

Pb Free Plating Product

U60D20D thru U60D60D



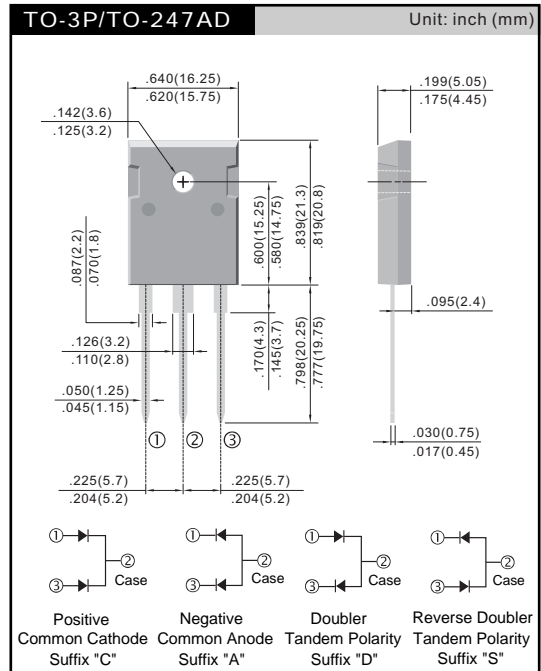
60 Amperes Dual Doubler Ultra Fast Recovery Half Bridge Rectifiers

Features

- ◇ Dual rectifier construction, positive center-tap
- ◇ Plastic package has Underwriters Laboratory Flammability Classification 94V0
- ◇ Glass passivated chip junctions
- ◇ Superfast recovery time, high voltage
- ◇ Low forward voltage, high current capability
- ◇ Low thermal resistance
- ◇ Low power loss, high efficiency
- ◇ High temperature soldering guaranteed: 260°C, 0.16”(4.06mm)from case for 10 seconds

Mechanical Data

- ◇ Cases: TO-3P/TO-247AD molded plastic
- ◇ Terminals: Pure tin plated, lead free solderable per MIL-STD-750. Method 2026
- ◇ Polarity: As marked on diode body
- ◇ Mounting position: Any
- ◇ Mounting torque: 10in-lbs. Max.
- ◇ Weight: 6.5 gram approximately



Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

MAXIMUM RATINGS

| Rating | Symbol | U60D20D | U60D40D | U60D60D | Unit |
|--|----------------|--|---------|--------------------------|------|
| Peak Repetitive Reverse Voltage | V_{RRM} | 200 | 400 | 600 | V |
| Working Peak Reverse Voltage | V_{RWM} | | | | |
| DC Blocking Voltage | V_R | | | | |
| Average Rectified Forward Current (Rated V_R) Per Leg Per Device | $I_{F(AV)}$ | 30 @ $T_C = 150^\circ C$ 60 @ $T_C = 150^\circ C$ | | | A |
| Peak Rectified Forward Current, Per Leg (Rated V_R , Square Wave, 20 kHz, $T_C = 150^\circ C$) | I_{FRM} | 60 @ $T_C = 150^\circ C$ | | 60 @ $T_C = 145^\circ C$ | A |
| Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz) Per Leg | I_{FSM} | 600 | | | A |
| Operating Junction and Storage Temperature | T_J, T_{stg} | - 65 to +175 | | | °C |

THERMAL CHARACTERISTICS (Per Diode Leg)

| | | | | |
|--|------------------------------------|--|-----------|------|
| Maximum Thermal Resistance, - Junction-to-Case - Junction-to-Ambient | $R_{\theta JC}$ $R_{\theta JA}$ | | 1.5 40 | °C/W |
|--|------------------------------------|--|-----------|------|

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

| | | | | | |
|---|----------|--------------|--------------|------------|----|
| Maximum Instantaneous Forward Voltage (Note 1) ($I_F = 30$ Amp, $T_C = 150^\circ C$) ($I_F = 30$ Amp, $T_C = 25^\circ C$) | V_F | 0.95 1.05 | 1.20 1.30 | 1.5 1.7 | V |
| Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_J = 150^\circ C$) (Rated DC Voltage, $T_J = 25^\circ C$) | i_R | 5000 60 | | 5000 60 | μA |
| Maximum Reverse Recovery Time ($i_F = 1.0$ A, $di/dt = 50$ A/μs) | t_{rr} | 35 | 50 | | ns |

Ultra Fast Recovery Diodes

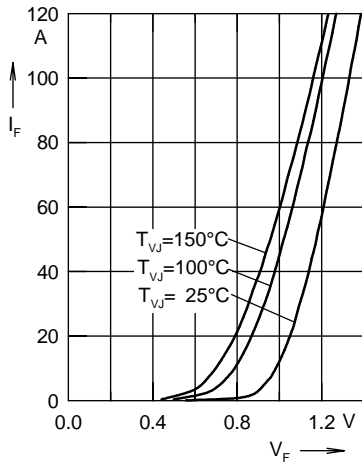


Fig. 1 Forward current I_F versus V_F

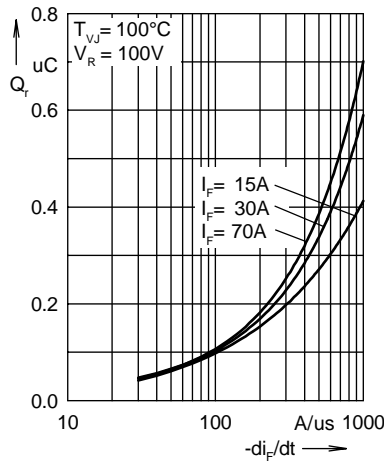


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

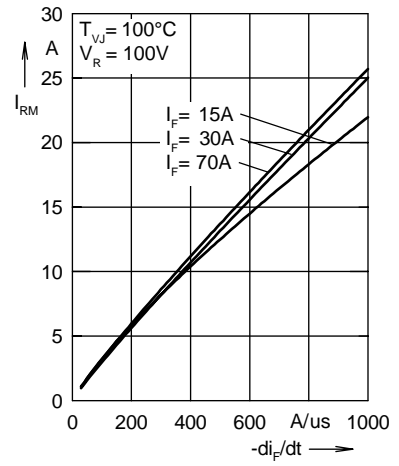


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

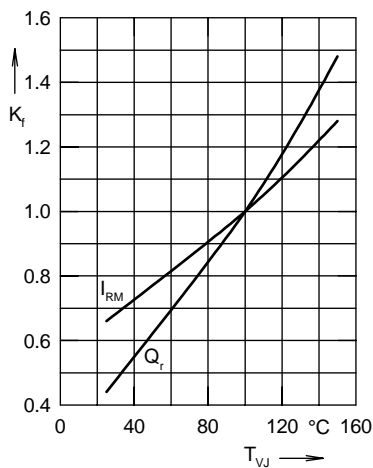


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

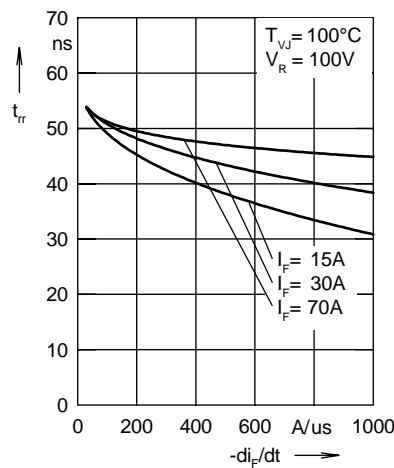


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

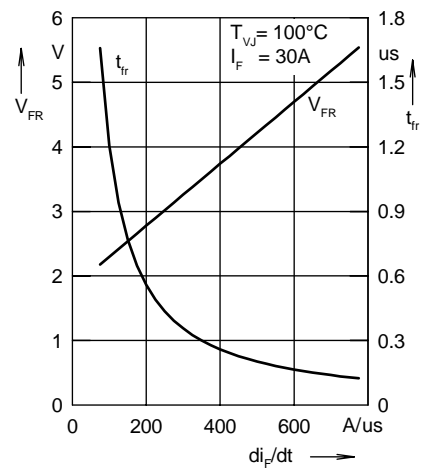


Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr} versus di_F/dt

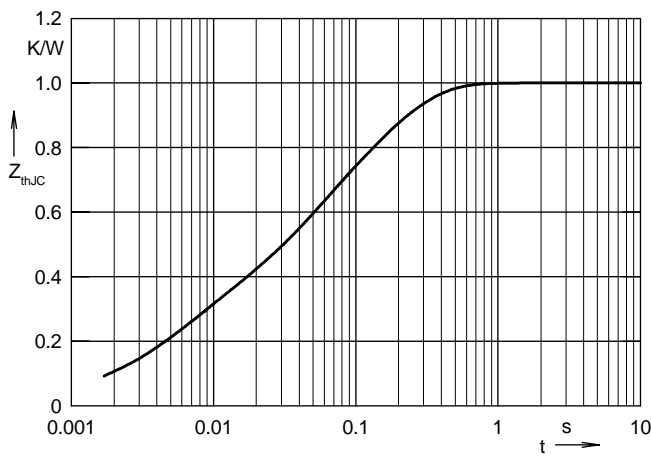


Fig. 7 Transient thermal impedance junction to case