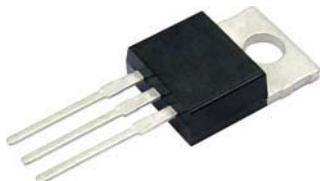
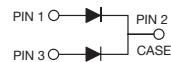


Dual Common-Cathode Ultrafast Plastic Rectifier

TO-220AB



FEPE16XT Series



FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see 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.

MECHANICAL DATA

Case: TO-220AB

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

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 2 x 8.0 A |
| V_{RRM} | 50 V to 400 V |
| I_{FSM} | 200 A, 125 A |
| t_{rr} | 35 ns, 50 ns |
| V_F | 0.95 V, 1.30 V |
| T_J max. | 150 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | |
|--|-------------------|---------------|----------|----------|----------|----------|----------|------|
| PARAMETER | SYMBOL | FEPE16AT | FEPE16BT | FEPE16CT | FEPE16DT | FEPE16FT | FEPE16GT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum average forward rectified current at $T_C = 100$ °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 and storage temperature range | T_J , T_{STG} | - 55 to + 150 | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|--|---|---------------------------|----------------------|----------|----------|----------|----------|----------|----------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | FEPE16AT | FEPE16BT | FEPE16CT | FEPE16DT | FEPE16FT | FEPE16GT | UNIT |
| Maximum instantaneous forward voltage per diode | 8.0 A | | V_F ⁽¹⁾ | 0.95 | | | 1.30 | | V | |
| Maximum DC reverse current per diode | at rated V_R | $T_C = 25^\circ\text{C}$ | I_R ⁽²⁾ | 10 | | | | | | |
| | | $T_C = 100^\circ\text{C}$ | | 500 | | | | | | |
| Maximum reverse recovery time per diode | $I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$ | | t_{rr} | 35 | | | 50 | | ns | |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | | C_J | 85 | | | | | | |
| | | | | | | | | | | |

Notes

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

(2) Pulse test: Pulse width $\leq 40 \text{ ms}$

| THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|---|------------|--------------------------------|----------|----------|----------|----------|----------|------|--------------------|
| PARAMETER | SYMBOL | FEPE16AT | FEPE16BT | FEPE16CT | FEPE16DT | FEPE16FT | FEPE16GT | UNIT | |
| Typical thermal resistance | per diode | $R_{\theta JC}$ | 2.2 | | | | | | $^\circ\text{C/W}$ |
| | per device | $R_{\theta JA}$ ⁽¹⁾ | 50 | | | | | | |

Note

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

| ORDERING INFORMATION (Example) | | | | | |
|---------------------------------------|----------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB | FEPE16GT-E3/45 | 1.92 | 45 | 50/tube | Tube |

RATINGS AND CHARACTERISTICS CURVES

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

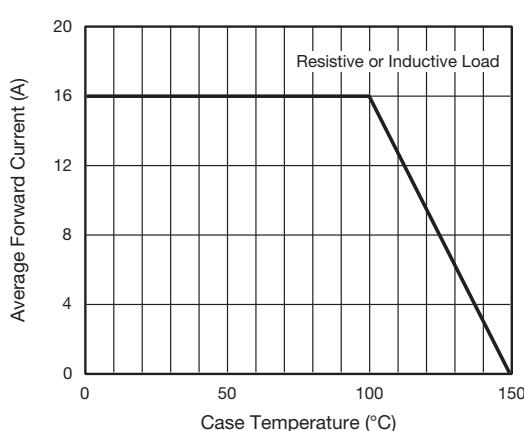


Fig. 1 - Forward Current Derating Curve

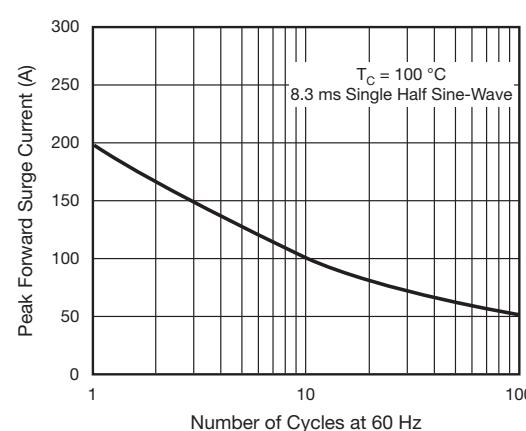


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

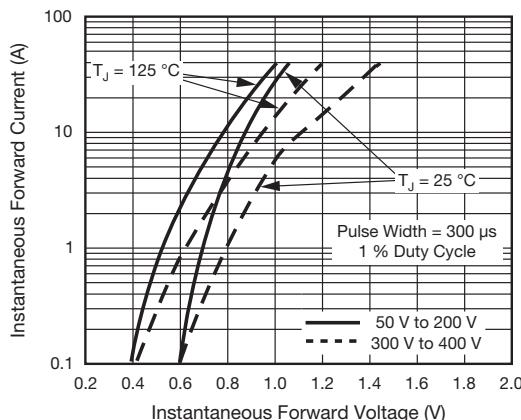


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

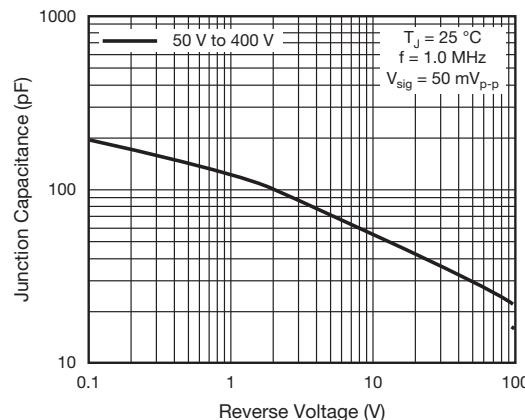


Fig. 5 - Typical Junction Capacitance Per Diode

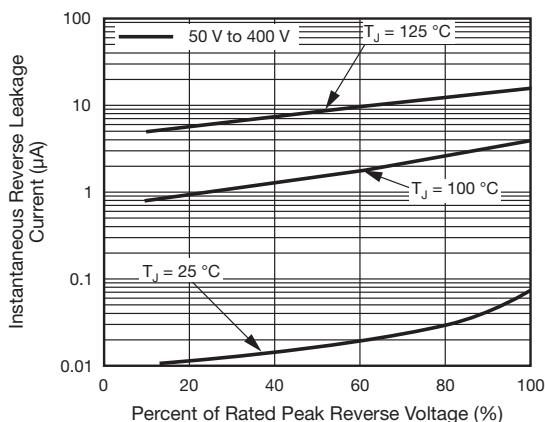
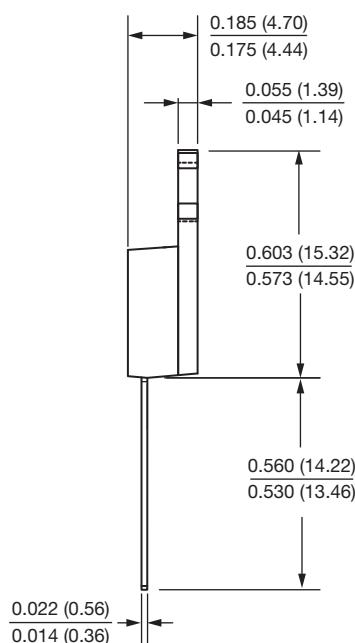
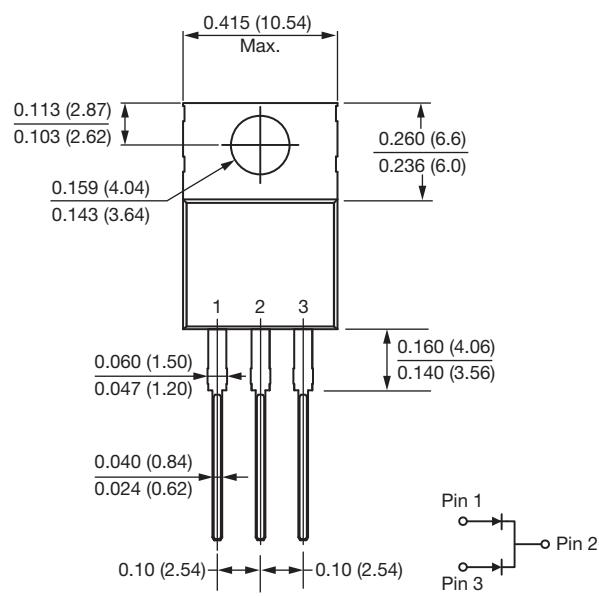


Fig. 4 - Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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