



FFPF10F150S 10 A, 1500 V, Damper Diode

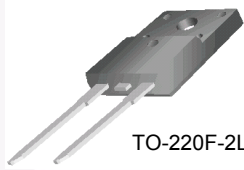
Features

- 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

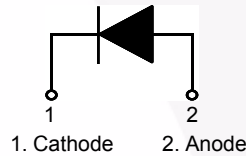
Applications

- Suitable for Damper Diode in Horizontal Deflection Circuits

Pin Assignments



1. Cathode 2. Anode



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

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

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	$^\circ\text{C/W}$

Package Marking and Ordering Information

Part Number	Top Mark	Package	Packing Method	Reel Size	Tape Width	Quantity
FFPF10F150STU	FFPF10F150S	TO-220F-2L	Tube	N/A	N/A	30

Electrical Characteristics T_C = 25°C unless otherwise noted

Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F^1	Maximum Instantaneous Forward Voltage $I_F = 10\text{ A}$ $I_F = 10\text{ A}$	$T_C = 25\text{ }^\circ\text{C}$ $T_C = 125\text{ }^\circ\text{C}$	- -	1.6 1.4	V
I_R^1	Maximum Instantaneous Reverse Current @ rated V_R	$T_C = 25\text{ }^\circ\text{C}$ $T_C = 125\text{ }^\circ\text{C}$	- -	10 80	μA
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

Notes:

1. Pulse : Test Pulse Width = 300 μs , Duty Cycle = 2%

Test Circuit and Waveforms

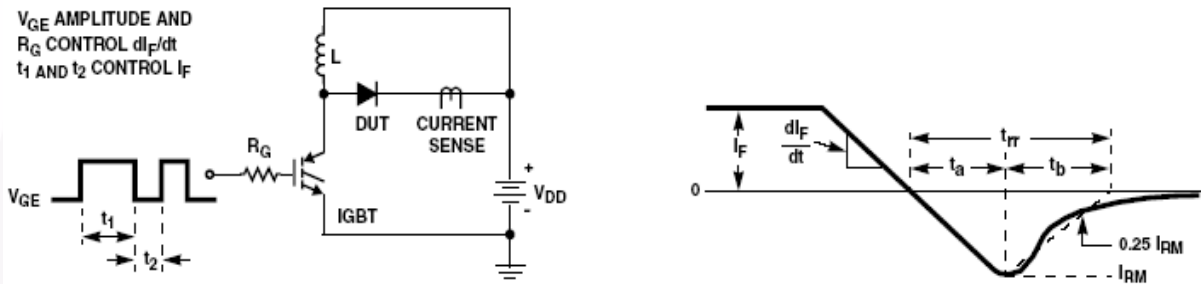


Figure 1. Diode Reverse Recovery Test Circuit & Waveform

$L = 40\text{ mH}$
 $R < 0.1\Omega$
 $V_{DD} = 50\text{ V}$

$E_{AVL} = 1/2LI^2 [V_{R(AVL)}/(V_{R(AVL)} - V_{DD})]$
 $Q1 = \text{IGBT } (BV_{CES} > \text{DUT } V_{R(AVL)})$

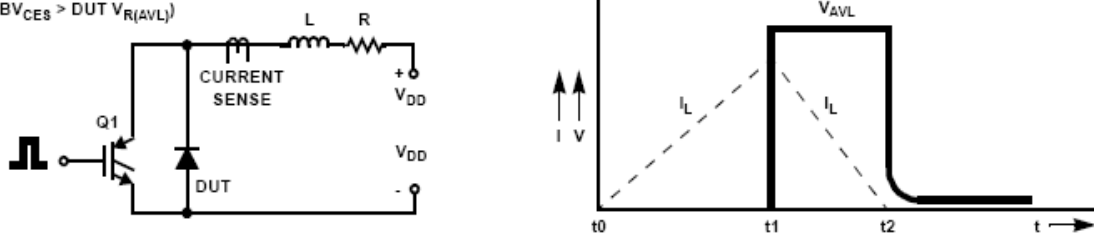


Figure 2. Unclamped Inductive Switching Test Circuit & Waveform

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

Figure 3. Typical Forward Voltage Drop

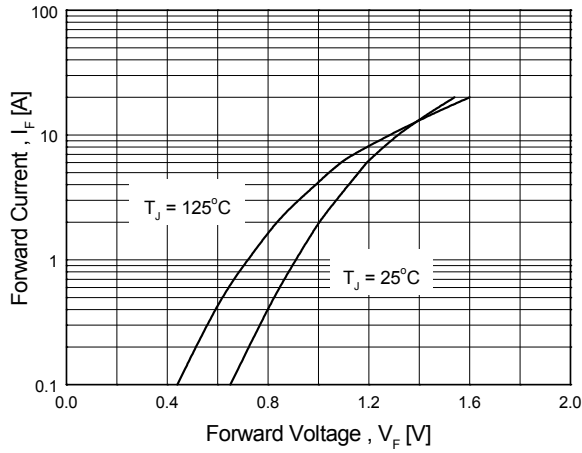


Figure 4. Typical Reverse Current

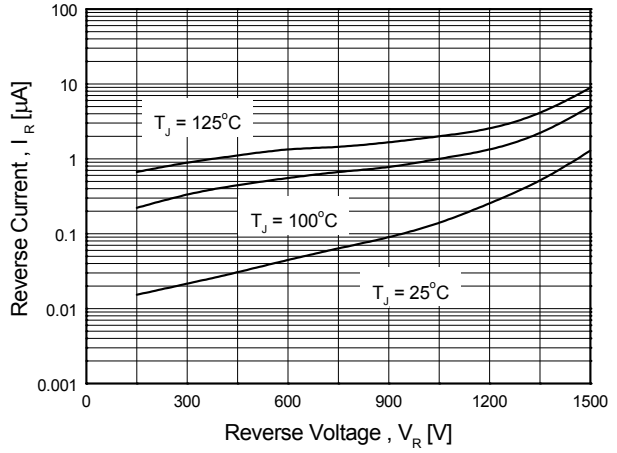


Figure 5. Typical Junction Capacitance

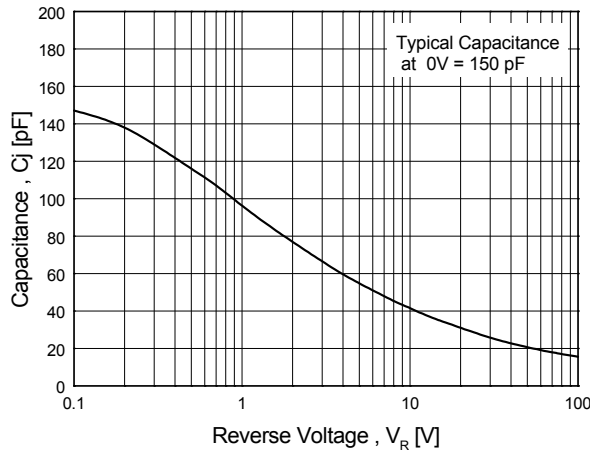


Figure 6. Typical Reverse Recovery Time

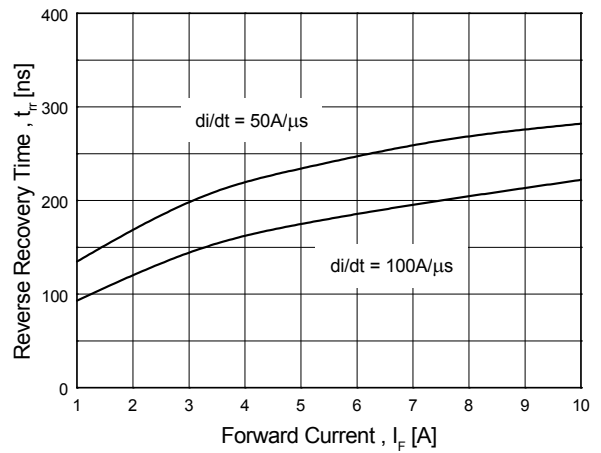


Figure 7. Typical Stored Charge

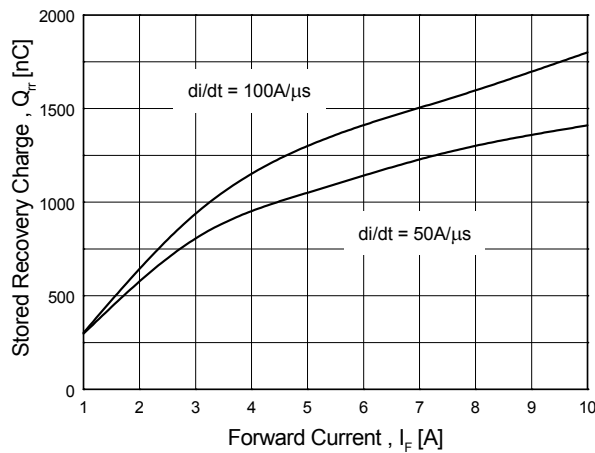
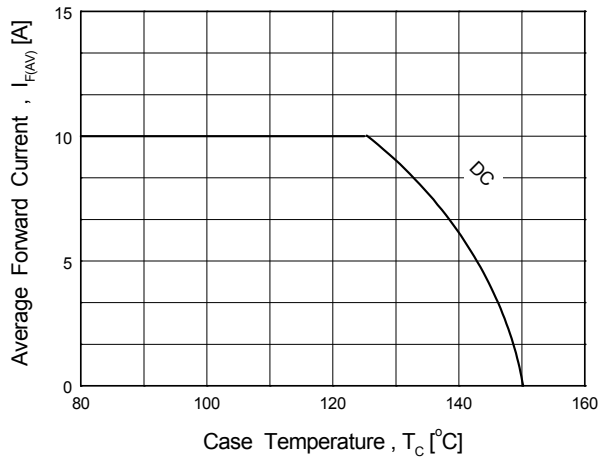
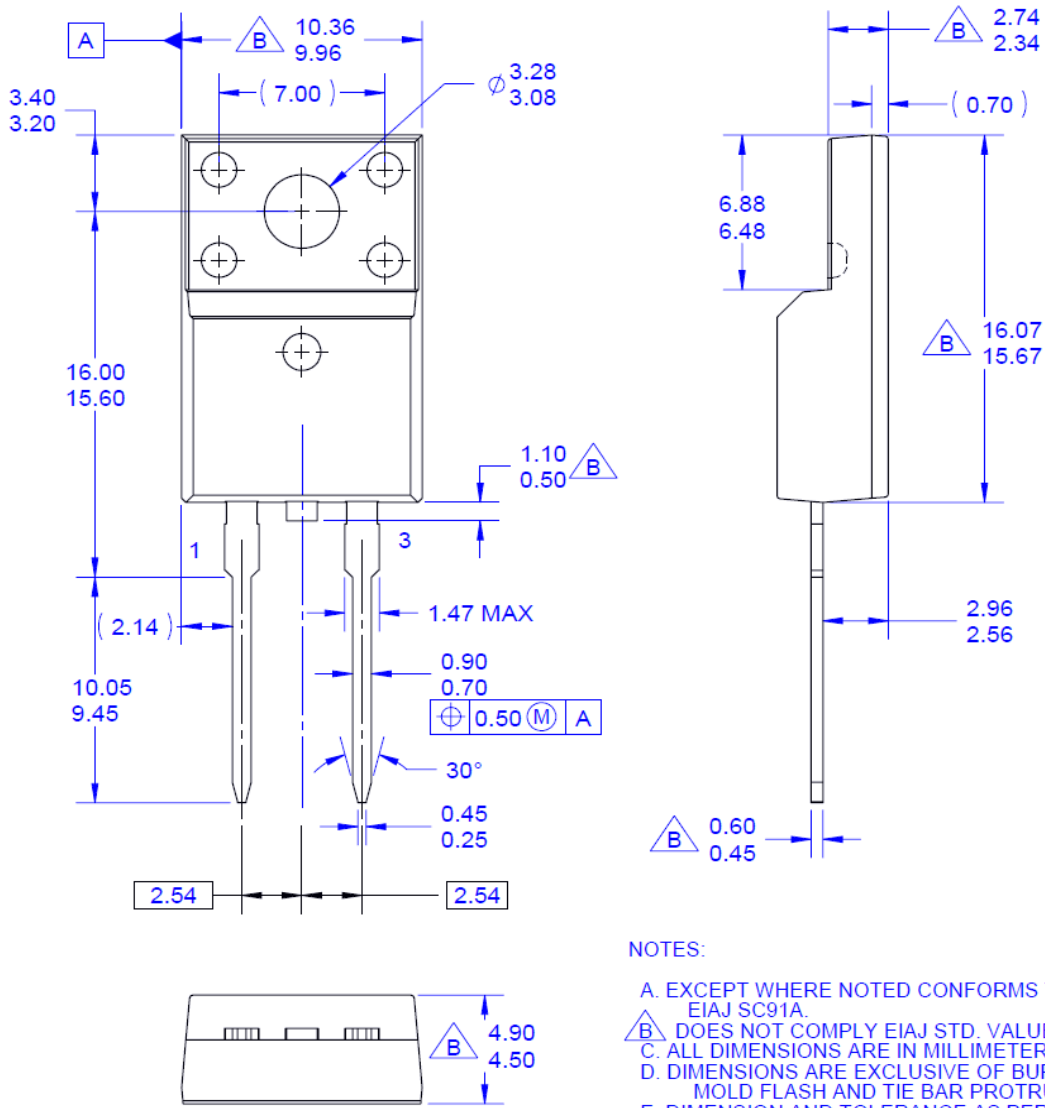


Figure 8. Forward Current Deration Curve



Mechanical Dimensions



NOTES:

- A. EXCEPT WHERE NOTED CONFORMS TO EIAJ SC91A.
- B. DOES NOT COMPLY EIAJ STD. VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
- F. DRAWING FILE NAME: TO220C02REV2

Figure 9. TO-220F 2L - 2LD; TO220; MOLDED; FULL PACK

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Rev. I71