

**MUR6020PS thru MUR6060PS**

**Pb Free Plating Product**

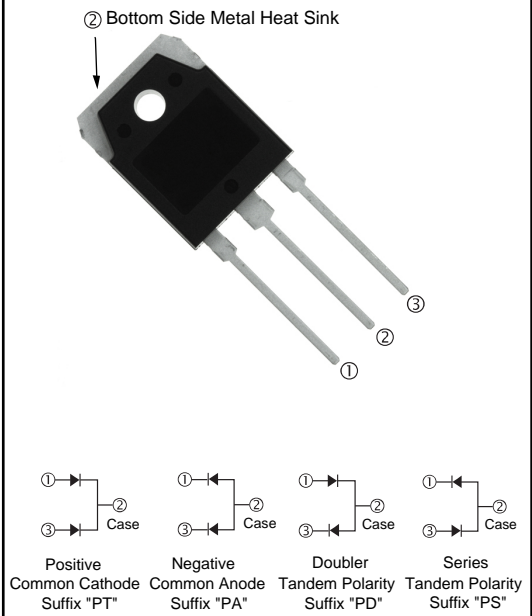
60 Amperes Dual Series Connection Ultra Fast Recovery Half Bridge Rectifiers

**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
- ◇ Mounting position: Any
- ◇ Mounting torque: 10in-lbs. Max.
- ◇ Weight: 6.5 gram approximately

**TO-3PN**


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  $\mu$ s, Duty Cycle  $\leq$  2.0%.

**MAXIMUM RATINGS**

Rating	Symbol	MUR6020PS	MUR6040PS	MUR6060PS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	400	600	V
Average Rectified Forward Current (Rated $V_R$ ) Per Leg Per Device	$I_{F(AV)}$	30 @ $T_C = 150^\circ\text{C}$ 60 @ $T_C = 150^\circ\text{C}$			A
Peak Rectified Forward Current, Per Leg (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 150^\circ\text{C}$ )	$I_{FRM}$	60 @ $T_C = 150^\circ\text{C}$		60 @ $T_C = 145^\circ\text{C}$	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			$^\circ\text{C}$

**THERMAL CHARACTERISTICS (Per Diode Leg)**

Maximum Thermal Resistance, - Junction-to-Case - Junction-to-Ambient	$R_{\theta JC}$ $R_{\theta JA}$	1.5 40	$^\circ\text{C/W}$
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**ELECTRICAL CHARACTERISTICS (Per Diode Leg)**

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

### Ultra Fast Recovery Diodes

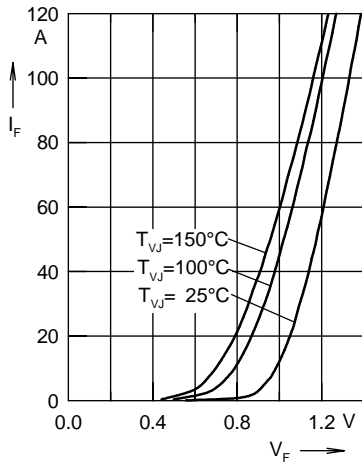


Fig. 1 Forward current  $I_F$  versus  $V_F$

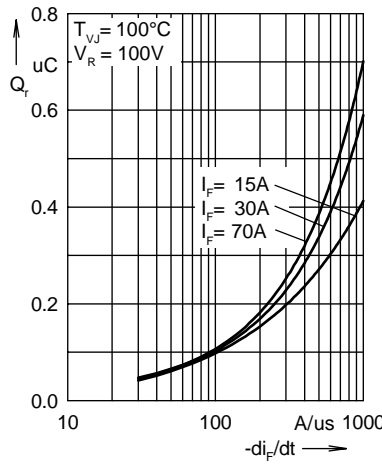


Fig. 2 Typ. reverse recovery charge  $Q_r$  versus  $-di_F/dt$

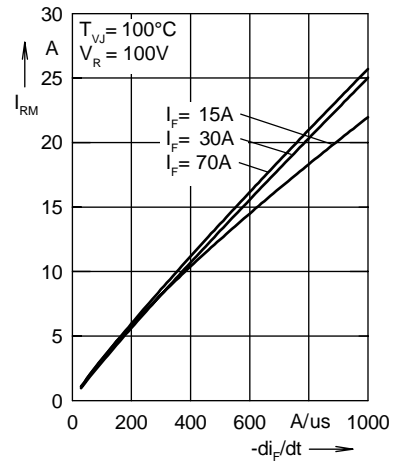


Fig. 3 Typ. peak reverse current  $I_{RM}$  versus  $-di_F/dt$

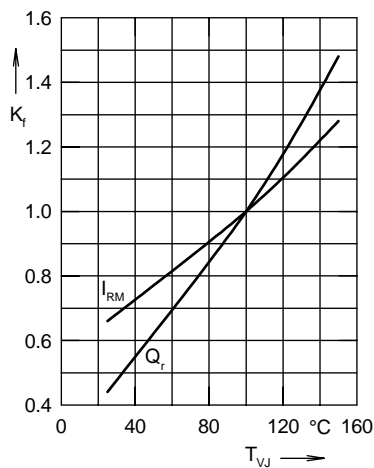


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

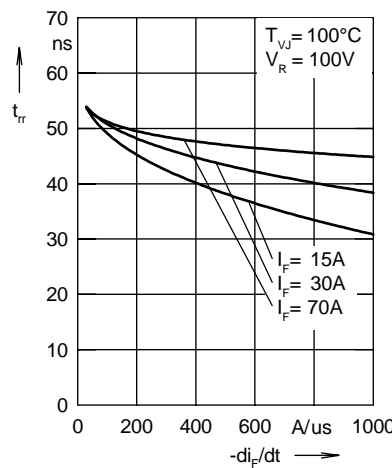


Fig. 5 Typ. recovery time  $t_{rr}$  versus  $-di_F/dt$

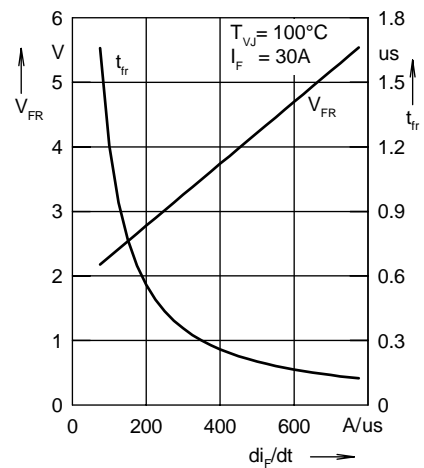


Fig. 6 Typ. peak forward voltage  $V_{FR}$  and  $t_{fr}$  versus  $di_F/dt$

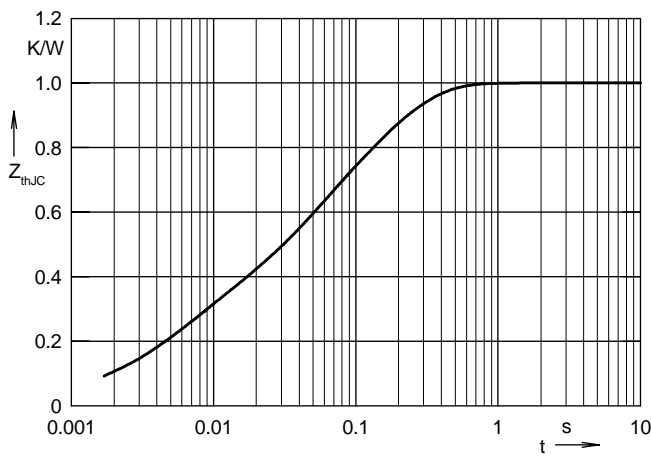


Fig. 7 Transient thermal impedance junction to case