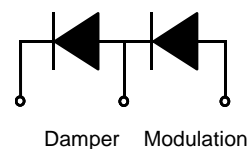


## FFPF60B150DS

### 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-TVs & monitors

## DAMPER + MODULATION 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 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 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

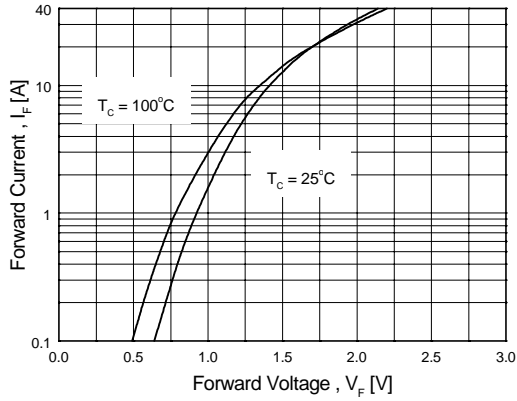
Symbol	Parameter	Min.	Typ.	Max.	Units
$V_{FM}$	Maximum Instantaneous Forward Voltage				V
	$I_F = 20\text{A}$ $I_F = 20\text{A}$			2.2 2.0	
$I_{RM}$	Maximum Instantaneous Reverse Current @ rated $V_R$				$\mu\text{A}$
	$T_C = 25\text{ }^\circ\text{C}$ $T_C = 100\text{ }^\circ\text{C}$			10 100	
$t_{rr}$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

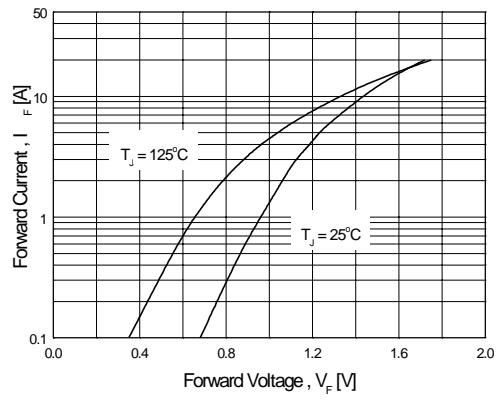
Symbol	Parameter	Min	Typ	Max	Units
$V_{FM}$	Maximum Instantaneous Forward Voltage				V
	$I_F = 6\text{A}$ $I_F = 6\text{A}$			1.6 1.4	
$I_{RM}$	Maximum Instantaneous Reverse Current @ rated $V_R$				$\mu\text{A}$
	$T_C = 25\text{ }^\circ\text{C}$ $T_C = 100\text{ }^\circ\text{C}$			7 60	
$t_{rr}$	Maximum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

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

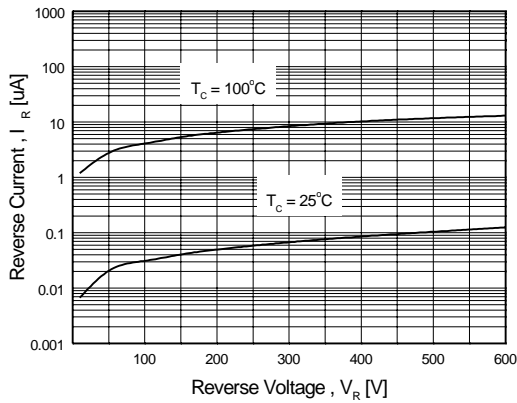
# Typical Characteristics



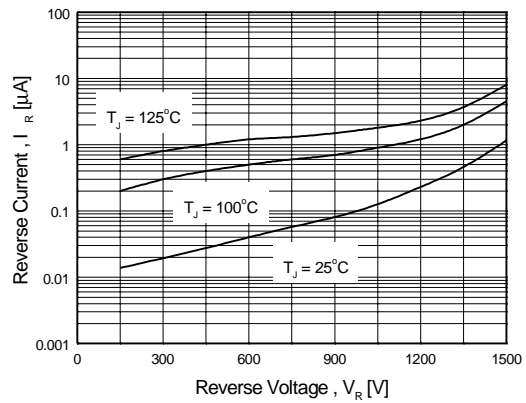
**Figure 1. Typical Forward Characteristics (Modulation Diode)**



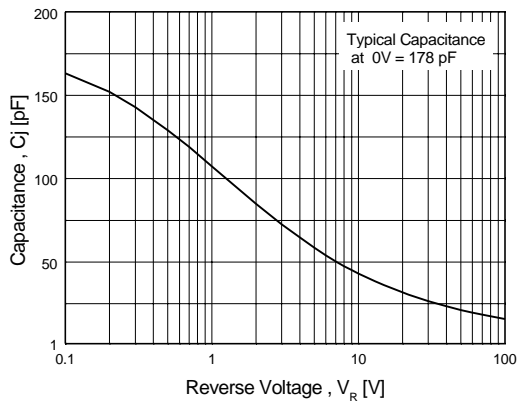
**Figure 2. Typical Forward Characteristics (Damper Diode)**



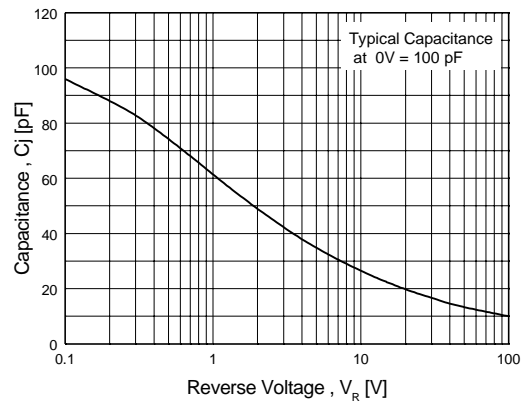
**Figure 3. Typical Reverse Current vs. Reverse Voltage (Modulation Diode)**



**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

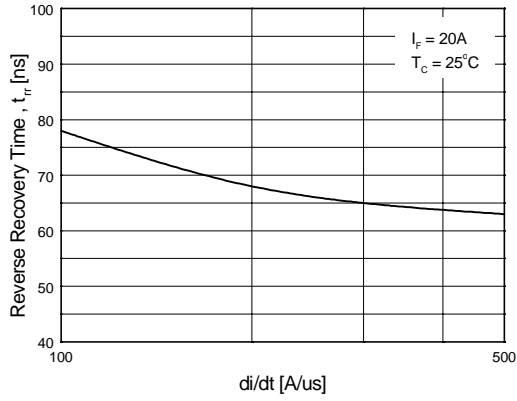


Figure 7. Typical Reverse Recovery Time vs. di/dt (Modulation Diode)

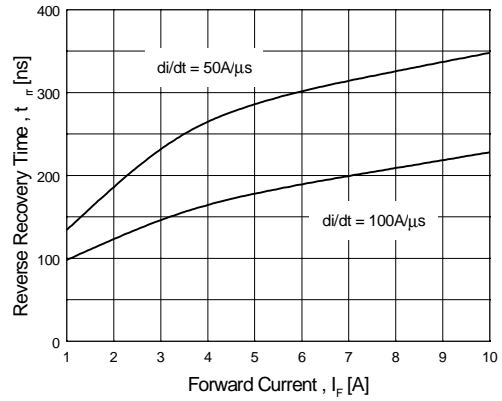


Figure 8. Typical Reverse Recovery Time vs. di/dt (Damper Diode)

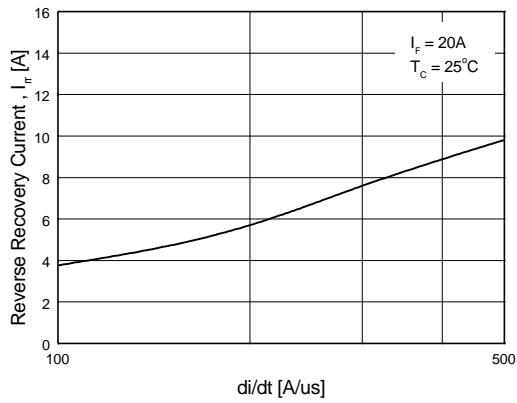


Figure 9. Typical Reverse Recovery Current vs. di/dt (Modulation Diode)

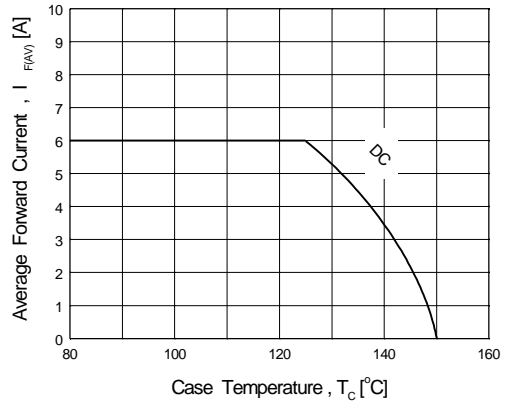


Figure 10. Forward Current Derating Curve (Damper Diode)

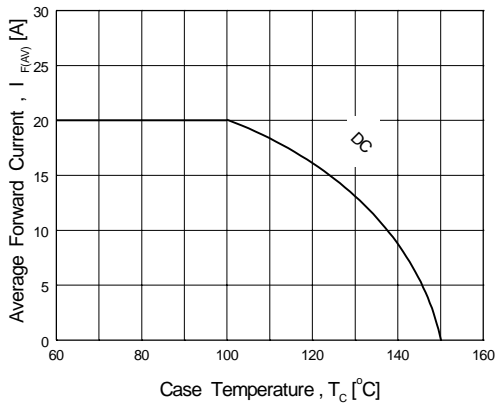
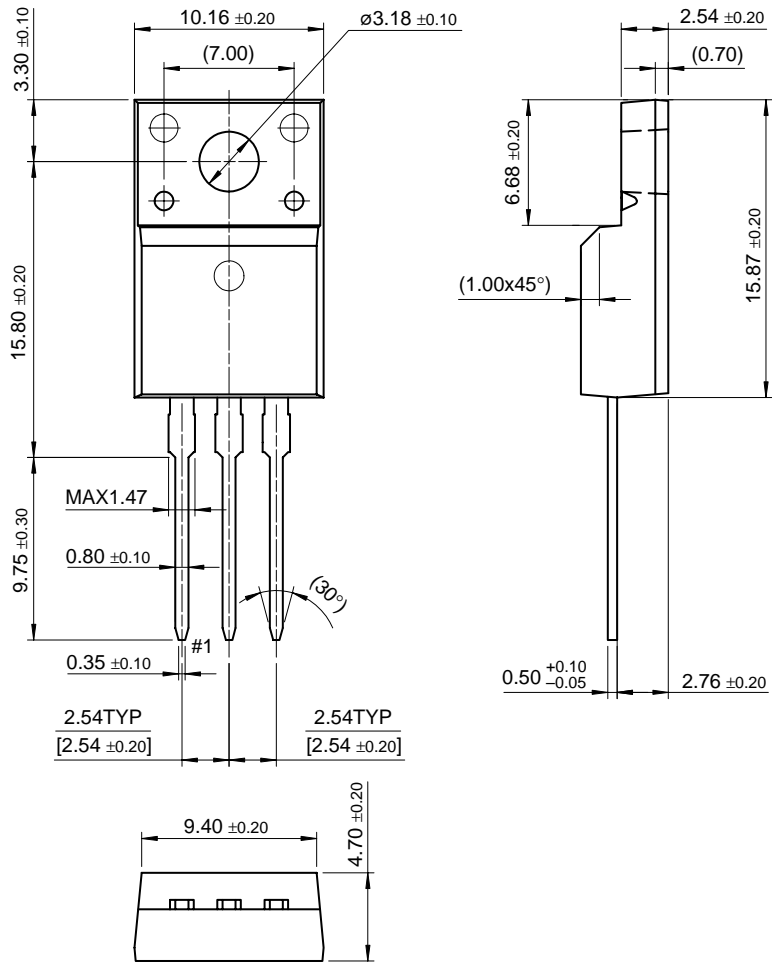


Figure 11. Forward Current Derating Curve (Modulation Diode)

# Package Dimensions

## TO-220F

FFPF60B150DS



Dimensions in Millimeters

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CROSSVOLT™	GTO™	QFET™	SyncFET™
DenseTrench™	HiSeC™	Q5™	TinyLogic™
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E <sup>2</sup> CMOS™	MicroFET™	SLIENT SWITCHER <sup>®</sup>	VCX™
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