

# Silicon Diode

## **FE5B**

Fast Efficient Rectifier

100V / 5A

# DATASHEET

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OEM – General Semiconductor

Source: General Semiconductor Databook 1998

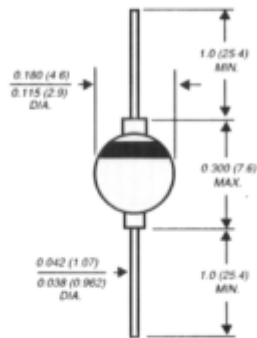
# FE5A THRU FE5D

## GLASS PASSIVATED FAST EFFICIENT RECTIFIER

Reverse Voltage - 50 to 200 Volts    Forward Current - 5.0 Amperes

**PATENTED \***

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
- Glass passivated cavity-free junction
- Super fast 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:** 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 ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

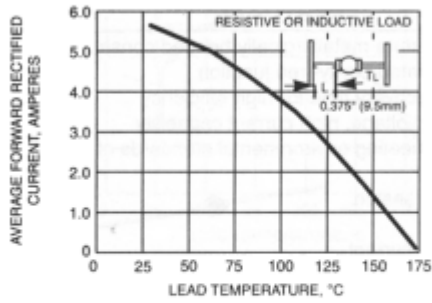
	SYMBOLS	FE5A	FE5B	FE5C	FE5D	UNITS
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	Volts
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	Volts
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	Volts
Maximum average forward rectified current 0.375" (9.5mm) lead length at T <sub>L</sub> =55°C	I <sub>(AV)</sub>	5.0				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	135.0				Amps
Maximum instantaneous forward voltage at 5.0A	V <sub>F</sub>	0.95				Volts
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5.0 50.0				μA
		T <sub>A</sub> =25°C T <sub>A</sub> =100°C				
Maximum reverse recovery time (NOTE 1)	t <sub>rr</sub>	35.0				ns
Typical junction capacitance (NOTE 2)	C <sub>J</sub>	100.0				pF
Typical thermal resistance (NOTE 3, 4)	R <sub>θJA</sub> R <sub>θJL</sub>	55.0 20.0				°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175				°C

**NOTES:**

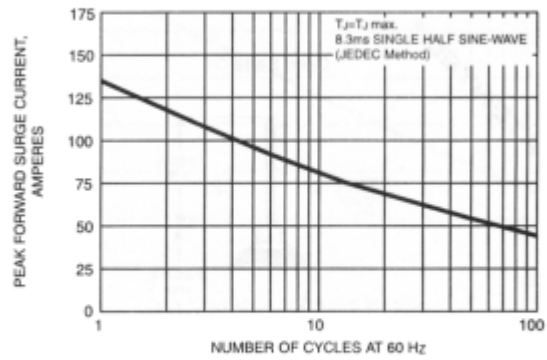
- (1) Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 V<sub>DC</sub>
- (3) Thermal resistance from junction to lead at 0.375" (9.5mm) lead length with both leads attached to heatsinks
- (4) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length and mounted on P.C.B.

**RATINGS AND CHARACTERISTIC CURVES FE5A THRU FE5D**

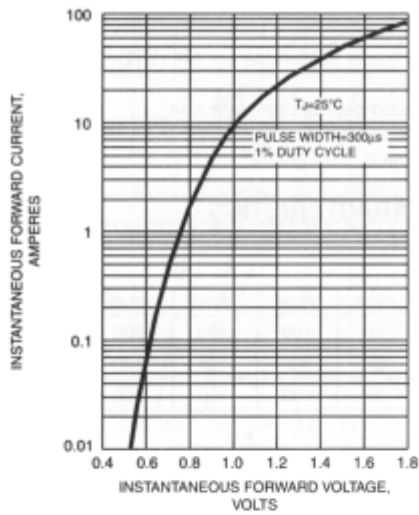
**FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE**



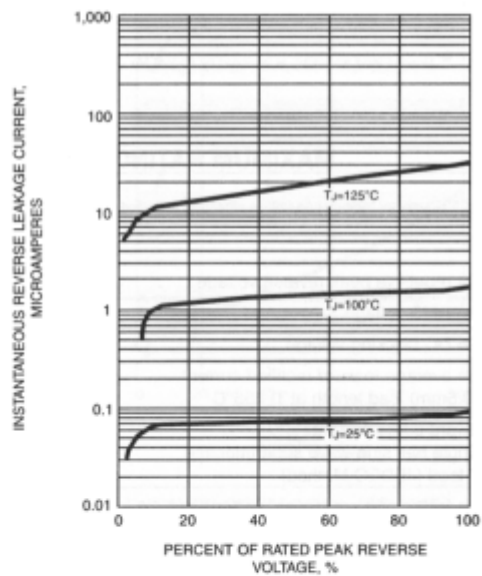
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



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



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



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

