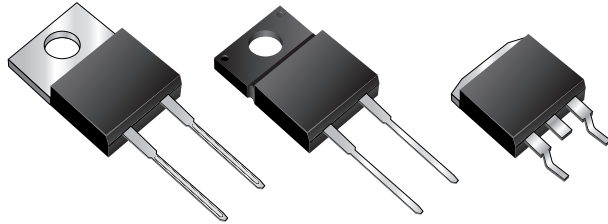




# FES8JT, FESF8JT, FESB8JT Series

Vishay Semiconductors  
formerly General Semiconductor

## Ultrafast Plastic Rectifiers

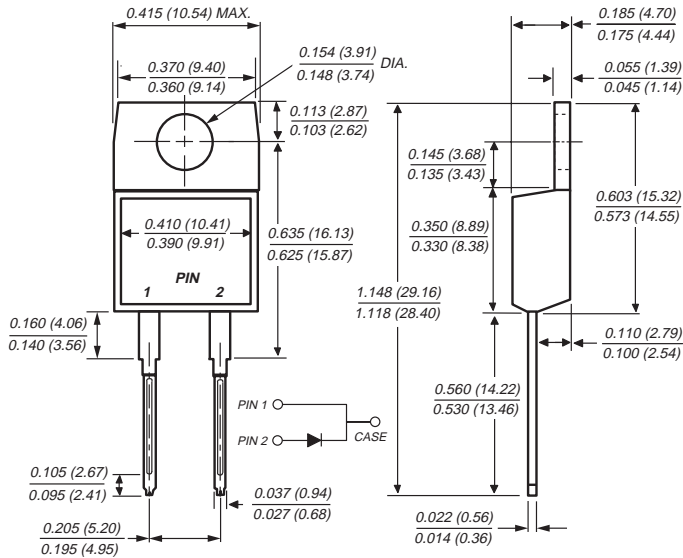


Reverse Voltage 50 to 600V

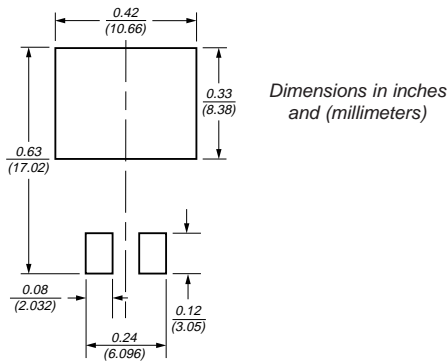
Forward Current 8.0 A

Reverse Recovery Time 35 to 50ns

### TO-220AC (FES8JT)

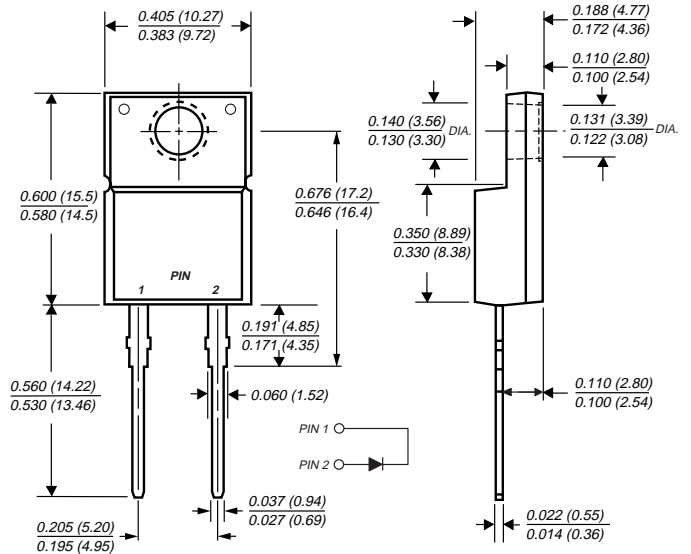


### Mounting Pad Layout TO-263AB

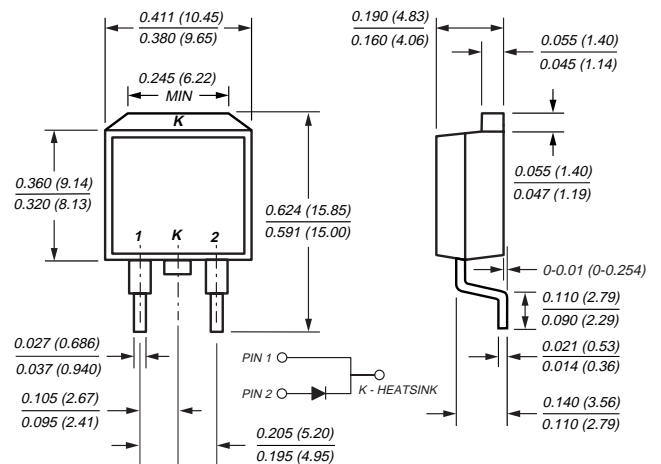


Dimensions in inches and millimeters

### ITO-220AC (FESF8JT)



### TO-263AB (FESB8JT)



## 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

## Mechanical Data

**Case:** JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed: 250°C, 0.16" (4.06mm) from case for 10 seconds

**Polarity:** As marked **Mounting Position:** Any

**Mounting Torque:** 10 in-lbs maximum

**Weight:** 0.08 oz., 2.24 g

# FES8JT, FESF8JT, FESB8JT Series

Vishay Semiconductors  
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## Maximum Ratings Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter  | Symbol                            | FES 8AT   | FES 8BT | FES 8CT | FES 8DT | FES 8FT | FES 8GT | FES 8HT | FES 8JT | Unit |
|--|-----------------------------------|---|---------|---------|---------|---------|---------|---------|---------|------|
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>                  | 50  | 100     | 150     | 200     | 300     | 400     | 500     | 600     | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>                  | 35  | 70      | 105     | 140     | 210     | 280     | 350     | 420     | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>                   | 50  | 100     | 150     | 200     | 300     | 400     | 500     | 600     | V    |
| Maximum average forward rectified current at T <sub>C</sub> =100°C   | I <sub>F(AV)</sub>                | 8.0   |         |         |         |         |         |         |         | A    |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T <sub>C</sub> =100°C | I <sub>FSM</sub>                  | 200   |         |         |         | 125     |         |         |         | A    |
| Operating storage and temperature range  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150   |         |         |         |         |         |         |         | °C   |
| RMS Isolation voltage (FESF type only) from terminals to heatsink with t=1.0 second, RH≤30%                                  | V <sub>ISOL</sub>                 | 4500 <sup>(1)</sup><br>3500 <sup>(2)</sup><br>1500 <sup>(3)</sup> |         |         |         |         |         |         |         | V    |

## Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter   | Symbol          | FES 8AT   | FES 8BT | FES 8CT | FES 8DT | FES 8FT | FES 8GT | FES 8HT | FES 8JT | Unit |
|---|-----------------|-----------|---------|---------|---------|---------|---------|---------|---------|------|
| Maximum instantaneous forward voltage @ 8.0A <sup>(4)</sup>   | V <sub>F</sub>  | 0.95      |         |         |         | 1.30    |         | 1.50    |         | V    |
| Maximum DC reverse current<br>at rated DC blocking voltage<br>T <sub>C</sub> =25°C<br>T <sub>C</sub> =100°C | I <sub>R</sub>  | 10<br>500 |         |         |         |         |         |         |         | μA   |
| Maximum reverse recovery time at<br>I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A      | t <sub>rr</sub> | 35        |         |         |         | 50      |         |         |         | ns   |
| Typical junction capacitance at 4V, 1MHz  | C <sub>J</sub>  | 85        |         |         |         |         |         | 50      |         | pF   |

## Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter  | Symbol           | FES | FESF | FESB | Unit |
|--|------------------|-----|------|------|------|
| Typical thermal resistance from junction to case | R <sub>θJC</sub> | 2.2 | 5.0  | 2.2  | °C/W |

### Notes:

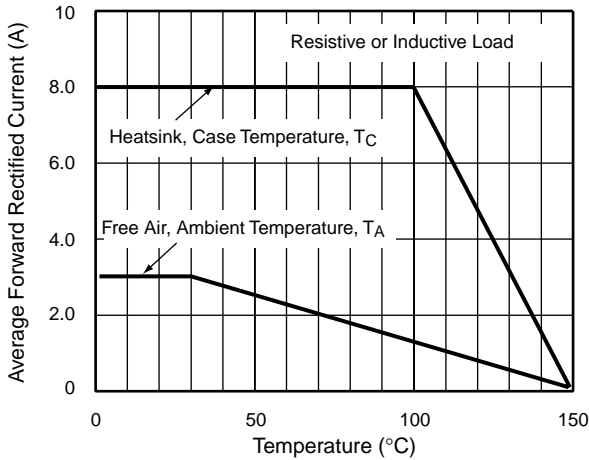
- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

## Ordering Information

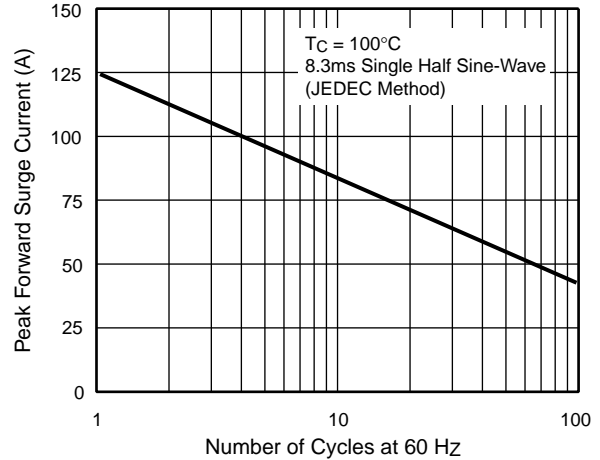
| Product              | Case      | Package Code   | Package Option   |
|----------------------|-----------|----------------|--|
| FES8AT thru FES8JT   | TO-220AC  | 45             | Anti-Static tube, 50/tube, 2K/carton   |
| FESF8AT thru FESF8JT | ITO-220AC | 45             | Anti-Static tube, 50/tube, 2K/carton   |
| FESB8AT thru FESB8JT | TO-263AB  | 31<br>45<br>81 | 13" reel, 800/reel, 4.8K/carton<br>Anti-Static tube, 50/tube, 2K/carton<br>Anti-Static 13" reel, 800/reel, 4.8K/carton |

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

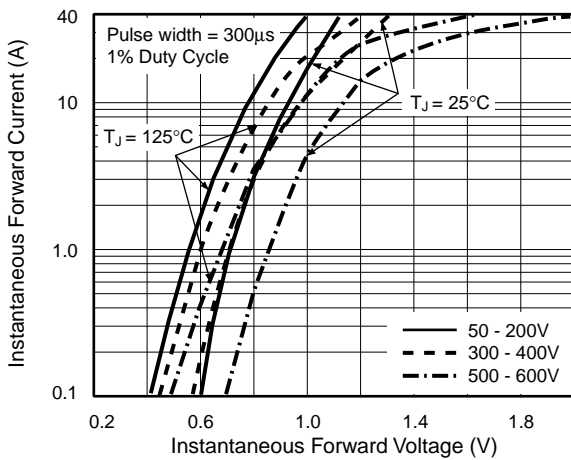
**Fig. 1 – Maximum Forward Current Derating Curve**



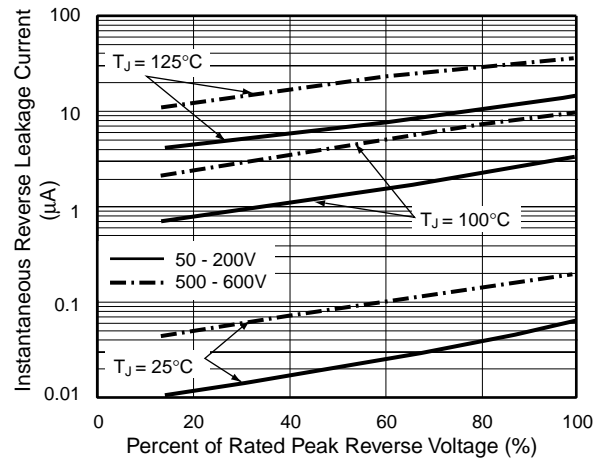
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Leakage Characteristics**



**Fig. 5 – Typical Junction Capacitance**

