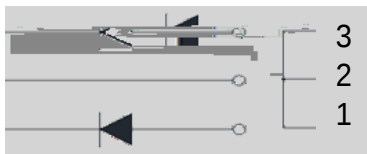
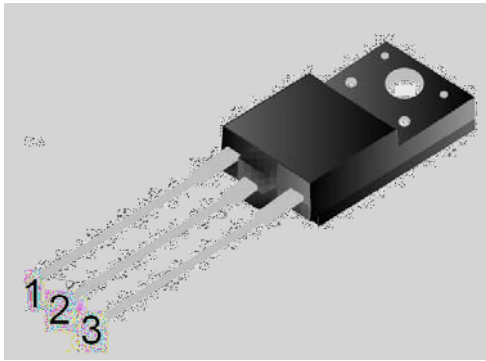


## Ultra-Fast Recovery Diodes 10A\*2 FRED



### Features

- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

### Typical Applications

- Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-3PF  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>j</sub>=25 °C Unless otherwise specified)

| PARAMETER                                                                                 | SYMBOL           | UNIT             | MUR2020FPT |
|-------------------------------------------------------------------------------------------|------------------|------------------|------------|
| Device marking code                                                                       |                  |                  | MUR2020FPT |
| Repetitive Peak Reverse Voltage                                                           | V <sub>RRM</sub> | V                | 200        |
| Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)          | I <sub>O</sub>   | A                | 20         |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25 °C | I <sub>FSM</sub> | A                | 120        |
| Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25 °C                                   | I <sup>2</sup> t | A <sup>2</sup> s | 60         |
| Single Pulse Avalanche Energy @ Tp=40uS, T <sub>j</sub> =25 °C, L=15mH                    | EAS              | mJ               | 245        |
| Storage Temperature                                                                       | T <sub>stg</sub> |                  | -55 ~ +175 |
| Junction Temperature                                                                      | T <sub>j</sub>   |                  | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz                                                     | C <sub>j</sub>   | pF               | 150        |



## MUR2020FPT

### ■Electrical Characteristics

| PARAMETER                                                 | SYMBOL     | UNIT    | TEST CONDITIONS                                   | Min | Typ  | Max |
|-----------------------------------------------------------|------------|---------|---------------------------------------------------|-----|------|-----|
| Instantaneous forward voltage drop per diode              | $V_{FM}$   | V       | $I_{FM}=10.0A$ @ $T_j=25$                         | -   | 0.90 | 1.0 |
|                                                           |            |         | $I_{FM}=10.0A$ @ $T_j=150$                        |     | 0.78 | 0.9 |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | $\mu A$ | $V_{RM}=V_{RRM}$<br>$T_j=25$                      | -   | -    | 5   |
|                                                           | $I_{RRM2}$ |         | $V_{RM}=V_{RRM}$<br>$T_j=150$                     | -   | 30   | 100 |
| Reverse Recovery Time                                     | $T_{rr}$   | ns      | $I_F=0.5A$ $I_{RM}=1A$<br>$I_{RR}=0.25A$ $T_j=25$ | -   | 25   | 35  |
|                                                           |            |         | $T_j=25$                                          | -   | 20   | -   |
|                                                           |            |         | $T_j=125$                                         | -   | 35   | -   |
| Peak recovery current                                     | $I_{RRM}$  | A       | $T_j=25$                                          | -   | 3.0  | -   |
|                                                           |            |         | $T_j=125$                                         | -   | 5.5  | -   |
| Reverse recovery charge                                   | $Q_{rr}$   | nC      | $T_j=25$                                          | -   | 30   | -   |
|                                                           |            |         | $T_j=125$                                         | -   | 100  | -   |

### ■Thermal Characteristics $T_j=25$ Unless otherwise specified

| PARAMETER | SYMBOL | UNIT |
|-----------|--------|------|
|-----------|--------|------|



FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

