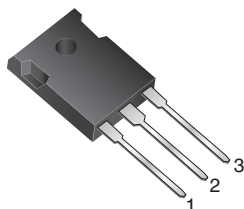


Dual Common Cathode Ultrafast Plastic Rectifier



TO-247AD (TO-3P)



FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low forward voltage drop
- 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-247AD (TO-3P)

Molding compound meets UL 94V-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 for consumer grade, 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 |
| I_{FSM} | 300 A |
| t_{rr} | 25 ns |
| V_F at I_F | 0.85 V |
| T_J max. | 150 °C |
| Package | TO-247AD (TO-3P) |
| Diode variation | Common cathode |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | | |
|--|----------------|-------------|---------|---------|---------|------|
| PARAMETER | SYMBOL | UG30APT | UG30BPT | UG30CPT | UG30DPT | UNIT |
| Max. repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | V |
| Max. RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | V |
| Max. DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | V |
| Max. average forward rectified current at $T_C = 120\text{ °C}$ | $I_{F(AV)}$ | 30 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 300 | | | | A |
| Operating and storage temperature range | T_J, T_{STG} | -65 to +150 | | | | °C |



UG30APT-E3, UG30BPT-E3, UG30CPT-E3, UG30DPT-E3

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| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | |
|--|---|-------------------------|-----------------|---------|---------|---------|---------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | UG30APT | UG30BPT | UG30CPT | UG30DPT | UNIT |
| Max. instantaneous forward voltage per diode | 15 A | T _J = 100 °C | V _F | 1.0 | | | | V |
| | 30 A | | | 1.15 | | | | |
| | 10 A | | | 0.85 | | | | |
| Max. DC reverse current at rated DC blocking voltage per diode | | | I _R | 15 | | | | μA |
| | | | | 800 | | | | |
| Max. reverse recovery time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | | t _{rr} | 25 | | | | ns |
| Max. reverse recovery time | I _F = 15 A, V _R = 30 V, dI/dt = 50 A/μs, I _{RR} = 10 % I _{RM} | T _J = 25 °C | t _{rr} | 35 | | | | ns |
| | | T _J = 100 °C | | 50 | | | | |
| Max. recovered stored charge | I _F = 15 A, V _R = 30 V, dI/dt = 50 A/μs, I _{RR} = 10 % I _{RM} | T _J = 25 °C | Q _{rr} | 22 | | | | nC |
| | | T _J = 100 °C | | 50 | | | | |
| Typical junction capacitance | 4.0 V, 1 MHz | | C _J | 70 | | | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) | | | | | | | |
|--|-----------------|---------|---------|---------|---------|-----------------------------|--|
| PARAMETER | SYMBOL | UG30APT | UG30BPT | UG30CPT | UG30DPT | UNIT | |
| Typical thermal resistance per diode ⁽¹⁾ | $R_{\theta JC}$ | 2.0 | | | | $^{\circ}\text{C}/\text{W}$ | |

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 | UG30DPT-E3/45 | 6.15 | 30 | 30/tube | Tube |



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

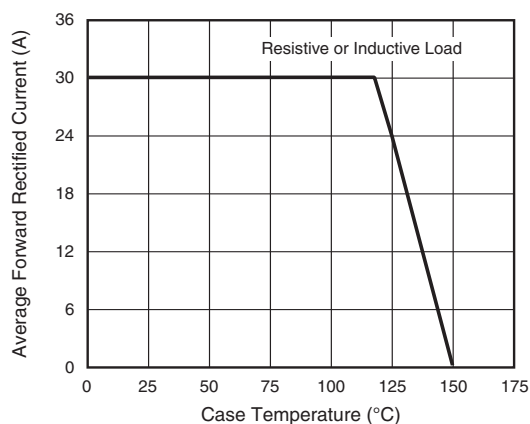


Fig. 1 - Max. Forward Current Derating Curve

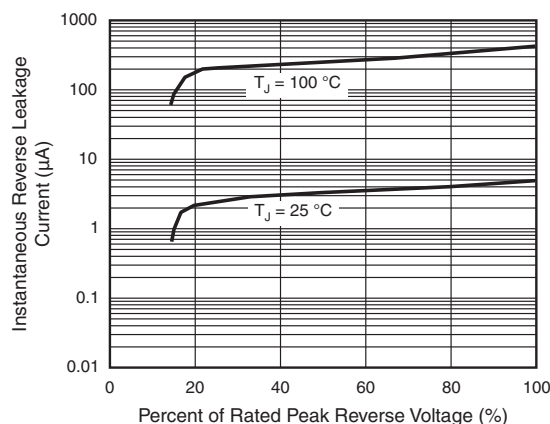


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

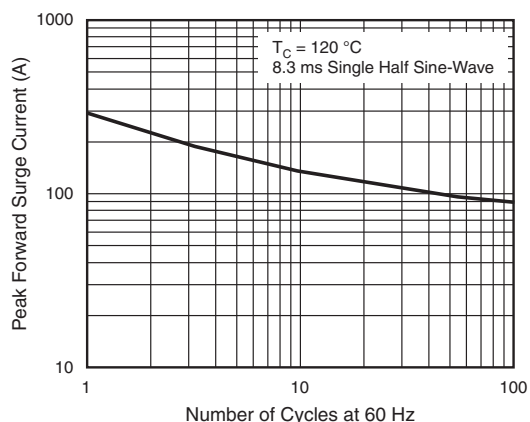


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current Per Diode

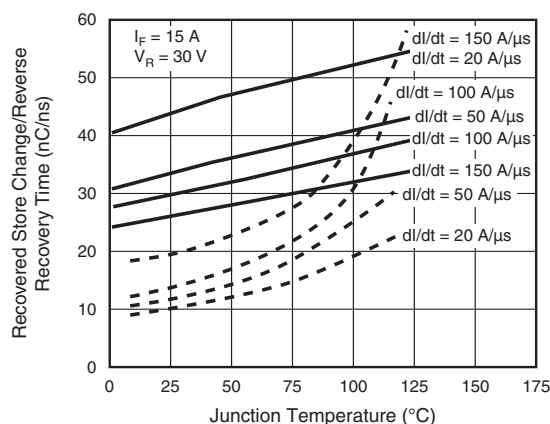


Fig. 5 - Reverse Switching Characteristics Per Diode

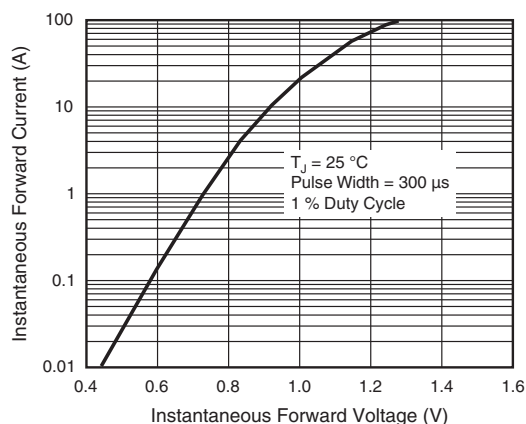


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

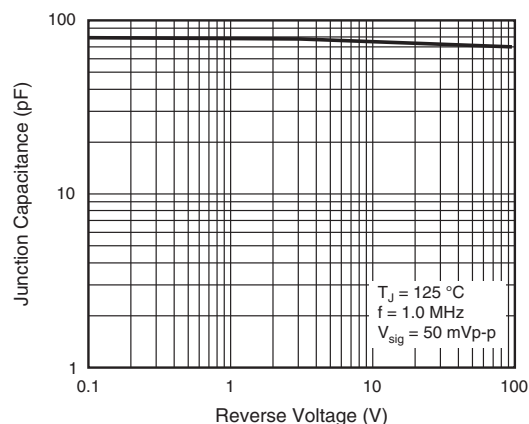


Fig. 6 - Typical Junction Capacitance Per Diode



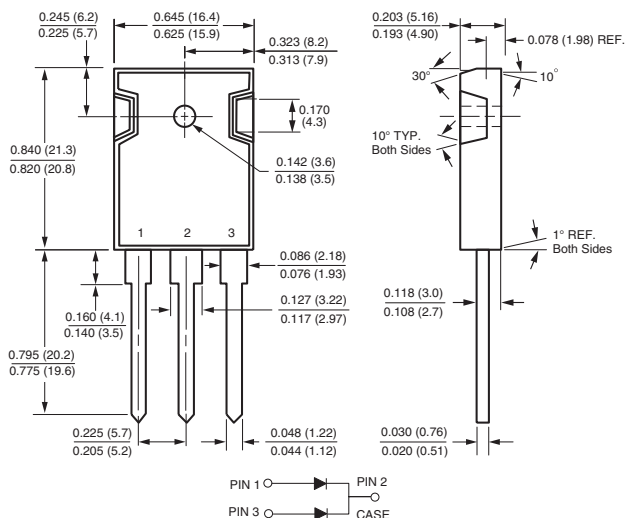
UG30APT-E3, UG30BPT-E3, UG30CPT-E3, UG30DPT-E3

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)





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