

Pb Free Plating Product

MUR6020PTR/MUR6040PTR/MUR6060PTR



60 Amperes HeatSink Dual Common Anode Ultra Fast Recovery Rectifiers

**Features**

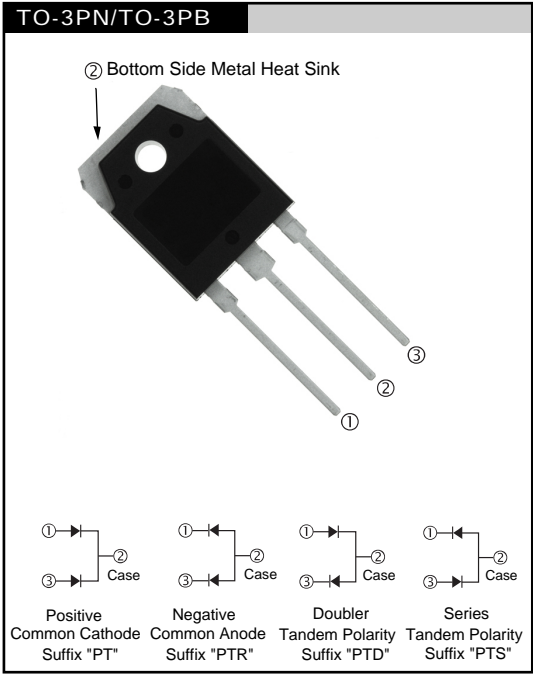
- \* Latest GPP technology with super fast recovery time
- \* Low forward voltage drop
- \* High current capability
- \* Low reverse leakage current
- \* High surge current capability

**Application**

- \* Automotive Inverters/Solar Inverters
- \* Plating Power Supply, SMPS, Adapter and UPS
- \* Car Audio Amplifiers and Sound Device Systems

**Mechanical Data**

- \* Case: TO-3PN/TO-3PB
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solderable per MIL-STD-202 method 208
- \* Polarity: As marked on diode body
- \* Mounting position: Any
- \* Weight: 6.0 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  $\mu$ s, Duty Cycle  $\leq$  2.0%.

**MAXIMUM RATINGS**

Rating	Symbol	MUR6020PTR	MUR6040PTR	MUR6060PTR	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 @ $T_C = 150^\circ C$ 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			$^\circ C$

**THERMAL CHARACTERISTICS** (Per Diode Leg)

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

Parameter	Symbol	MUR6020PTR	MUR6040PTR	MUR6060PTR	Unit
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	$\mu A$
Maximum Reverse Recovery Time ( $i_F = 1.0$ A, $di/dt = 50$ A/ $\mu s$ )	$t_{rr}$	35	50		ns

### Ultra Fast Recovery Diodes

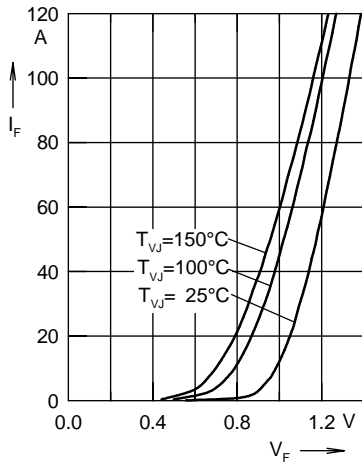


Fig. 1 Forward current  $I_F$  versus  $V_F$

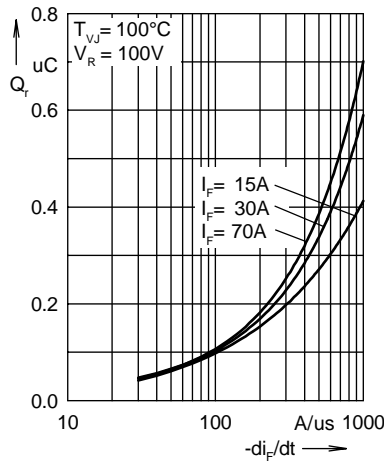


Fig. 2 Typ. reverse recovery charge  $Q_r$  versus  $-di_F/dt$

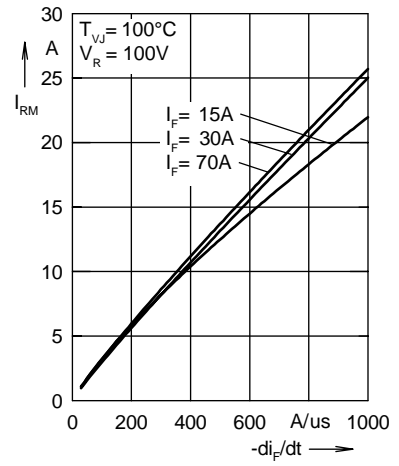


Fig. 3 Typ. peak reverse current  $I_{RM}$  versus  $-di_F/dt$

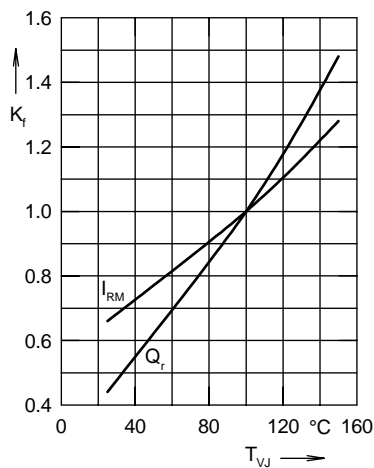


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

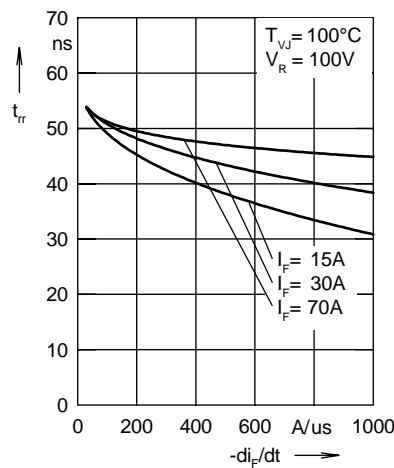


Fig. 5 Typ. recovery time  $t_{rr}$  versus  $-di_F/dt$

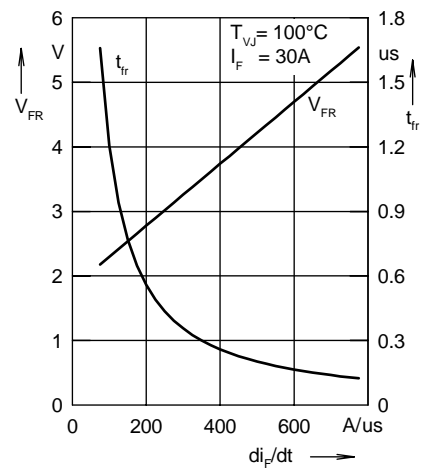


Fig. 6 Typ. peak forward voltage  $V_{FR}$  and  $t_{fr}$  versus  $di_F/dt$

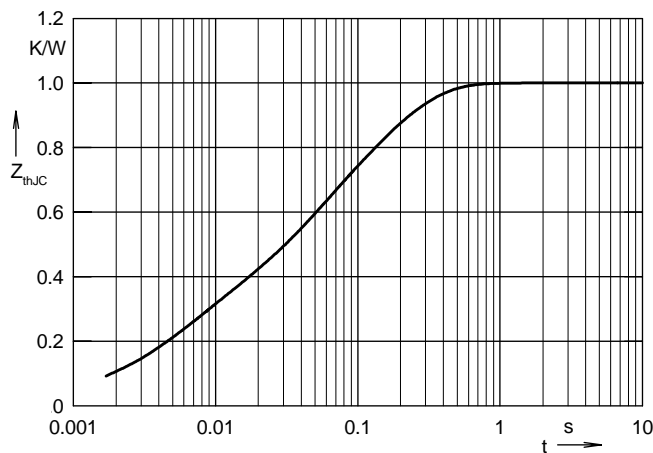


Fig. 7 Transient thermal impedance junction to case