

# FFPF10F150S

## 10 A, 1500 V, Damper Diode

### Features

- High Speed Recovery  $t_{RR} = 170 \text{ ns}$  (@  $I_F = 1 \text{ A}$ )
- Max Forward Voltage,  $V_F = 1.6 \text{ V}$  (@  $T_C = 25^\circ\text{C}$ )
- 1500 V Reverse Voltage and High Reliability
- Low Forward Voltage
- This Device is Pb-Free and is RoHS Compliant

### Applications

- Suitable for Damper Diode in Horizontal Deflection Circuits

### ABSOLUTE MAXIMUM RATINGS

$T_C = 25^\circ\text{C}$  unless otherwise noted

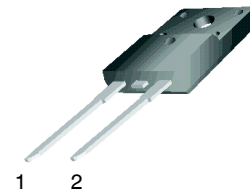
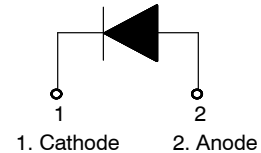
Symbol	Parameter	Rating	Unit
VRRM	Peak Repetitive Reverse Voltage	1500	V
VRWM	Working Peak Reverse Voltage	1500	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 125^\circ\text{C}$	10	A
IFSM	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	100	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	- 65 to +175	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



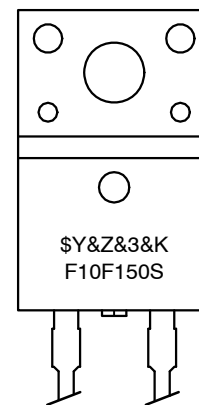
ON Semiconductor®

[www.onsemi.com](http://www.onsemi.com)



TO-220, 2-Lead  
CASE 221AS

### MARKING DIAGRAM



\$Y                    = ON Semiconductor Logo  
&Z&3                = Data Code (Year & Week)  
&K                    = Lot  
F10F150S           = Specific Device Code

### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

# FFPF10F150S

## THERMAL CHARACTERISTICS $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	3.0	$^\circ\text{C}/\text{W}$

## PACKAGE MARKING AND ORDERING INFORMATION

Part Number	Top Mark	Package	Packing Method	Reel Size	Tape Width	Quantity
FFPF10F150STU	F10F150S	TO-220F-2L	Tube	N/A	N/A	30

## ELECTRICAL CHARACTERISTICS $T_C = 25^\circ\text{C}$ unless otherwise noted

Parameter	Conditions	Min.	Typ.	Max.	Unit	
$V_F$ (Note 1)	Maximum Instantaneous Forward Voltage $I_F = 10\text{ A}$ $I_F = 10\text{ A}$	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	- -	- -	1.6 1.4	V
$I_R$ (Note 1)	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	- -	- -	10 80	$\mu\text{A}$
$t_{RR}$	Maximum Reverse Recovery Time ( $I_F = 1\text{ A}$ , $di_F/dt = 50\text{ A}/\mu\text{s}$ , $V_R = 30\text{ V}$ )		-	-	170	ns
$t_{FR}$	Maximum Forward Recovery Time ( $I_F = 6.5\text{ A}$ , $di_F/dt = 50\text{ A}/\mu\text{s}$ )		-	-	250	ns
$V_{FRM}$	Maximum Forward Recovery Voltage		-	-	14	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

## Test Circuit and Waveforms

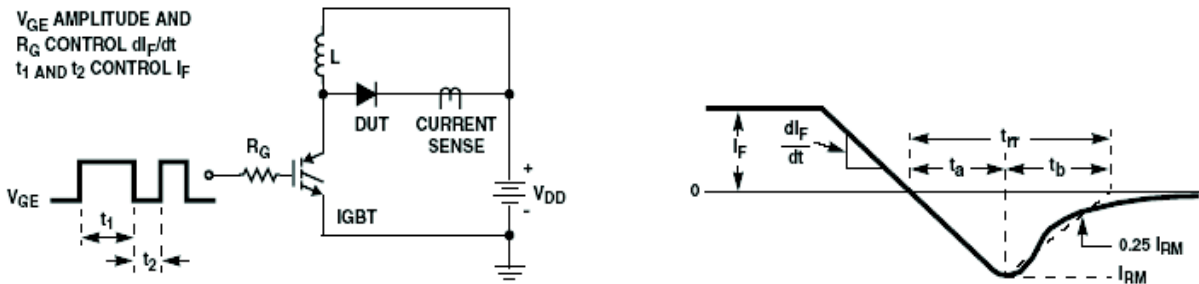


Figure 1. Diode Reverse Recovery Test Circuit & Waveform

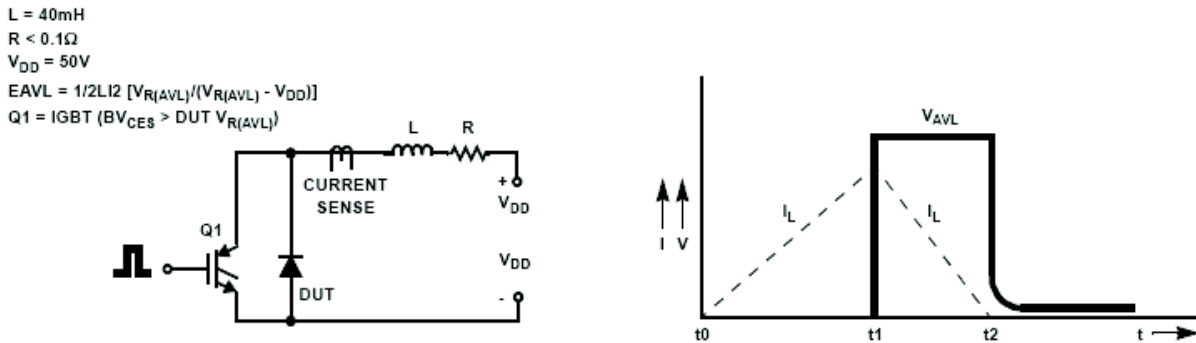


Figure 2. Unclamped Inductive Switching Test Circuit & Waveform

# FFPF10F150S

## TYPICAL CHARACTERISTICS

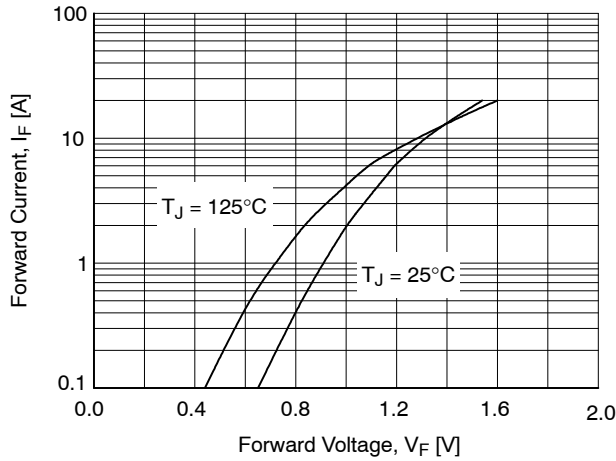


Figure 3. Typical Forward Voltage Drop

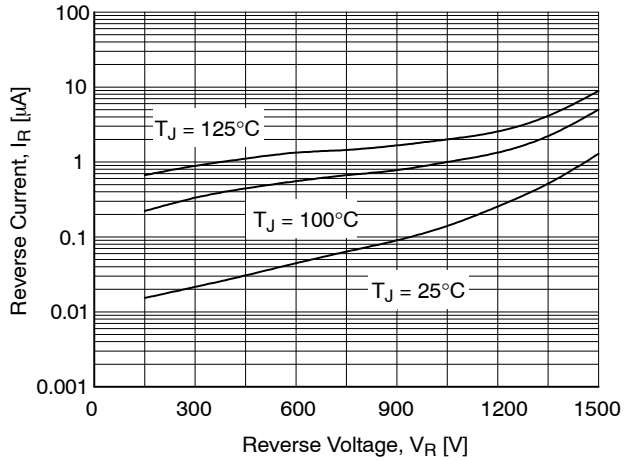


Figure 4. Typical Reverse Current

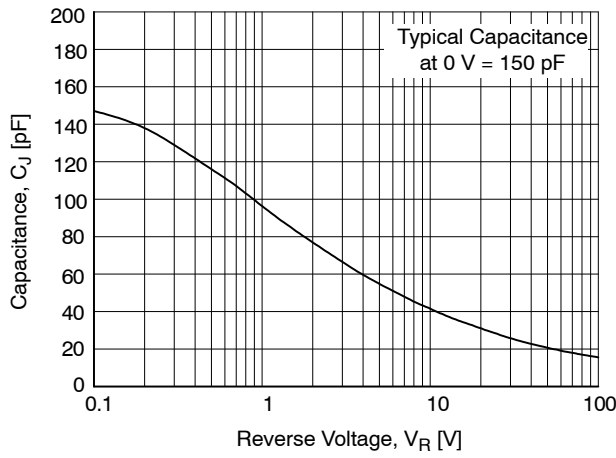


Figure 5. Typical Junction Capacitance

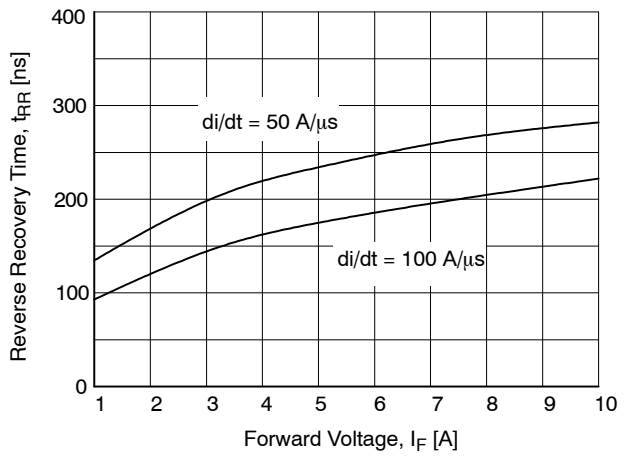


Figure 6. Typical Reverse Recovery Time

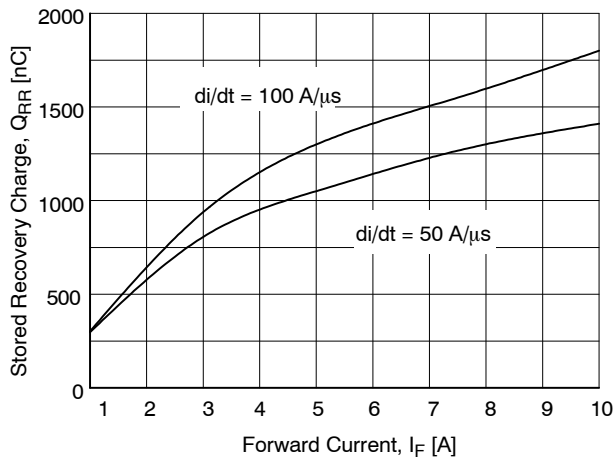


Figure 7. Typical Stored Charge

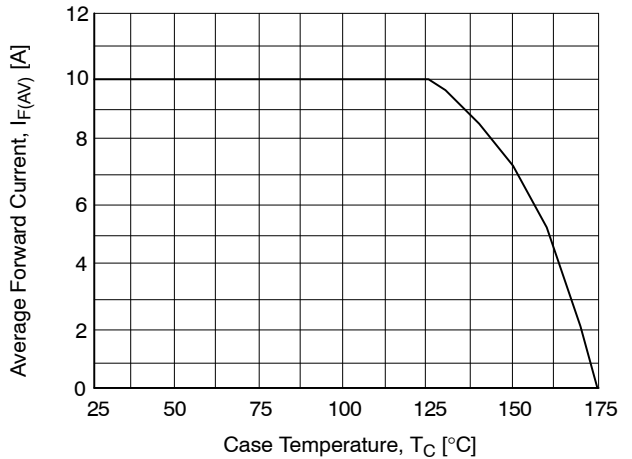


Figure 8. Forward Current Deration Curve

# MECHANICAL CASE OUTLINE

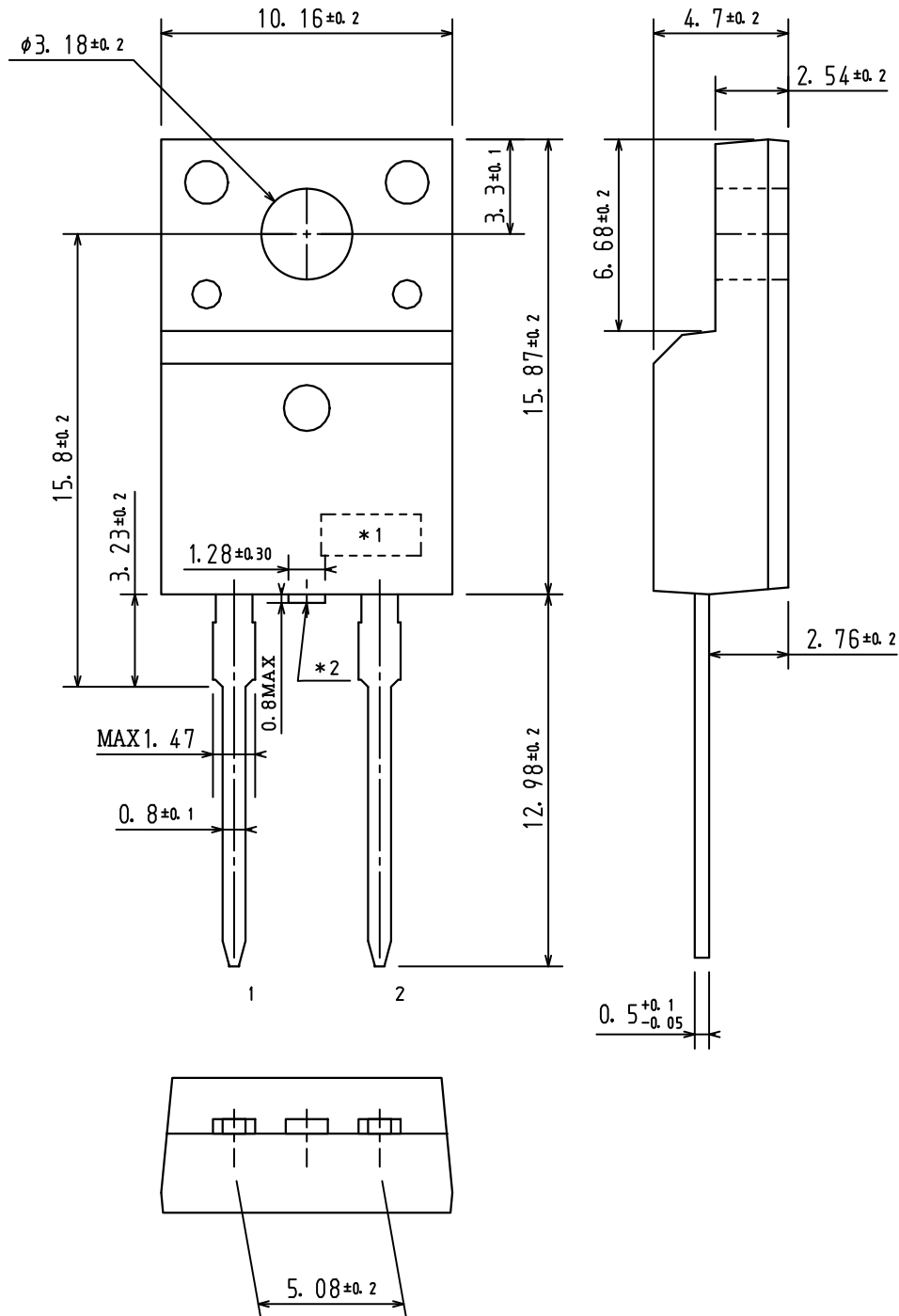
## PACKAGE DIMENSIONS

ON Semiconductor®



TO-220 Fullpack, 2-Lead / TO-220F-2FS  
 CASE 221AS  
 ISSUE O

DATE 29 FEB 2012



<b>DOCUMENT NUMBER:</b>	<b>98AON67438E</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>TO-220 FULLPACK, 2-LEAD / TO-220F-2FS</b>	<b>PAGE 1 OF 1</b>

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Email Requests to: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

ON Semiconductor Website: [www.onsemi.com](http://www.onsemi.com)

### TECHNICAL SUPPORT

North American Technical Support:  
Voice Mail: 1 800-282-9855 Toll Free USA/Canada  
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:  
Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative