

# Silicon Diode

## **FES8AT**

Fast Efficient Rectifier

50V / 8A

# DATASHEET

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OEM – General Semiconductor

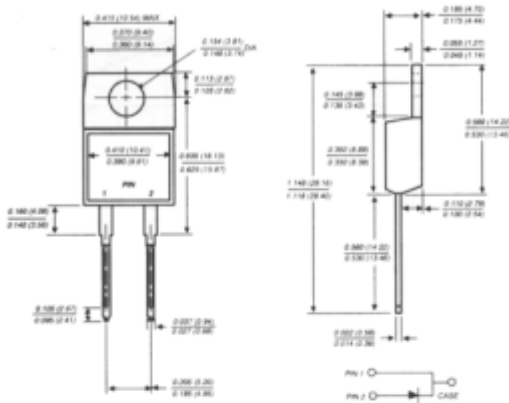
Source: General Semiconductor Databook 1998

# FES8AT THRU FES8JT

## FAST EFFICIENT PLASTIC RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 8.0 Amperes

### TO-220AC



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Glass passivated chip junction
- ◆ Low leakage, high voltage
- ◆ High surge current capability
- ◆ Superfast recovery time, for high efficiency
- ◆ High temperature soldering guaranteed: 250°C, 0.16" (4.06mm) from case for 10 seconds



### MECHANICAL DATA

**Case:** JEDEC TO-220AC fully overmolded plastic body over passivated chip  
**Terminals:** Plated lead solderable per MIL-STD-750, Method 2026  
**Polarity:** As marked  
**Mounting Position:** Any  
**Mounting Torque:** 5 in. - lbs. max.  
**Weight:** 0.064 ounce, 1.81 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

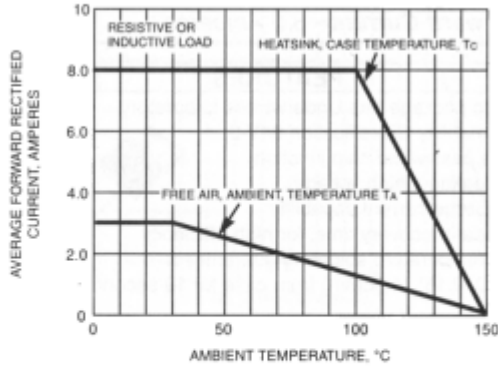
	SYMBOLS	FES 8AT	FES 8BT	FES 8CT	FES 8DT	FES 8FT	FES 8GT	FES 8HT	FES 8JT	UNITS
Maximum recurrent peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	Volts
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	Volts
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	Volts
Maximum average forward rectified current at T <sub>C</sub> =100°C	I <sub>(AV)</sub>	8.0								Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	125.0								Amps
Maximum instantaneous forward voltage at 8.0A	V <sub>F</sub>	0.95		1.3		1.5				Volts
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	10.0		500.0						µA
Maximum reverse recovery time (NOTE 1)	t <sub>rr</sub>	35.0		50.0						ns
Typical junction capacitance (NOTE 2)	C <sub>J</sub>	85.0		60.0						pF
Typical thermal resistance (NOTE 3)	R <sub>θJA</sub>	15.0								°C/W
(NOTE 4)	R <sub>θJC</sub>	2.2								
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150								°C

**NOTES:**

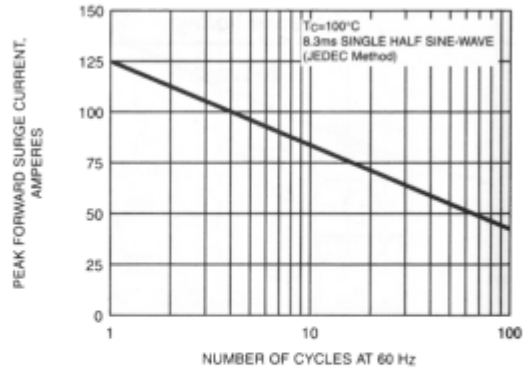
- (1) Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (3) Thermal resistance from junction to ambient in free air, no heatsink
- (4) Thermal resistance from junction to case mounted on heatsink

**RATINGS AND CHARACTERISTIC CURVES FES8AT THRU FES8JT**

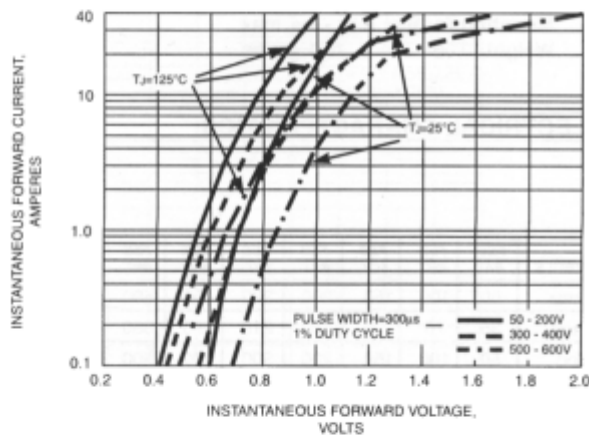
**FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVES**



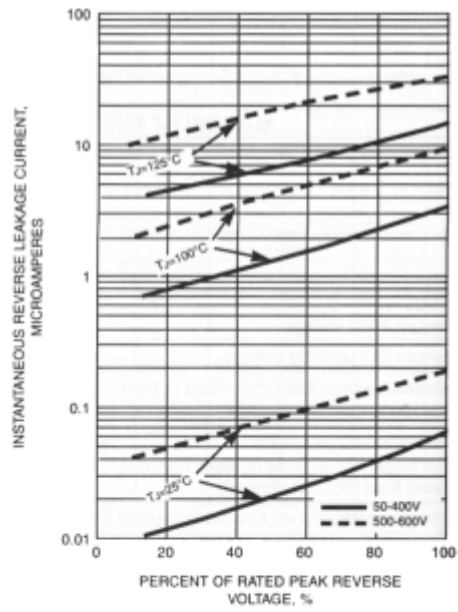
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



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



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



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

