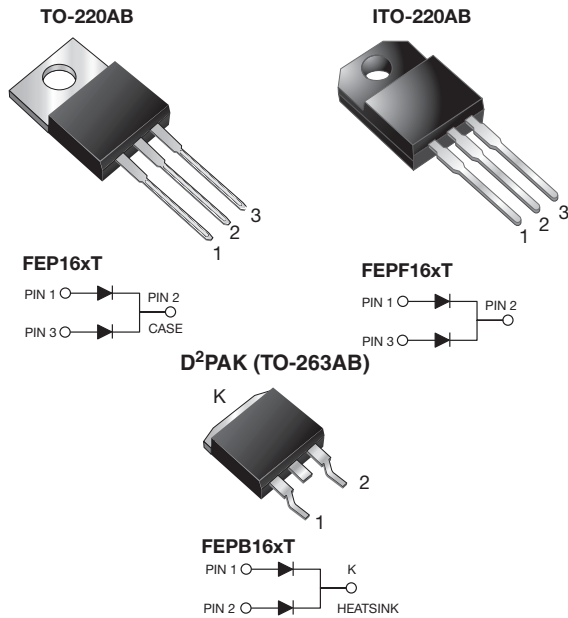


## Dual Common Cathode Ultrafast Plastic Rectifier



### FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 275 °C max. 10 s, per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- AEC-Q101 qualified (for ITO-220AB and TO-263AB package)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

### DESIGN SUPPORT TOOLS

[click logo to get started](#)

**3D**  
Models  
Available

### MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, D<sup>2</sup>PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs max.

| PRIMARY CHARACTERISTICS |  |
|-------------------------|--|
| $I_{F(AV)}$             | 2 x 8.0 A  |
| $V_{RRM}$               | 50 V to 600 V                                      |
| $I_{FSM}$               | 200 A, 125 A                                       |
| $t_{rr}$                | 35 ns, 50 ns                                       |
| $V_F$                   | 0.95 V, 1.30 V, 1.50 V                             |
| $T_J$ max.              | 150 °C   |
| Package                 | TO-220AB, ITO-220AB, D <sup>2</sup> PAK (TO-263AB) |
| Circuit configurations  | Common cathode                                     |

| MAXIMUM RATINGS ( $T_C = 25\text{ °C}$ unless otherwise noted)                               |                |             |         |         |         |         |         |         |         |      |
|--|----------------|-------------|---------|---------|---------|---------|---------|---------|---------|------|
| PARAMETER  | SYMBOL         | FEP16AT     | FEP16BT | FEP16CT | FEP16DT | FEP16FT | FEP16GT | FEP16HT | FEP16JT | 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 $T_C = 100\text{ °C}$                           | $I_{F(AV)}$    | 16          |         |         |         |         |         |         |         | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$      | 200         |         |         |         | 125     |         |         |         | A    |
| Operating storage and temperature range  | $T_J, T_{STG}$ | -55 to +150 |         |         |         |         |         |         |         | °C   |



| MAXIMUM RATINGS (T <sub>C</sub> = 25 °C unless otherwise noted)           |                 |         |         |         |         |         |         |         |         |      |
|---|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|------|
| PARAMETER   | SYMBOL          | FEP16AT | FEP16BT | FEP16CT | FEP16DT | FEP16FT | FEP16GT | FEP16HT | FEP16JT | UNIT |
| Isolation voltage (ITO-220AB only)<br>from terminal to heatsink t = 1 min | V <sub>AC</sub> | 1500    |         |         |         |         |         |         |         | V    |



| ELECTRICAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted) |  |  |                               |          |          |          |          |          |          |          |          |      |    |
|--|--|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|------|----|
| PARAMETER  | TEST CONDITIONS  |  | SYMBOL                        | FEP 16AT | FEP 16BT | FEP 16CT | FEP 16DT | FEP 16FT | FEP 16GT | FEP 16HT | FEP 16JT | UNIT |    |
| Maximum instantaneous forward voltage per diode                            | 8.0 A  |  | V <sub>F</sub> <sup>(1)</sup> | 0.95     |          |          | 1.30     |          | 1.50     |          |          | V    |    |
| Maximum DC reverse current per diode at rated DC blocking voltage          | T <sub>C</sub> = 25 °C   |  | I <sub>R</sub>                | 10       |          |          |          |          |          |          |          | μA   |    |
|  | T <sub>C</sub> = 100 °C  |  |                               | 500      |          |          |          |          |          |          |          |      |    |
| Maximum reverse recovery time per diode                                    | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |  | t <sub>rr</sub>               | 35       |          |          | 50       |          |          |          |          | ns   |    |
| Typical junction capacitance per diode                                     | 4.0 V, 1 MHz   |  | C <sub>J</sub>                | 85       |          |          |          |          | 60       |          |          |      | pF |

**Note**

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted) |                  |     |      |      |      |
|---|------------------|-----|------|------|------|
| PARAMETER   | SYMBOL           | FEP | FEPF | FEPB | UNIT |
| Typical thermal resistance from junction to case per diode              | R <sub>θJC</sub> | 2.2 | 3.1  | 2.2  | °C/W |

| ORDERING INFORMATION (Example) |   |                 |              |               |               |
|--------------------------------|---|-----------------|--------------|---------------|---------------|
| PACKAGE                        | PREFERRED P/N                                   | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB                       | FEP16JT-E3/45                                   | 1.85            | 45           | 50/tube       | Tube          |
| ITO-220AB                      | FEPF16JT-E3/45                                  | 1.97            | 45           | 50/tube       | Tube          |
| TO-263AB                       | FEPB16JT-E3/45                                  | 1.35            | 45           | 50/tube       | Tube          |
| TO-263AB                       | FEPB16JT-E3/81                                  | 1.35            | 81           | 800/reel      | Tape and reel |
| ITO-220AB                      | FEPF16JT <small>THE3</small> /45 <sup>(1)</sup> | 1.97            | 45           | 50/tube       | Tube          |
| TO-263AB                       | FEPB16JT <small>THE3</small> /45 <sup>(1)</sup> | 1.35            | 45           | 50/tube       | Tube          |
| TO-263AB                       | FEPB16JT <small>THE3</small> /81 <sup>(1)</sup> | 1.35            | 81           | 800/reel      | Tape and reel |

**Note**

(1) AEC-Q101 qualified, available in ITO-220AB and TO-263AB package



### RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

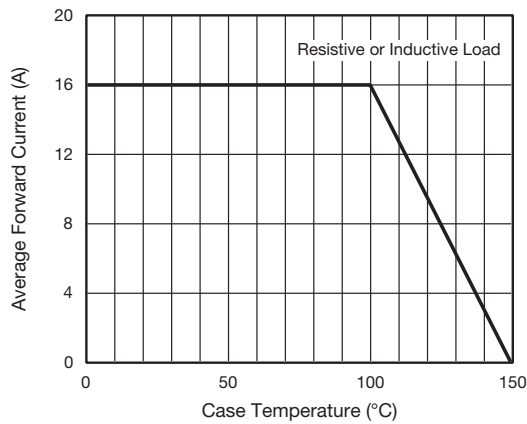


Fig. 1 - Forward Current Derating Curve

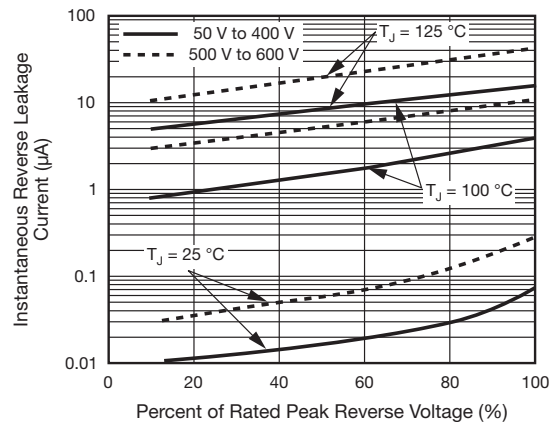


Fig. 4 - Typical Reverse Characteristics Per Diode

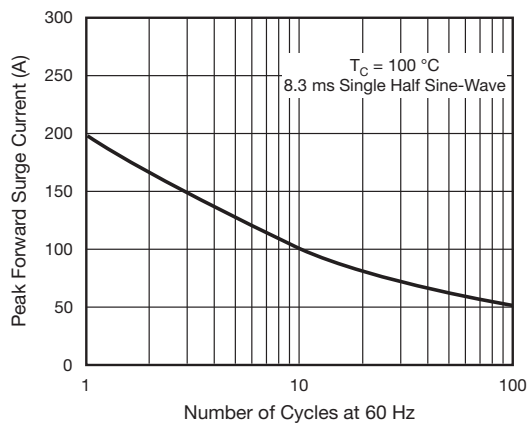


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

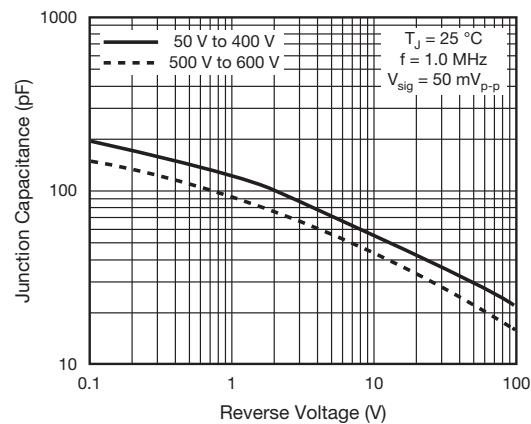


Fig. 5 - Typical Junction Capacitance Per Diode

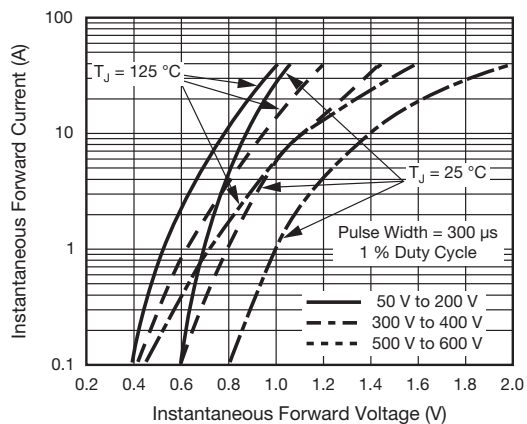
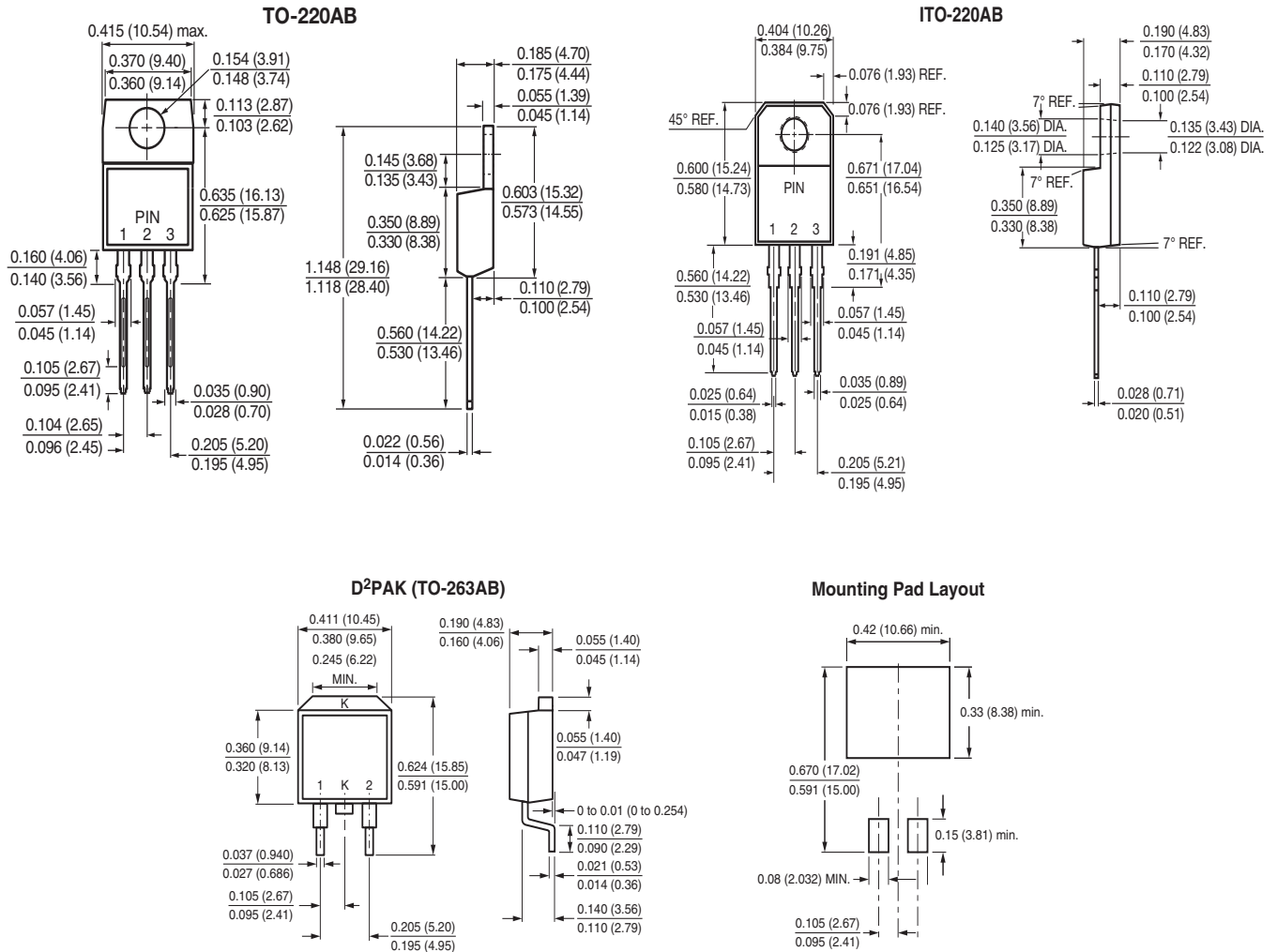


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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