

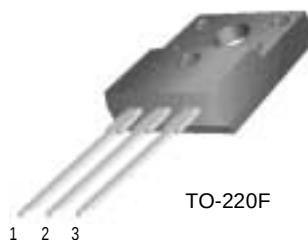
## FFPF10U60DN

### Features

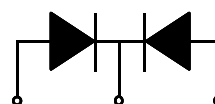
- High voltage and high reliability
- High speed switching
- Low forward voltage

### Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits



TO-220F



1. Anode 2. Cathode 3. Anode

## ULTRA FAST RECOVERY POWER RECTIFIER

### Absolute Maximum Ratings (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol         | Parameter                                                       | Value        | Units            |
|----------------|-----------------------------------------------------------------|--------------|------------------|
| $V_{RRM}$      | Peak Repetitive Reverse Voltage                                 | 600          | V                |
| $I_{F(AV)}$    | Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$   | 10           | A                |
| $I_{FSM}$      | Non-repetitive Peak Surge Current<br>60Hz Single Half-Sine Wave | 60           | A                |
| $T_J, T_{STG}$ | Operating Junction and Storage Temperature                      | - 65 to +150 | $^\circ\text{C}$ |

### Thermal Characteristics

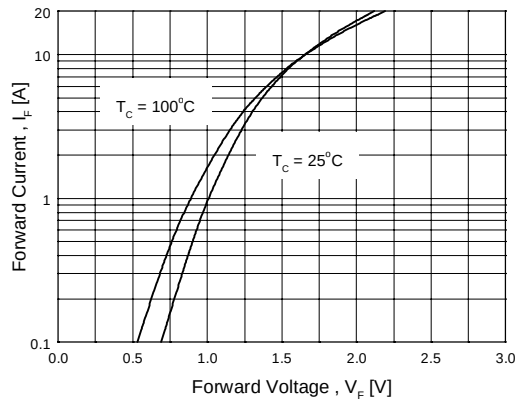
| Symbol          | Parameter                                    | Value | Units              |
|-----------------|----------------------------------------------|-------|--------------------|
| $R_{\theta JC}$ | Maximum Thermal Resistance, Junction to Case | 2.5   | $^\circ\text{C/W}$ |

### Electrical Characteristics (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

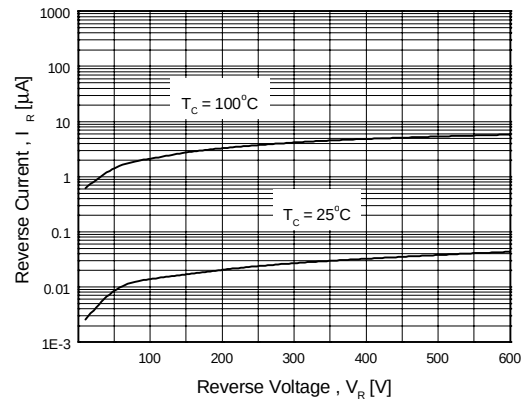
| Symbol                           | Parameter                                                                                                                                                          | Min. | Typ. | Max.           | Units         |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|----------------|---------------|
| $V_{FM}^*$                       | Maximum Instantaneous Forward Voltage<br><br>$I_F = 10\text{A}$<br>$I_F = 10\text{A}$<br>$T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$                     |      |      | 2.2<br>2.0     | V             |
| $I_{RM}^*$                       | Maximum Instantaneous Reverse Current<br>@ rated $V_R$<br>$T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$                                                    |      |      | 5<br>50        | $\mu\text{A}$ |
| $t_{rr}$<br>$I_{rr}$<br>$Q_{rr}$ | Maximum Reverse Recovery Time<br>Maximum Reverse Recovery Current<br>Maximum Reverse Recovery Charge<br>( $I_F = 10\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ ) |      |      | 90<br>6<br>270 | ns<br>A<br>nC |
| $W_{AVL}$                        | Avalanche Energy                                                                                                                                                   | 1.0  |      |                | mJ            |

\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%

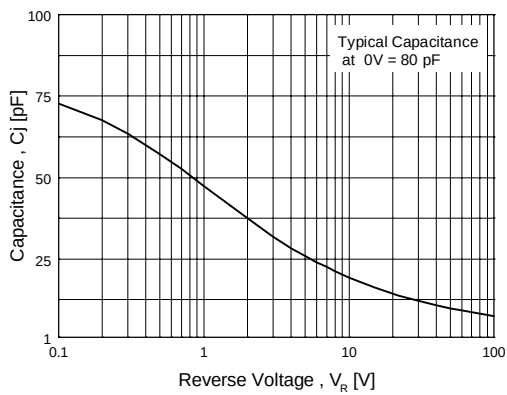
## Typical Characteristics



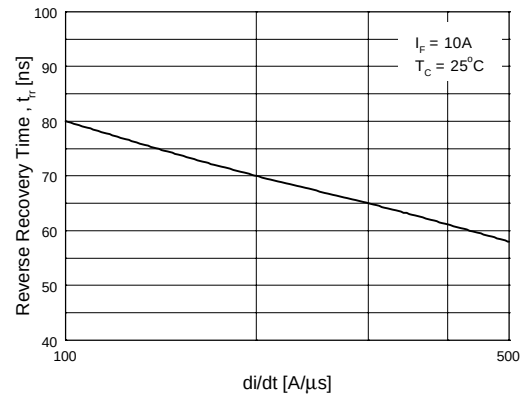
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



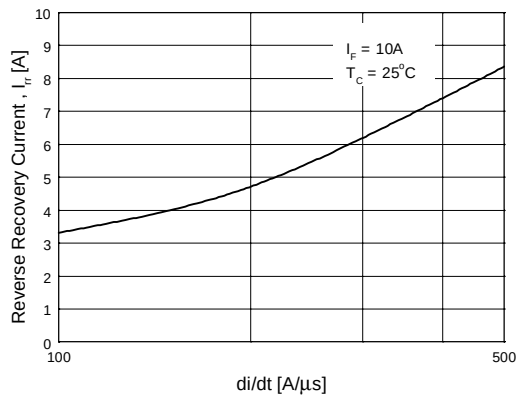
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



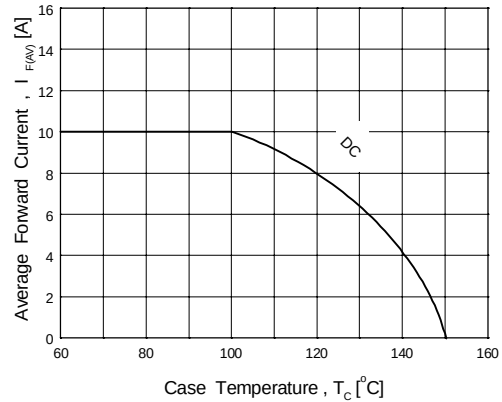
**Figure 3. Typical Junction Capacitance**



**Figure 4. Typical Reverse Recovery Time vs. di/dt**



**Figure 5. Typical Reverse Recovery Current vs. di/dt**

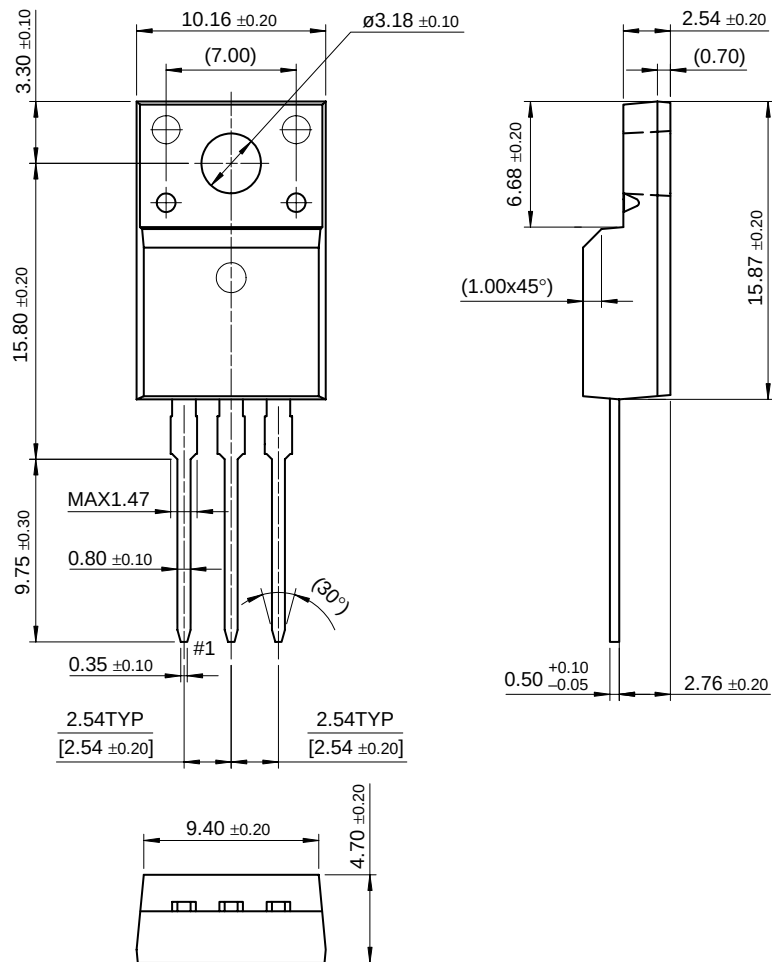


**Figure 6. Forward Current Derating Curve**

# Package Dimensions

## TO-220F

FFPF10U60DN



Dimensions in Millimeters

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| Bottomless™          | GlobalOptoisolator™ | QS™                 |      |
| CoolFET™             | GTO™                | QT Optoelectronics™ |      |
| CROSSVOLT™           | HiSeC™              | Quiet Series™       |      |
| DOVE™                | ISOPANAR™           | SuperSOT™-3         |      |
| E <sup>2</sup> CMOS™ | MICROWIRE™          | SuperSOT™-6         |      |
| EnSigna™             | OPTOLOGIC™          | SuperSOT™-8         |      |
| FACT™                | OPTOPLANAR™         | SyncFET™            |      |
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