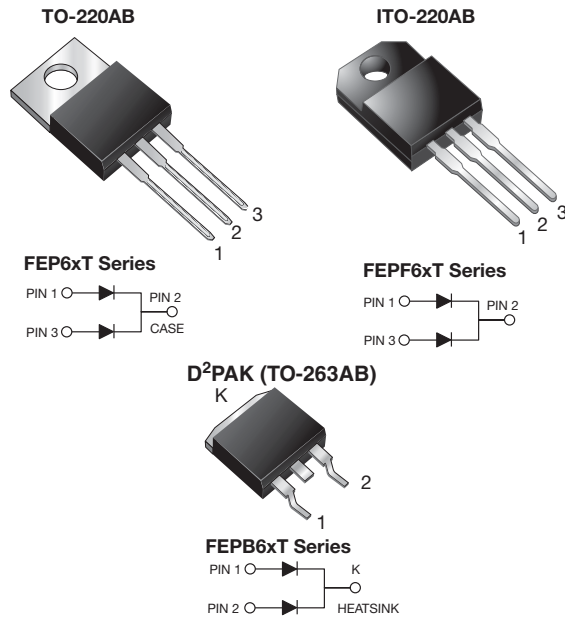


Dual Common Cathode Ultrafast Rectifier



FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- 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


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

| PRIMARY CHARACTERISTICS | |
|-------------------------|--|
| $I_{F(AV)}$ | 6.0 A |
| V_{RRM} | 50 V to 200 V |
| I_{FSM} | 75 A |
| t_{rr} | 35 ns |
| V_F | 0.975 V |
| T_J max. | 150 °C |
| Package | TO-220AB, ITO-220AB, D ² PAK (TO-263AB) |
| Circuit configurations | Common cathode |

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, D²PAK (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.

| MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted) | | | | | | |
|--|----------------|-------------|--------|--------|--------|------|
| PARAMETER | SYMBOL | FEP6AT | FEP6BT | FEP6CT | FEP6DT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | V |
| Maximum average forward rectified current at $T_C = 105$ °C | $I_{F(AV)}$ | 6.0 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 75 | | | | A |
| Operating storage and temperature range | T_J, T_{STG} | -55 to +150 | | | | °C |
| Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1$ min | V_{AC} | 1500 | | | | V |



| ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|---|---|-------------|--------|--------|--------|--------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | FEP6AT | FEP6BT | FEP6CT | FEP6DT | UNIT |
| Maximum instantaneous forward voltage per diode | 3.0 A | $V_F^{(1)}$ | 0.975 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | $T_C = 25\text{ }^\circ\text{C}$ | I_R | 5.0 | | | | μA |
| | $T_C = 100\text{ }^\circ\text{C}$ | | 50 | | | | |
| 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 | | | | ns |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 28 | | | | pF |

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

| THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|-----------------|------|-------|-------|--------------------|
| PARAMETER | SYMBOL | FEP6 | FEPF6 | FEPB6 | UNIT |
| Typical thermal resistance from junction to case per diode | $R_{\theta JC}$ | 3.6 | 5.1 | 3.6 | $^\circ\text{C/W}$ |

| ORDERING INFORMATION (Example) | | | | | |
|--------------------------------|------------------------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB | FEP6DT-E3/45 | 1.81 | 45 | 50/tube | Tube |
| ITO-220AB | FEPF6DT-E3/45 | 1.97 | 45 | 50/tube | Tube |
| TO-263AB | FEPB6DT-E3/45 | 1.33 | 45 | 50/tube | Tube |
| TO-263AB | FEPB6DT-E3/81 | 1.33 | 81 | 800/reel | Tape and reel |
| ITO-220AB | FEPF6DTHE3/45 ⁽¹⁾ | 1.97 | 45 | 50/tube | Tube |
| TO-263AB | FEPB6DTHE3/45 ⁽¹⁾ | 1.33 | 45 | 50/tube | Tube |
| TO-263AB | FEPB6DTHE3/81 ⁽¹⁾ | 1.33 | 81 | 800/reel | Tape and reel |

Note

(1) Automotive grade, available in ITO-220AB and TO-263AB package



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

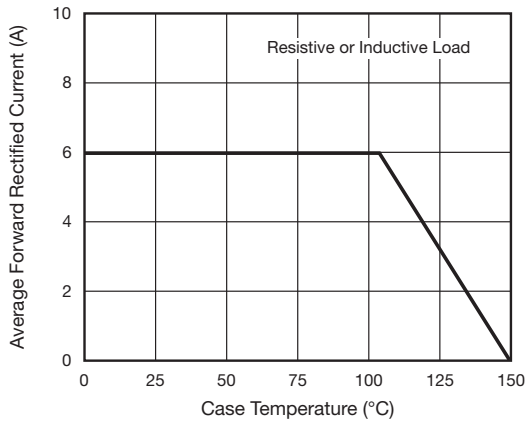


Fig. 1 - Maximum Forward Current Derating Curve

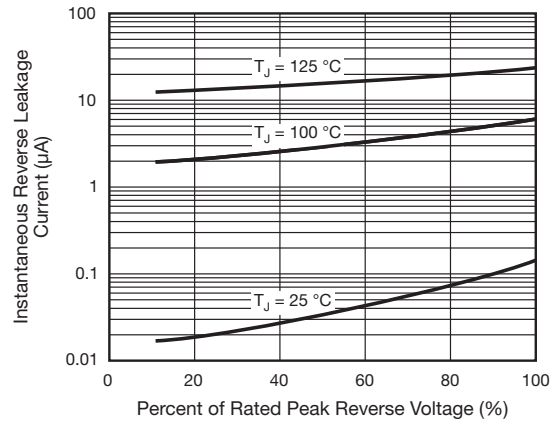


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

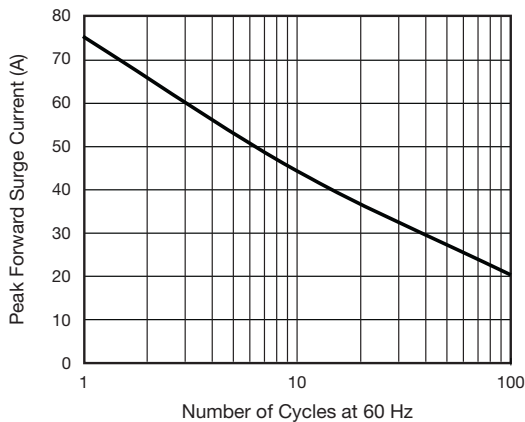


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

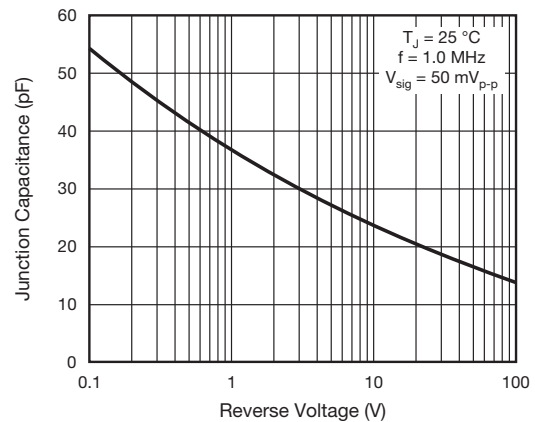


Fig. 5 - Typical Junction Capacitance Per Diode

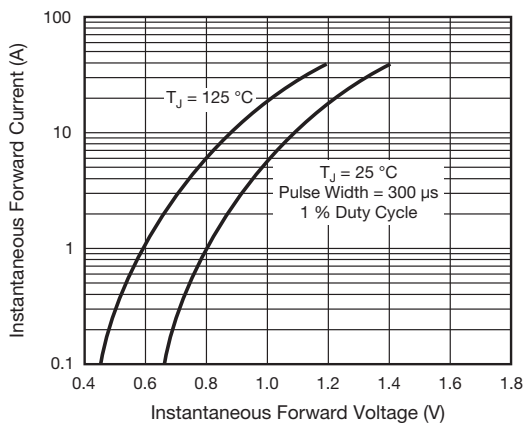
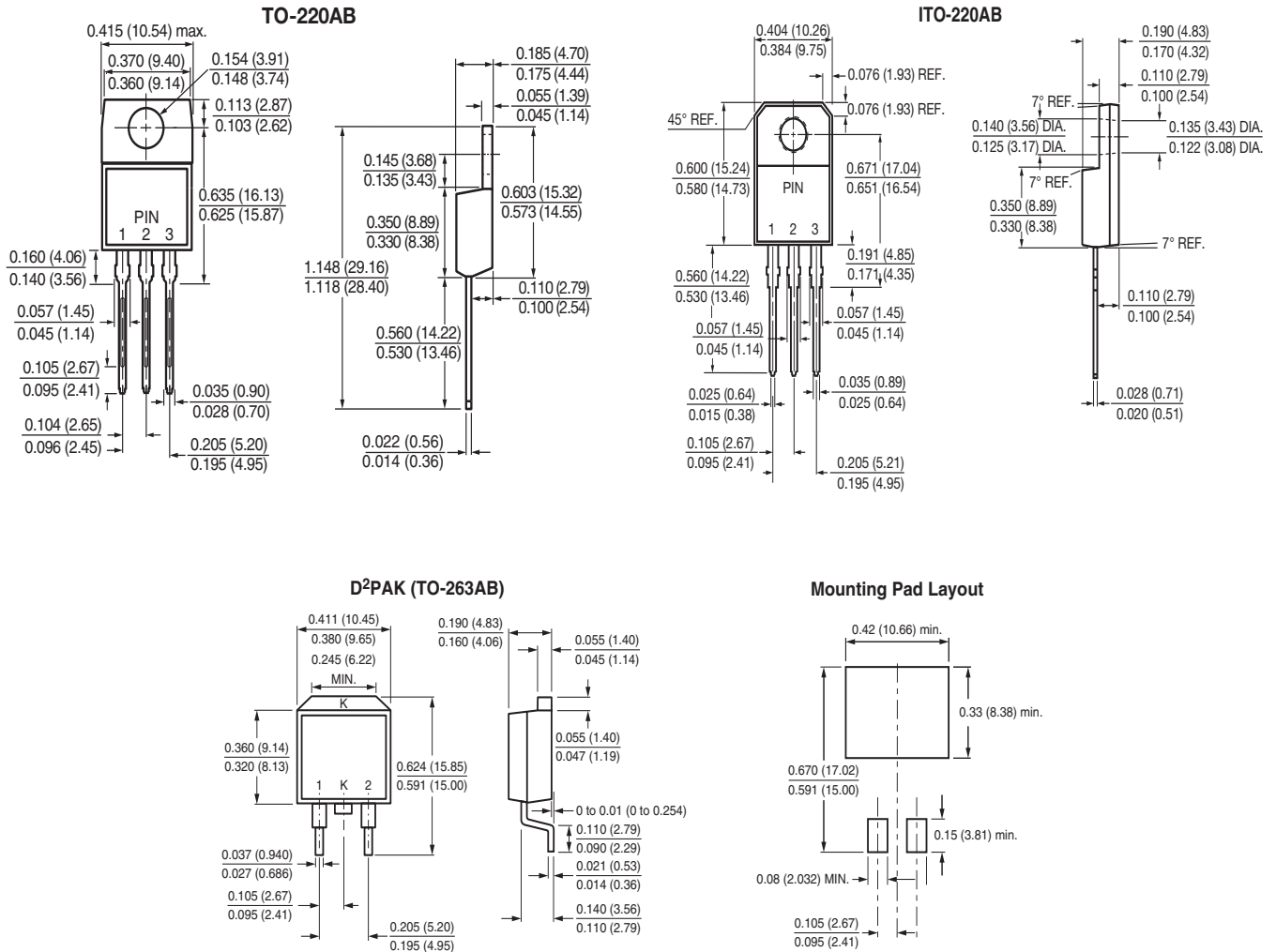


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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