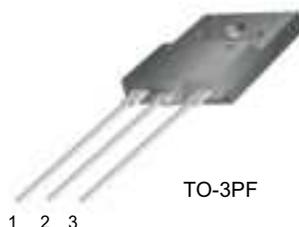


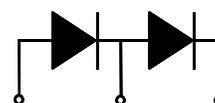
FFAF60A150DS

Features

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



TO-3PF



Modulation Damper

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 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 $I_F = 20\text{A}$ $I_F = 20\text{A}$			2.2	V
				$T_C = 25\text{ }^\circ\text{C}$	
I_{RM}	Maximum Instantaneous Reverse Current @ rated V_R			10	μA
				$T_C = 25\text{ }^\circ\text{C}$	
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 μs , 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 $I_F = 6\text{A}$ $I_F = 6\text{A}$			1.6	V
				$T_C = 25\text{ }^\circ\text{C}$	
I_{RM}	Maximum Instantaneous Reverse Current @ rated V_R			7	μA
				$T_C = 25\text{ }^\circ\text{C}$	
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 μs , Duty Cycle=2%

Typical Characteristics

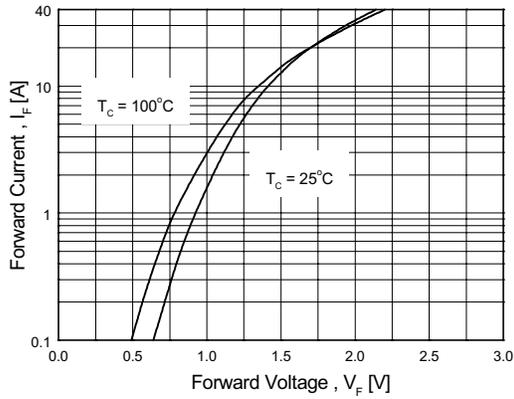


Figure 1. Typical Forward Characteristics (Modulation Diode)

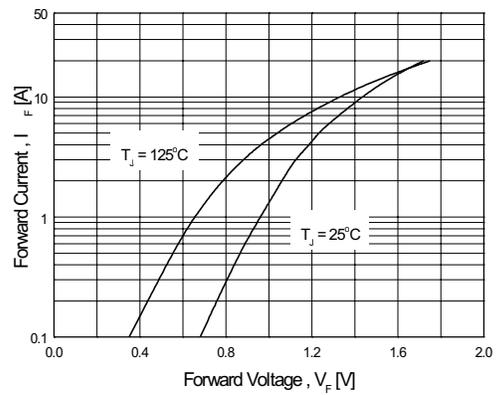


Figure 2. Typical Forward Characteristics (Damper Diode)

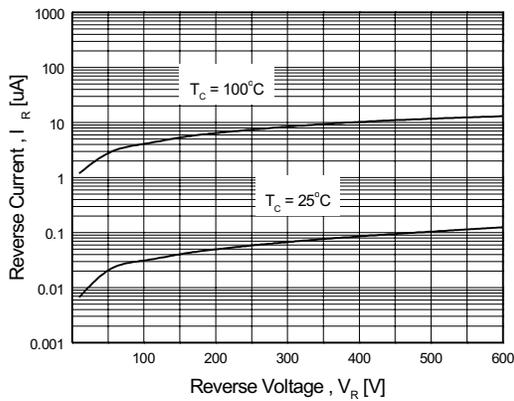


Figure 3. Typical Reverse Current vs. Reverse Voltage (Modulation Diode)

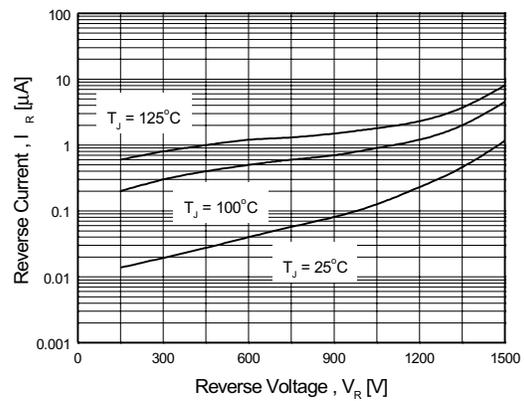


Figure 4. Typical Reverse Current vs. Reverse Voltage (Damper Diode)

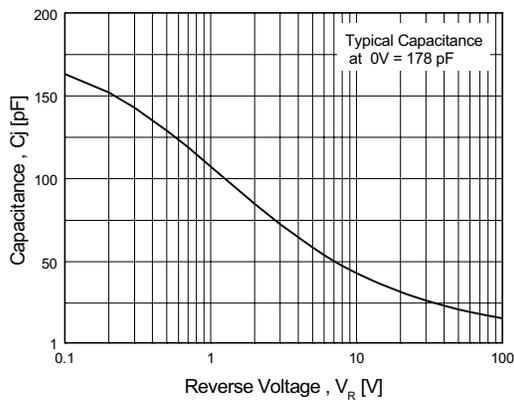


Figure 5. Typical Junction Capacitance (Modulation Diode)

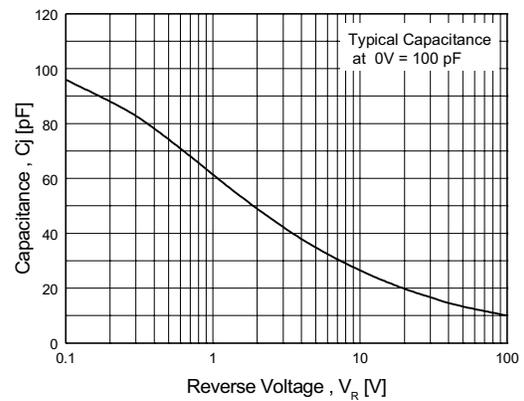


Figure 6. Typical Junction Capacitance (Damper Diode)

Typical Characteristics

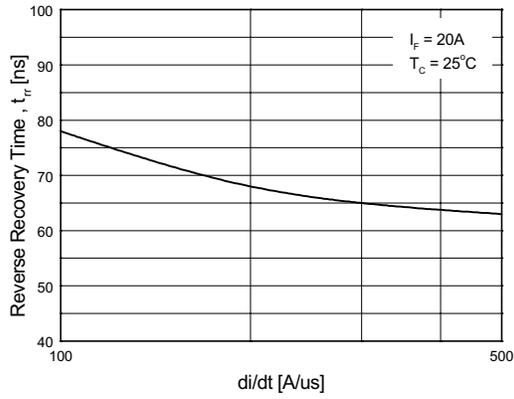


Figure 7. Typical Reverse Recovery Time vs. di/dt (Modulation Diode)

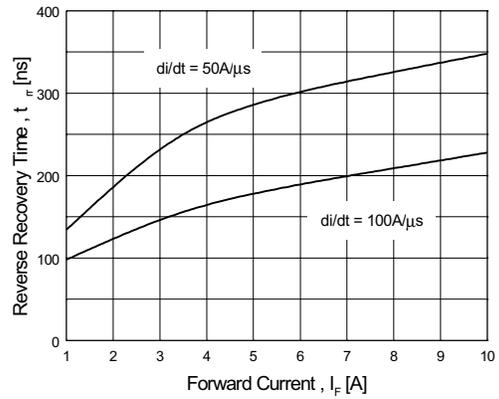


Figure 8. Typical Reverse Recovery Time vs. di/dt (Damper Diode)

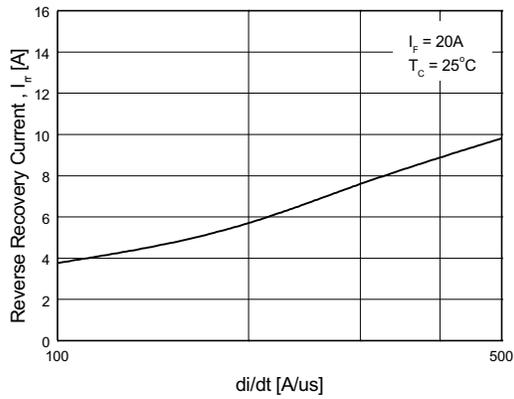


Figure 9. Typical Reverse Recovery Current vs. di/dt (Modulation Diode)

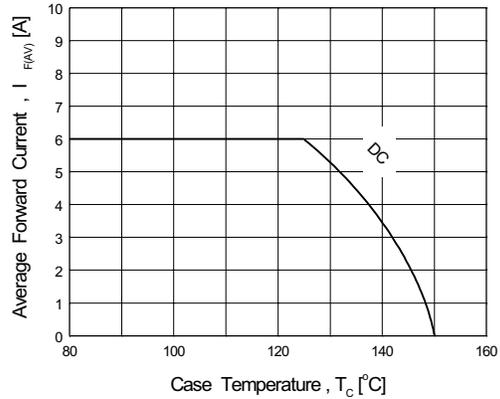


Figure 10. Forward Current Derating Curve (Damper Diode)

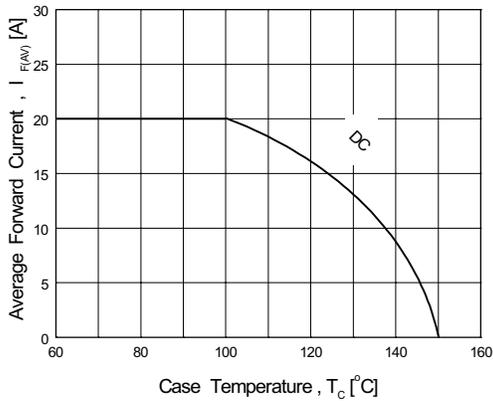
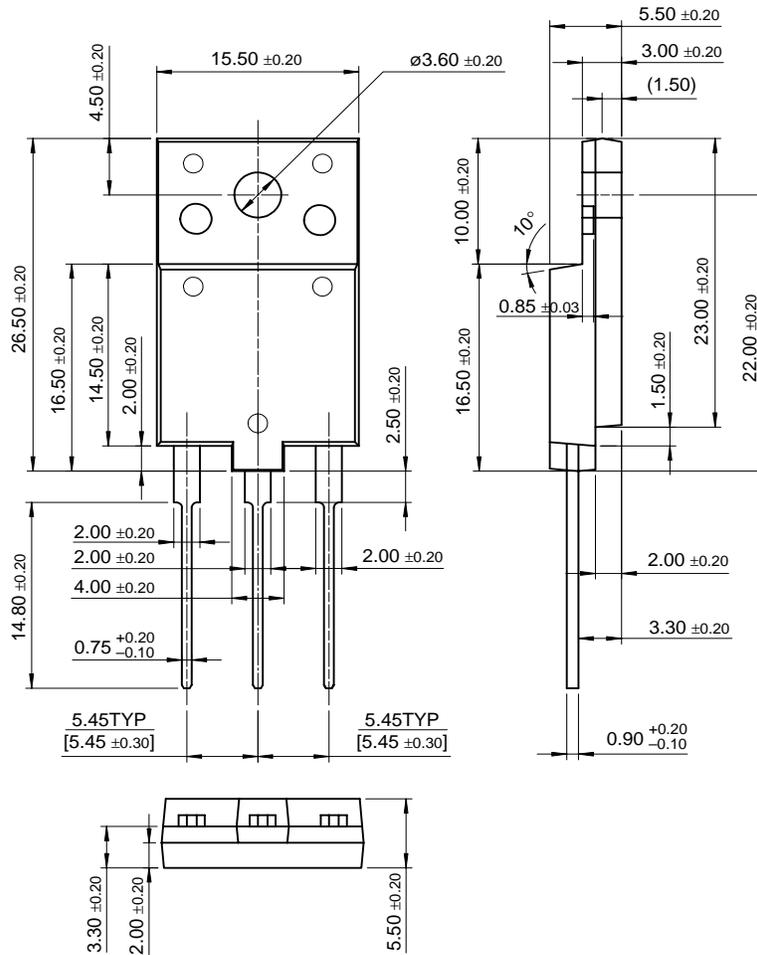


Figure 11. Forward Current Derating Curve (Modulation Diode)

Package Dimensions

TO-3PF

FFAF60A150DS



Dimensions in Millimeters

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	HiSeC™	SuperSOT™-8
Bottomless™	ISOPLANAR™	SyncFET™
CoolFET™	MICROWIRE™	TinyLogic™
CROSSVOLT™	POP™	UHC™
E ² CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
FACT Quiet Series™	QS™	
FAST®	Quiet Series™	
FASTr™	SuperSOT™-3	
GTO™	SuperSOT™-6	

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR INTERNATIONAL.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.