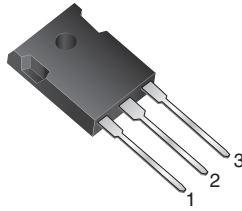
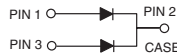




**THE DATASHEET OF
FEP30AP-E3/45**



Dual Common Cathode Ultrafast Rectifier


TO-247AD (TO-3P)


FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low thermal resistance
- High forward surge capability
- Solder dip 260 °C, 40 s
- 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-247AD (TO-3P)

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 JESD22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

| PRIMARY CHARACTERISTICS | |
|-------------------------|---|
| $I_{F(AV)}$ | 30 A |
| V_{RRM} | 50 V, 100 V, 150 V, 200 V, 300 V, 400 V, 500 V, 600 V |
| I_{FSM} | 300 A |
| t_{rr} | 35 ns, 50 ns |
| V_F at $I_F = 15$ A | 0.95 V, 1.3 V, 1.5 V |
| T_J max. | 150 °C |
| Package | TO-247AD (TO-3P) |
| Diode variations | Dual common cathode |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | | | |
|--|----------------|-------------|----------|----------|----------|----------|----------|----------|----------|------|
| PARAMETER | SYMBOL | FEP 30AP | FEP 30BP | FEP 30CP | FEP 30DP | FEP 30FP | FEP 30GP | FEP 30HP | FEP 30JP | 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 $T_C = 100$ °C | $I_{F(AV)}$ | 30 | | | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 300 | | | | | | | | A |
| Operating storage and temperature range | T_J, T_{STG} | -55 to +150 | | | | | | | | °C/W |



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | | |
|--|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | FEP 30AP | FEP 30BP | FEP 30CP | FEP 30DP | FEP 30FP | FEP 30GP | FEP 30HP | FEP 30JP | UNIT |
| Maximum instantaneous forward voltage per diode | 15.0 A | V_F | 0.95 | | | | 1.3 | | 1.5 | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | $T_C = 25\text{ }^\circ\text{C}$ | I_R | 10 | | | | | | | | μA |
| | $T_C = 100\text{ }^\circ\text{C}$ | | 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 | 175 | | | | | | 145 | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|---|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|--------------------|
| PARAMETER | SYMBOL | FEP 30AP | FEP 30BP | FEP 30CP | FEP 30DP | FEP 30FP | FEP 30GP | FEP 30HP | FEP 30JP | UNIT |
| Typical thermal resistance per diode | $R_{\theta JC}^{(1)}$ | 1.0 | | | | | | | | $^\circ\text{C/W}$ |

Note

(1) Thermal resistance from junction to case per diode mounted on heatsink

| ORDERING INFORMATION (Example) | | | | | |
|---------------------------------------|---------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-247AD | FEP30JP-E3/45 | 6.15 | 30 | 30/tube | Tube |

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

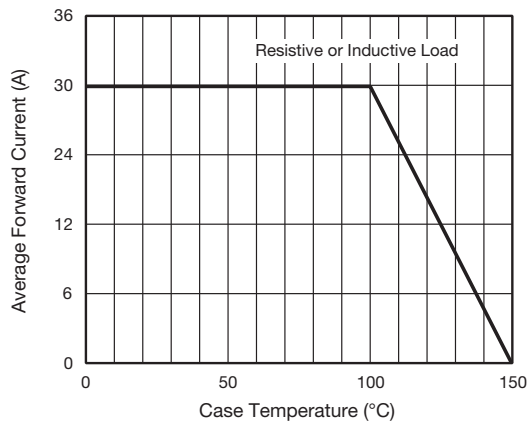


Fig. 1 - Forward Current Derating Curve

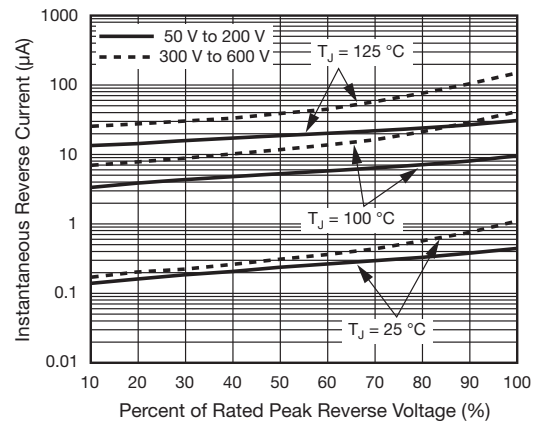


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

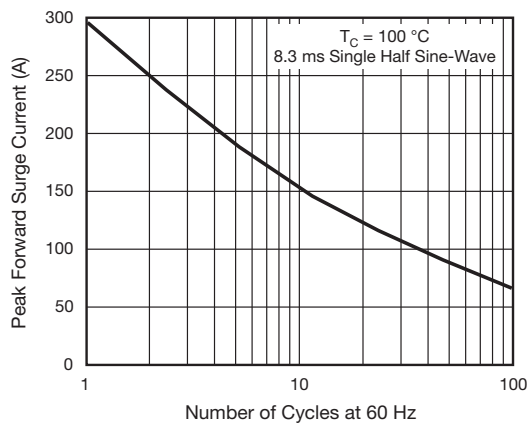


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

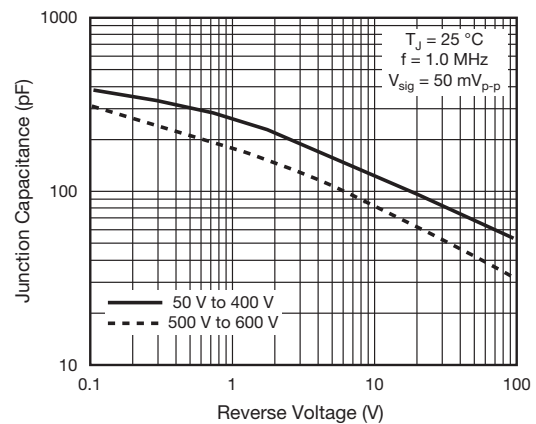


Fig. 5 - Typical Junction Capacitance Per Diode

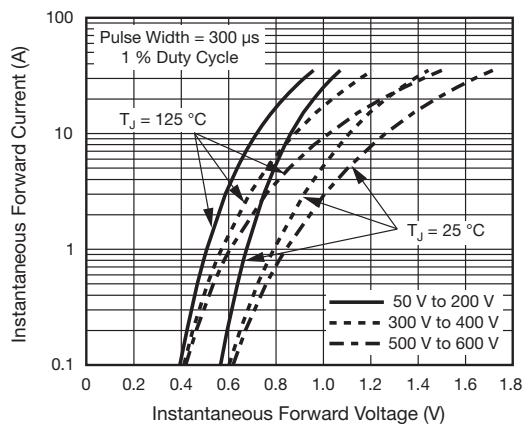
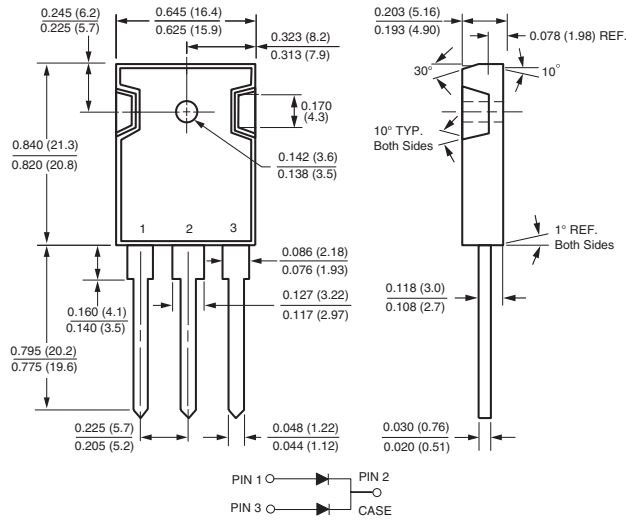


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)





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