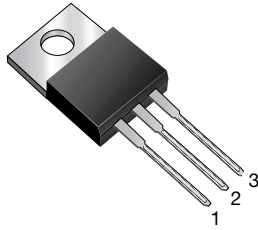
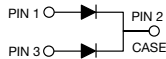
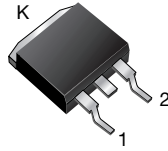
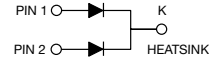


## Dual Common Cathode Ultrafast Plastic Rectifier

**TO-220AB**

**FEP16xT**

**D<sup>2</sup>PAK (TO-263AB)**

**FEPB16xT**


**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
Available

### 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 package
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHM3 for D<sup>2</sup>PAK (TO-263AB package)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### LINKS TO ADDITIONAL RESOURCES



| 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, D <sup>2</sup> PAK (TO-263AB) |
| Circuit configurations  | Common cathode                          |

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** TO-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/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

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

E3 and M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

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

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

| PARAMETER                                                                                    | SYMBOL                            | FEP16AT     | FEP16BT | FEP16CT | FEP16DT<br>FEPB16DT | FEP16FT | FEP16GT<br>FEPB16GT | FEP16HT | FEP16JT<br>FEPB16JT | 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>                | 16          |         |         |                     |         |                     |         |                     | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I <sub>FSM</sub>                  | 200         |         |         |                     | 125     |                     |         |                     | A    |
| Operating storage and temperature range                                                      | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |         |         |                     |         |                     |         |                     | °C   |

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

| PARAMETER                                                         | TEST CONDITIONS                                                                | SYMBOL                        | FEP16AT | FEP16BT | FEP16CT | FEP16DT<br>FEPB16DT | FEP16FT | FEP16GT<br>FEPB16GT | FEP16HT | FEP16JT<br>FEPB16JT | 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,<br>I <sub>R</sub> = 1.0 A,<br>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  $\mu\text{s}$  pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ( $T_C = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                                  | SYMBOL          | FEP | FEPF | FEPB | UNIT                 |
|------------------------------------------------------------|-----------------|-----|------|------|----------------------|
| Typical thermal resistance from junction to case per diode | $R_{\theta JC}$ | 2.2 | 3.1  | 2.2  | $^{\circ}\text{C/W}$ |

**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          |
| D <sup>2</sup> PAK (TO-263AB) | FEPB16JT-M3/I     | 1.35            | I            | 800/reel      | Tape and reel |
| D <sup>2</sup> PAK (TO-263AB) | FEPB16JTHM3/I (1) | 1.35            | I            | 800/reel      | Tape and reel |

**Note**

(1) AEC-Q101 qualified



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

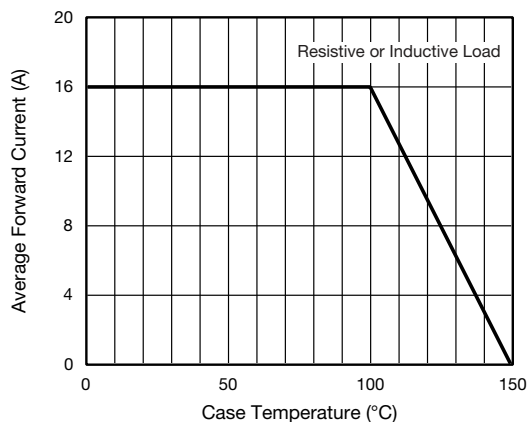


Fig. 1 - Forward Current Derating Curve

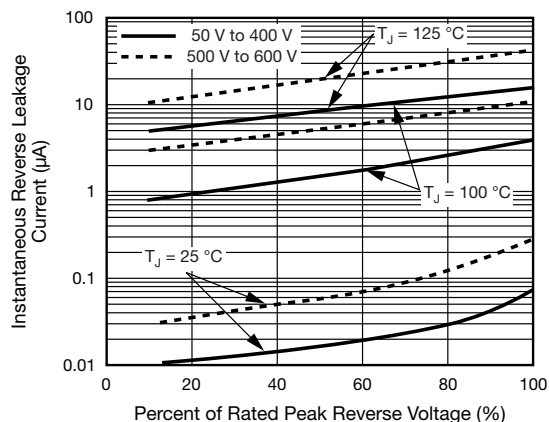


Fig. 4 - Typical Reverse Characteristics Per Diode

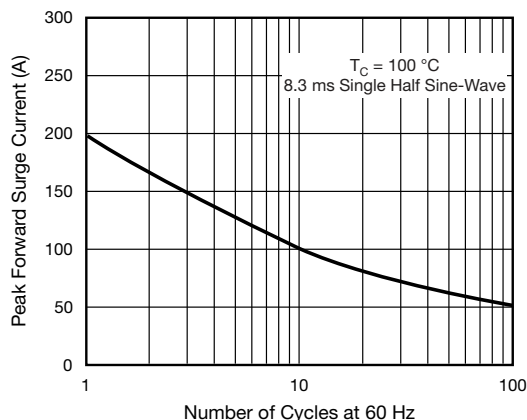


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

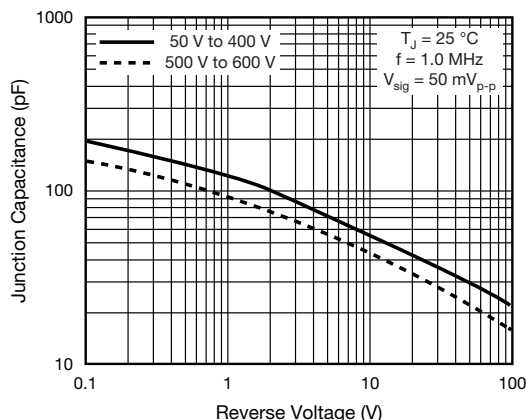


Fig. 5 - Typical Junction Capacitance Per Diode

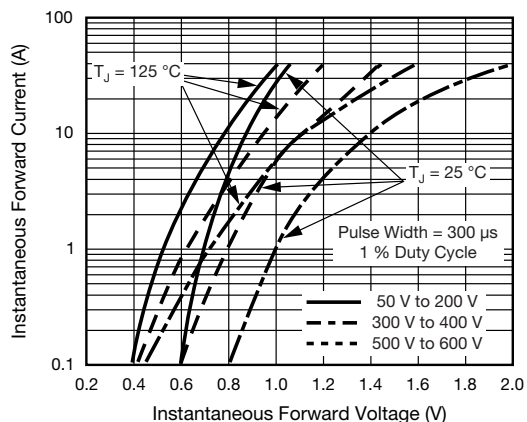
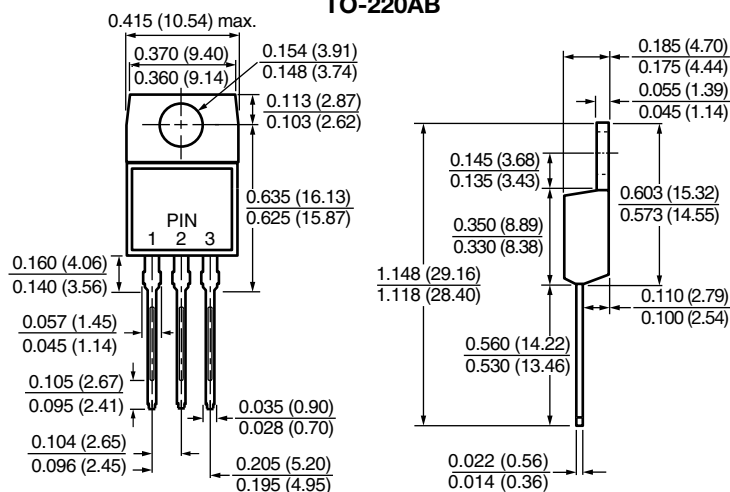


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

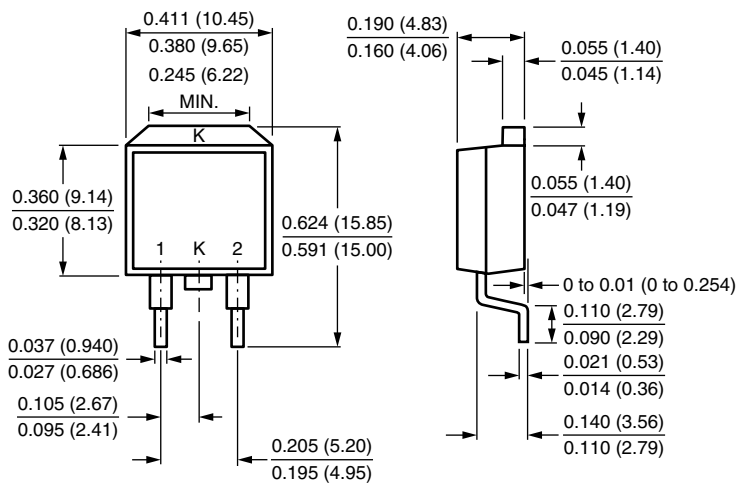


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

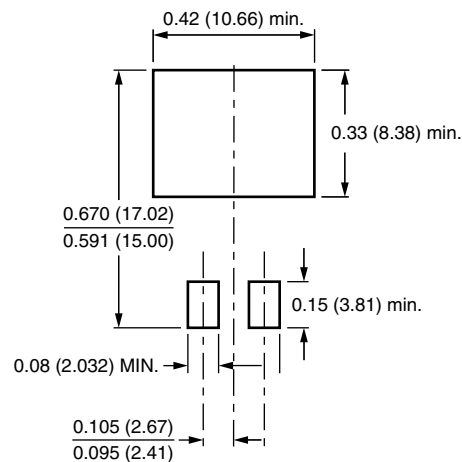
TO-220AB



D<sup>2</sup>PAK (TO-263AB)



Mounting Pad Layout





## Disclaimer

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