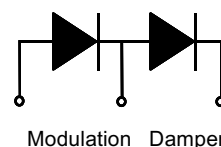
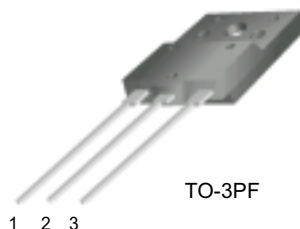


## FFAF60A150DS

### Features

- High voltage and high reliability
- High speed switching  
Modulation diode / Damper diode
- Low conduction loss  
Modulation diode / Damper diode



### Applications

- (Modulation + Damper) diode designed for horizontal deflection circuits in C-TV & monitor

## MODULATION + DAMPER DIODE

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

| Symbol         | Parameter                                                       | Value        | Units            |
|----------------|-----------------------------------------------------------------|--------------|------------------|
| $V_{RRM}$      | Peak Repetitive Reverse Voltage                                 | 600          | V                |
| $I_{F(AV)}$    | Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$   | 20           | A                |
| $I_{FSM}$      | Non-repetitive Peak Surge Current<br>60Hz Single Half-Sine Wave | 120          | A                |
| $T_J, T_{STG}$ | Operating Junction and Storage Temperature                      | - 65 to +150 | $^\circ\text{C}$ |

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

| Symbol         | Parameter                                                       | Value        | Units            |
|----------------|-----------------------------------------------------------------|--------------|------------------|
| $V_{RRM}$      | Peak Repetitive Reverse Voltage                                 | 1500         | V                |
| $I_{F(AV)}$    | Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$   | 6            | 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 | 3.3   | $^\circ\text{C/W}$ |

**Electrical Characteristics\*(Modulation)**  $T_C=25\text{ }^{\circ}\text{C}$  unless otherwise noted

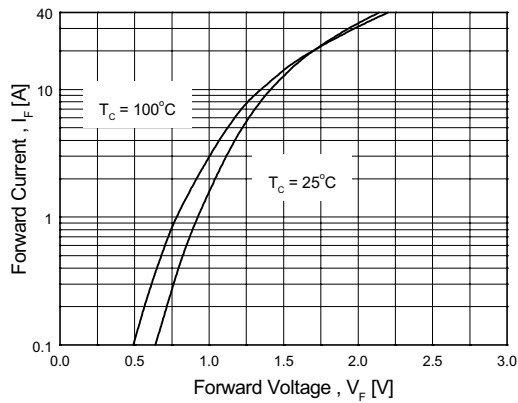
| Symbol   | Parameter                                                                                     | Min. | Typ. | Max.       | Units         |
|----------|-----------------------------------------------------------------------------------------------|------|------|------------|---------------|
| $V_{FM}$ | Maximum Instantaneous Forward Voltage                                                         |      |      |            | V             |
|          | $I_F = 20\text{A}$<br>$I_F = 20\text{A}$                                                      |      |      | 2.2<br>2.0 |               |
| $I_{RM}$ | Maximum Instantaneous Reverse Current<br>@ rated $V_R$                                        |      |      |            | $\mu\text{A}$ |
|          | $T_C = 25\text{ }^{\circ}\text{C}$<br>$T_C = 100\text{ }^{\circ}\text{C}$                     |      |      | 10<br>100  |               |
| $t_{rr}$ | Maximum Reverse Recovery Time                                                                 |      |      | 90         | ns            |
| $I_{rr}$ | Maximum Reverse Recovery Current                                                              |      |      | 8          | A             |
| $Q_{rr}$ | Maximum Reverse Recovery Charge<br>( $I_F = 20\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ ) |      |      | 360        | nC            |

\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%**Electrical Characteristics\*(Damper)**  $T_C=25\text{ }^{\circ}\text{C}$  unless otherwise noted

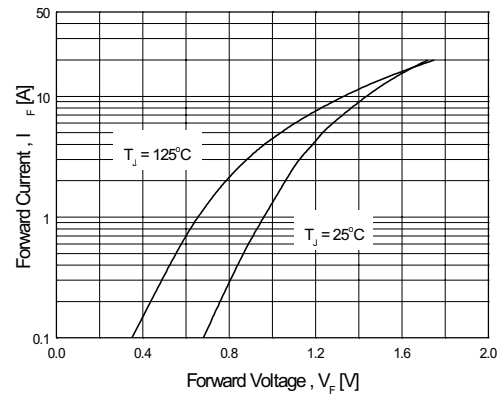
| Symbol    | Parameter                                                                                   | Min | Typ | Max        | Units         |
|-----------|---------------------------------------------------------------------------------------------|-----|-----|------------|---------------|
| $V_{FM}$  | Maximum Instantaneous Forward Voltage                                                       |     |     |            | V             |
|           | $I_F = 6\text{A}$<br>$I_F = 6\text{A}$                                                      |     |     | 1.6<br>1.4 |               |
| $I_{RM}$  | Maximum Instantaneous Reverse Current<br>@ rated $V_R$                                      |     |     |            | $\mu\text{A}$ |
|           | $T_C = 25\text{ }^{\circ}\text{C}$<br>$T_C = 100\text{ }^{\circ}\text{C}$                   |     |     | 7<br>60    |               |
| $t_{rr}$  | Maximum Reverse Recovery Time<br>( $I_F = 1.0\text{A}$ , $di/dt = 50\text{A}/\mu\text{s}$ ) |     |     | 170        | ns            |
| $t_{fr}$  | Maximum Forward Recovery Time<br>( $I_F = 6.5\text{A}$ , $di/dt = 50\text{A}/\mu\text{s}$ ) |     |     | 350        | ns            |
| $V_{FRM}$ | Maximum Forward Recovery Voltage                                                            |     |     | 17         | V             |

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

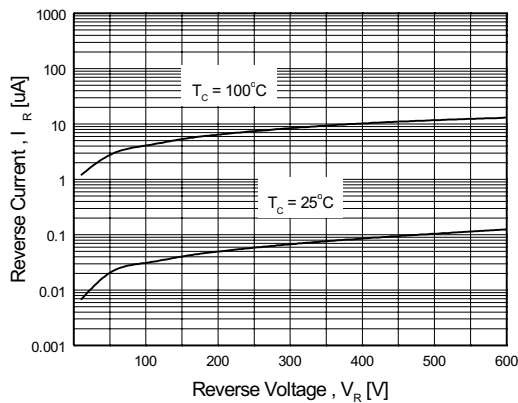
## Typical Characteristics



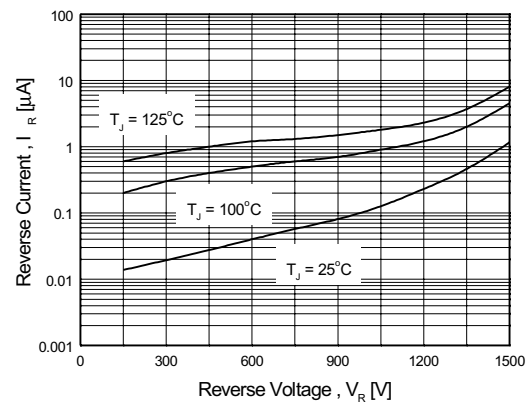
**Figure 1. Typical Forward Characteristics (Modulation Diode)**



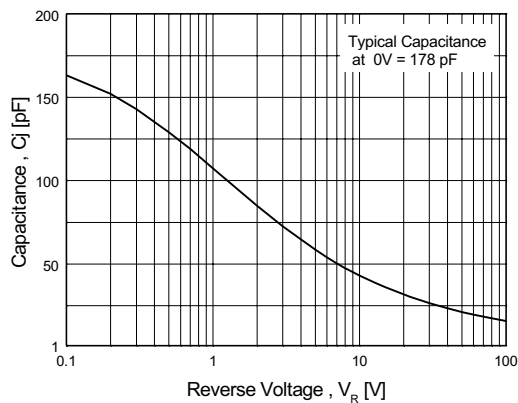
**Figure 2. Typical Forward Characteristics (Damper Diode)**



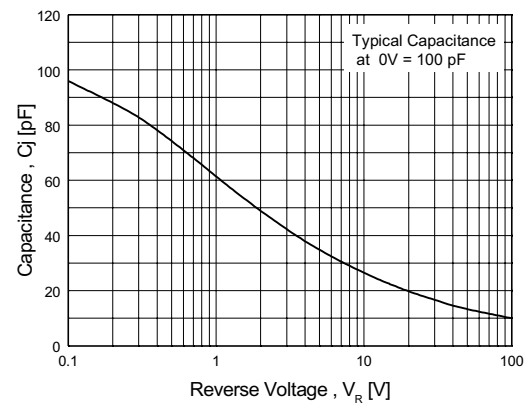
**Figure 3. Typical Reverse Current vs. Reverse Voltage (Modulation Diode)**



**Figure 4. Typical Reverse Current vs. Reverse Voltage (Damper Diode)**

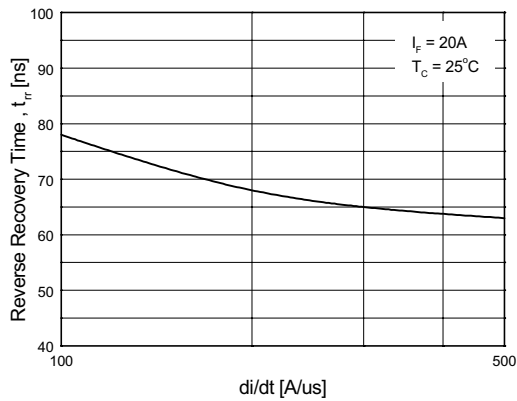


**Figure 5. Typical Junction Capacitance (Modulation Diode)**

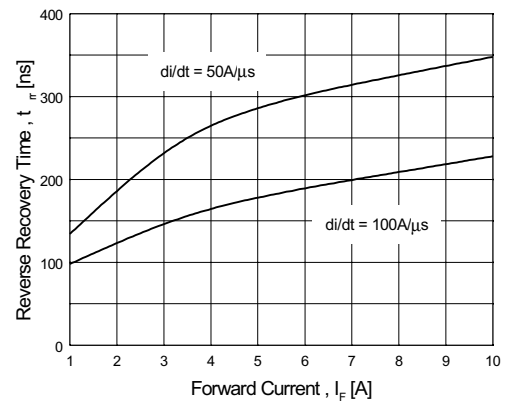


**Figure 6. Typical Junction Capacitance (Damper Diode)**

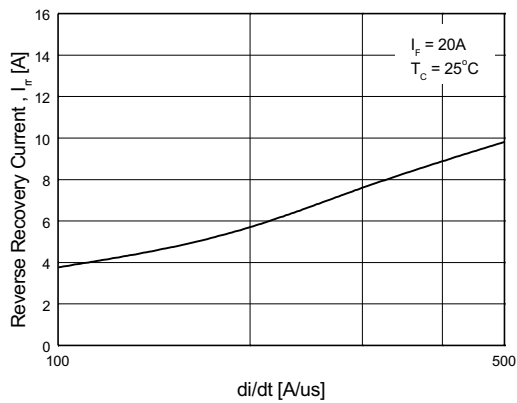
## Typical Characteristics



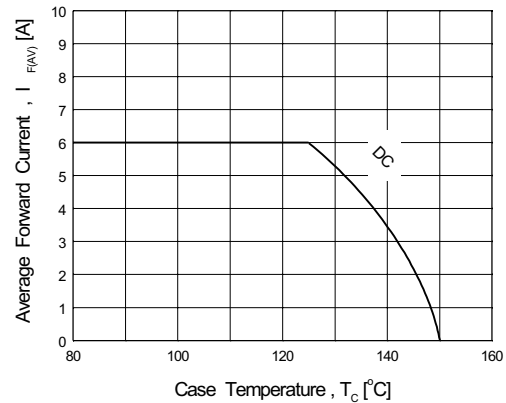
**Figure 7. Typical Reverse Recovery Time vs. di/dt (Modulation Diode)**



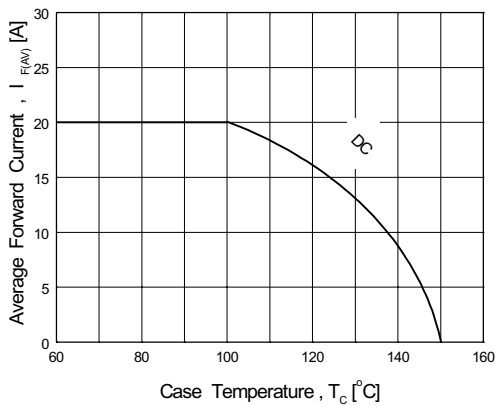
**Figure 8. Typical Reverse Recovery Time vs. di/dt (Damper Diode)**



**Figure 9. Typical Reverse Recovery Current vs. di/dt (Modulation Diode)**



**Figure 10. Forward Current Derating Curve (Damper Diode)**



**Figure 11. Forward Current Derating Curve (Modulation Diode)**

**FFAF60A150DS**[illegible]

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