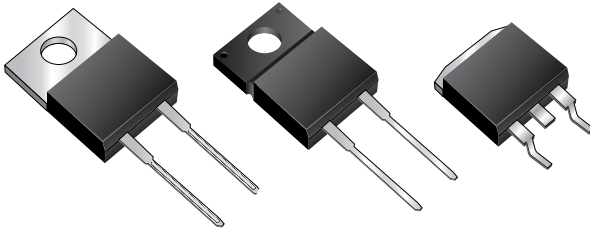


# Ultrafast Plastic Rectifiers

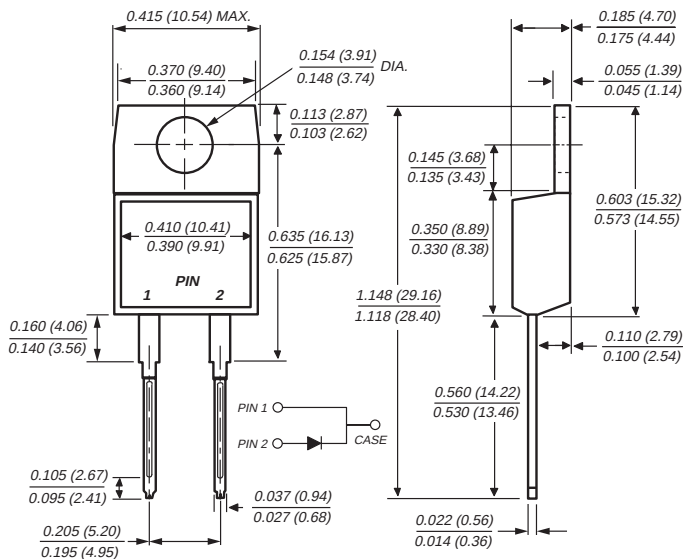
**Reverse Voltage** 50 to 600V

Forward Current 16A

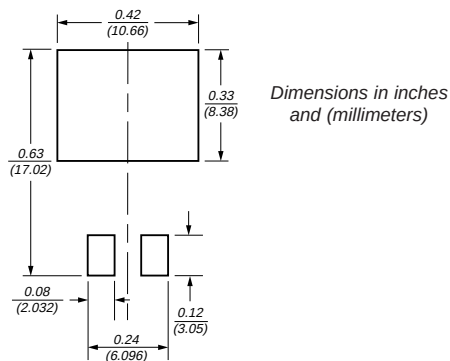
Reverse Recovery Time 35/50ns



## TO-220AC (FES16JT Series)



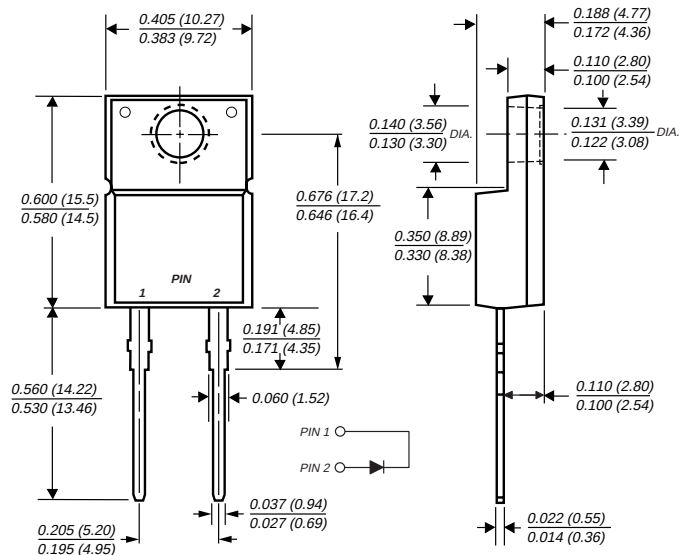
## Mounting Pad Layout TO-263AB



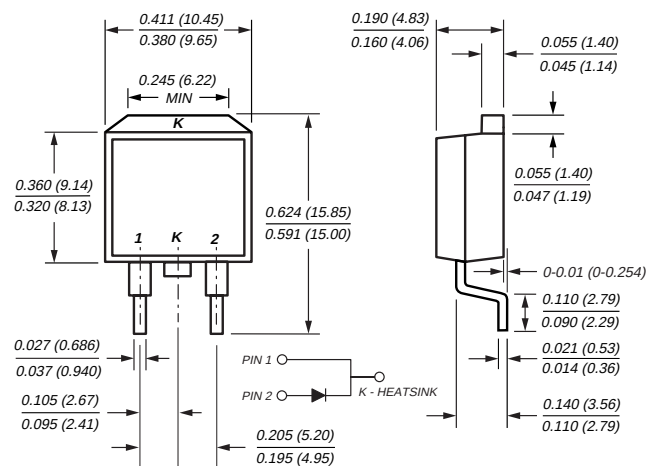
## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip junction
- Low power loss
- High surge current capability
- Low forward voltage, high current capability
- Superfast recovery times for high efficiency

## ITO-220AC (FESF16JT Series)



## TO-263AB (FESB16JT Series)



## 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/10 sec. at terminals

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

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

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

# FES16JT, FESF16JT, FESB16JT Series

Vishay Semiconductors  
formerly General Semiconductor



## Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter                                                                                                                      | Symbol         | FES 16AT                                                          | FES 16BT | FES 16CT | FES 16DT | FES 16FT | FES 16GT | FES 16HT | FES 16JT | Unit |
|--------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|------|
| Maximum repetitive peak reverse voltage                                                                                        | $V_{RRM}$      | 50                                                                | 100      | 150      | 200      | 300      | 400      | 500      | 600      | V    |
| Maximum RMS voltage                                                                                                            | $V_{RMS}$      | 35                                                                | 70       | 105      | 140      | 210      | 280      | 350      | 420      | V    |
| Maximum DC blocking voltage                                                                                                    | $V_{DC}$       | 50                                                                | 100      | 150      | 200      | 300      | 400      | 500      | 600      | V    |
| Maximum average forward rectified current at $T_C=100^\circ\text{C}$                                                           | $I_{F(AV)}$    | 16.0                                                              |          |          |          |          |          |          |          | A    |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at $T_C=100^\circ\text{C}$ | $I_{FSM}$      | 250.0                                                             |          |          |          |          |          |          |          | A    |
| Operating storage and temperature range                                                                                        | $T_J, T_{STG}$ | -65 to +150                                                       |          |          |          |          |          |          |          | °C   |
| RMS isolation voltage (FESF) from terminals to heatsink with $t = 1.0$ second, $RH \leq 30\%$                                  | $V_{ISOL}$     | 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 16AT  | FES 16BT | FES 16CT | FES 16DT | FES 16FT | FES 16GT | FES 16HT | FES 16JT | Unit |    |
|--------------------------------------------------------------------------------------------------------|-----------------|-----------|----------|----------|----------|----------|----------|----------|----------|------|----|
| Maximum instantaneous forward voltage at 16A                                                           | V <sub>F</sub>  | 0.975     |          |          |          | 1.30     |          | 1.50     |          | V    |    |
| Maximum DC reverse current at rated DC blocking voltageT <sub>C</sub> = 100°C                          | I <sub>R</sub>  | 10<br>500 |          |          |          |          |          |          |          |      | μA |
| Maximum reverse recovery time at 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 4.0V, 1MHz                                                             | C <sub>J</sub>  | 175       |          |          |          |          |          | 145      |          | pF   |    |

## Thermal Characteristics

( $T_C = 25^\circ\text{C}$  unless otherwise noted)

| Parameter                                        | Symbol          | FES | FESF | FESB | Unit |
|--------------------------------------------------|-----------------|-----|------|------|------|
| Typical thermal resistance from junction to case | $R_{\theta JC}$ | 1.2 | 1.7  | 1.2  | °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  $\leq 4.9\text{mm}$  (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

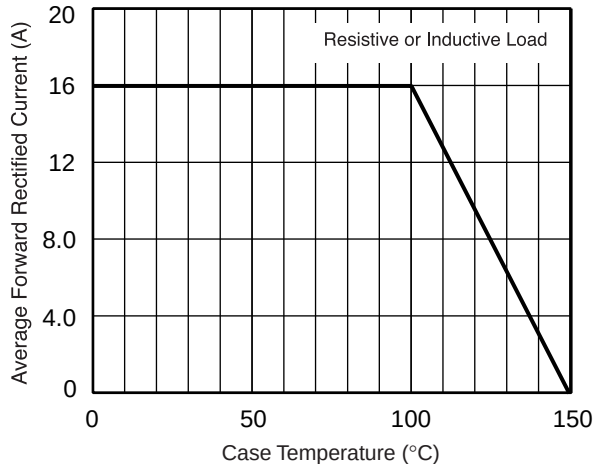
## Ordering Information

| Product  | Case      | Package Code | Package Option                              |
|----------|-----------|--------------|---------------------------------------------|
| FES16JT  | TO-220AC  | 45           | Anti-Static tube, 50/tube, 2K/carton        |
| FESF16JT | ITO-220AC | 45           | Anti-Static tube, 50/tube, 2K/carton        |
| FESB16JT | TO-263AB  | 31           | 13" reel, 800/reel, 4.8K/carton             |
|          |           | 45           | Anti-Static tube, 50/tube, 2K/carton        |
|          |           | 81           | Anti-Static 13" reel, 800/reel, 4.8K/carton |

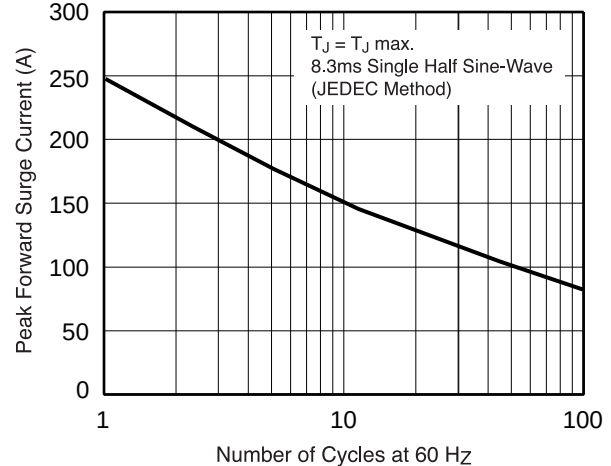


## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

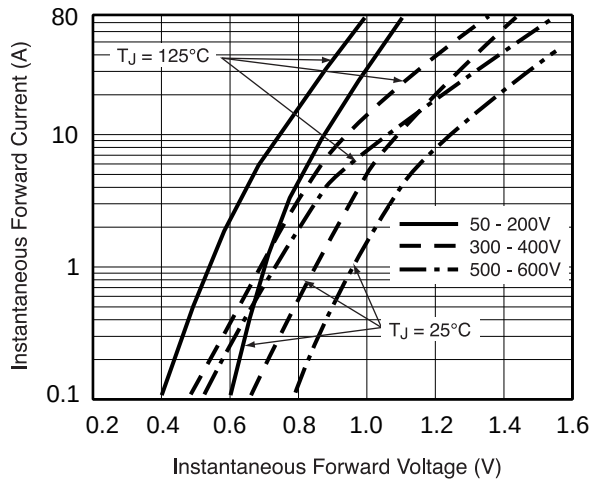
**Fig. 1 – Maximum Forward Current  
Derating Curve**



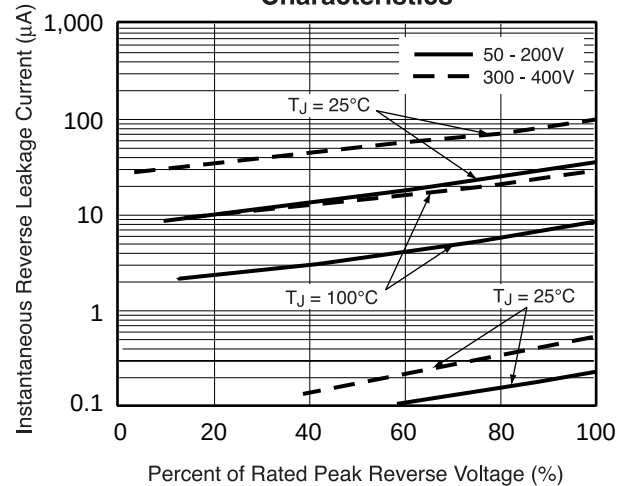
**Fig. 2 – Maximum Non-Repetitive Peak  
Forward Surge Current**



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



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



**Fig. 5 – Typical Junction Capacitance**

