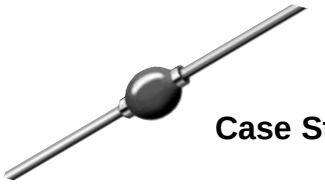
GENERAL SEMICONDUCTOR®

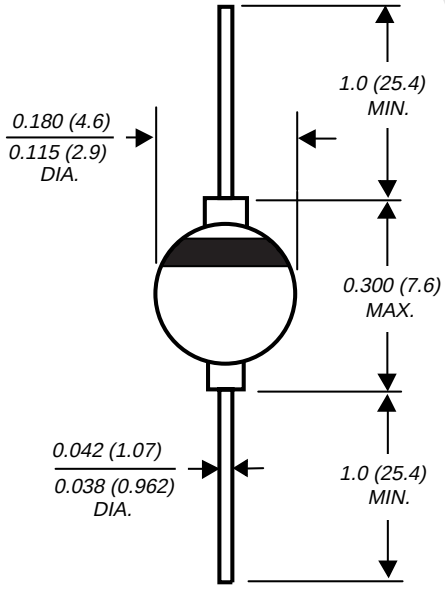
FE3A thru FE3D

Glass Passivated Ultrafast Rectifier

Reverse Voltage 50 to 200V
Forward Current 3.0A



Case Style G4



Dimensions in inches and (millimeters)

**Brazed-lead assembly is covered by Patent No. 3,930,306*

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 grams

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	FE3A	FE3B	FE3	FE3D	Unit
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_A = 55°C	$I_{F(AV)}$	3.0				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	125				A
Typical thermal resistance (Note 1,2)	$R_{\Theta JA}$ $R_{\Theta JL}$	55 20				°C/W
Operating junction and storage temperature range	T_J, T_{STG}	–65 to +175				°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	FE3A	FE3B	FE3	FE3D	Unit
Maximum instantaneous forward voltage at 3.0A	V_F	0.95				V
Maximum DC reverse current at rated DC blocking voltage T_A = 25°C T_A = 100°C	I_R	5.0 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 juction to ambient at 0.375" (9.5mm) lead length and mounted on P.C.B. with 0.5 x 0.5 (12 x 12mm) copper pads.
(2) Thermal resistance from junction to lead at 0.375" (9.5mm) lead length with both leads attached to heatsinks.

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FE3A thru FE3D

Glass Passivated Ultrafast Rectifier

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

FIG. 1 - MAXIMUM FORWARD CURRENT DERATING

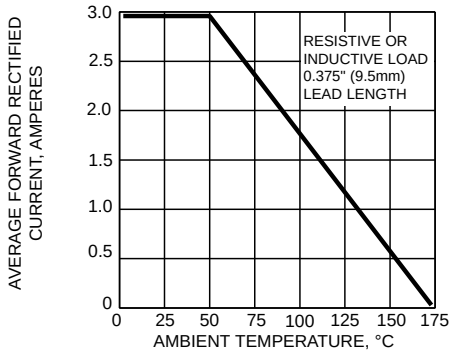

FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

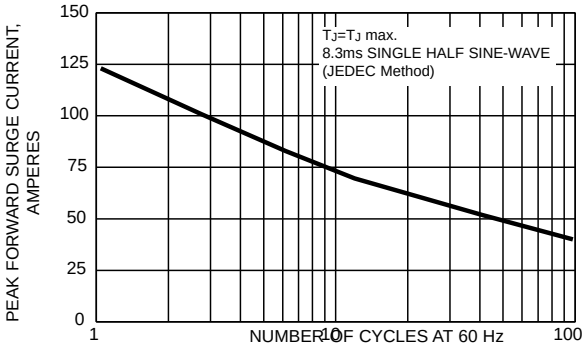

FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

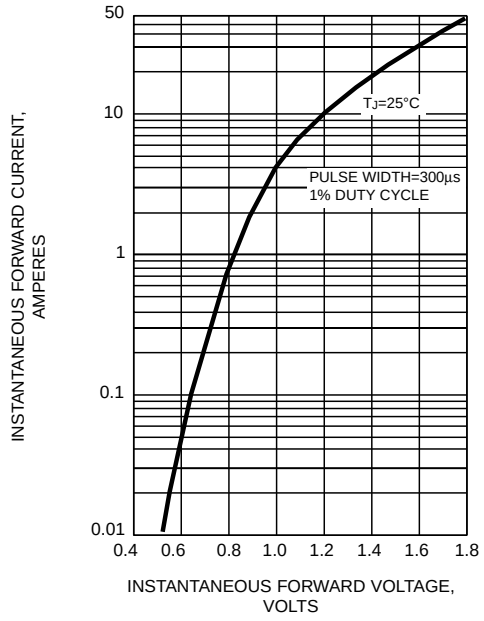

FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

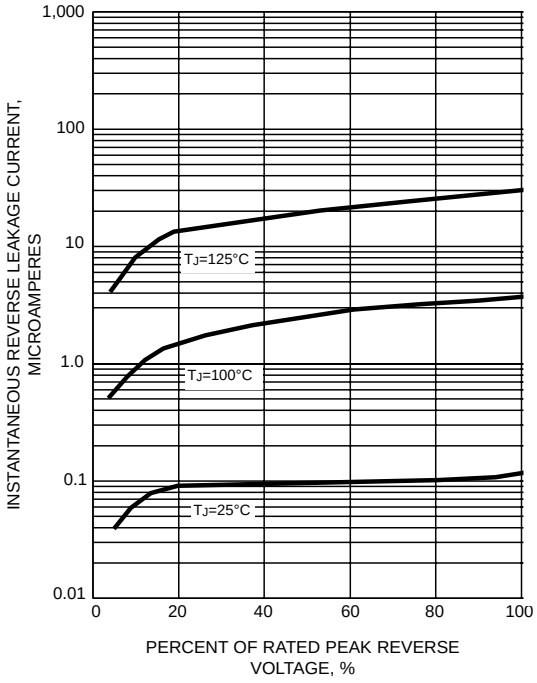

FIG. 5 - TYPICAL JUNCTION CAPACITANCE