



November 2014

FFPF10F150S 10 A, 1500 V, Damper Diode



FFPF10F150S — Damper Diode

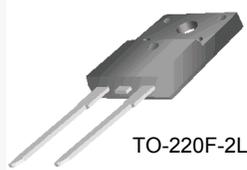
Features

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

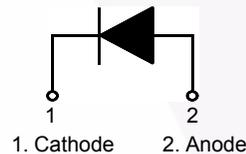
Applications

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

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 A I _F = 10 A	T _C = 25 °C T _C = 125 °C	- -	1.6 1.4	V
I _R ¹	Maximum Instantaneous Reverse Current @ rated V _R	T _C = 25 °C T _C = 125 °C	- -	10 80	μA
t _{rr}	Maximum Reverse Recovery Time (I _F = 1 A, di _F /dt = 50 A/μs, V _R = 30 V)			170	ns
t _{fr}	Maximum Forward Recovery Time (I _F = 6.5 A, di _F /dt = 50 A/μs)			250	ns
V _{FRM}	Maximum Forward Recovery Voltage			14	V

Notes:

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

Test Circuit and Waveforms

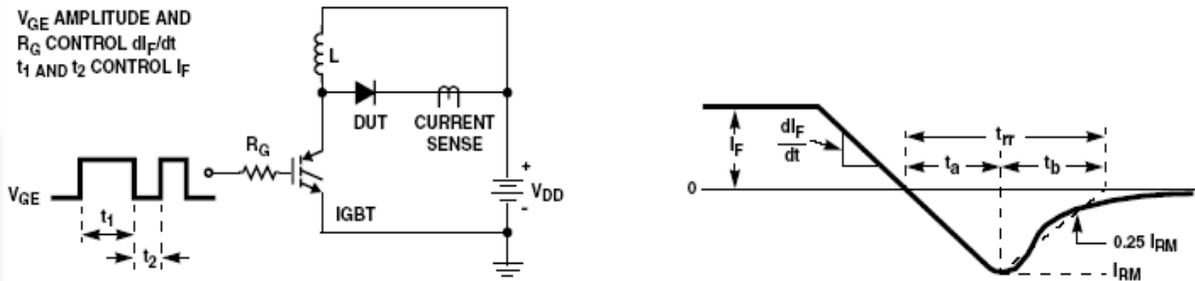


Figure 1. Diode Reverse Recovery Test Circuit & Waveform

L = 40mH
R < 0.1Ω
V_{DD} = 50V

EAVL = 1/2LI₂ [V_{R(AVL)}/(V_{R(AVL)} - V_{DD})]
Q1 = IGBT (BV_{CES} > DUT V_{R(AVL)})

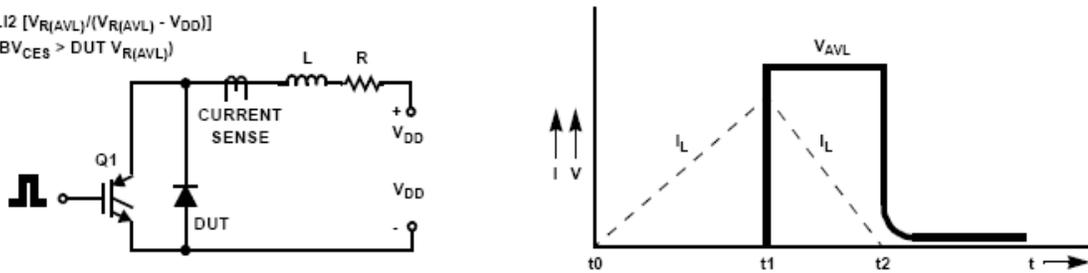


Figure 2. Unclamped Inductive Switching Test Circuit & Waveform

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

Figure 3. Typical Forward Voltage Drop

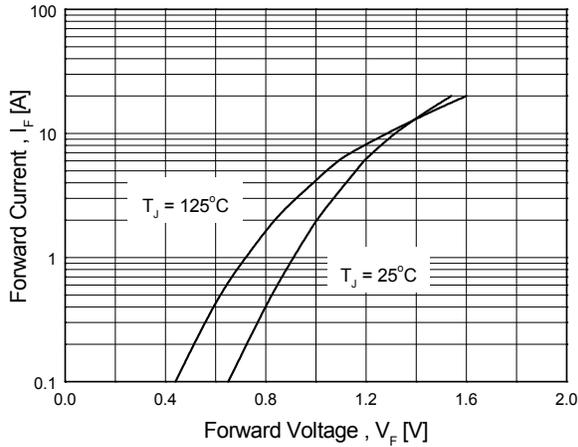


Figure 4. Typical Reverse Current

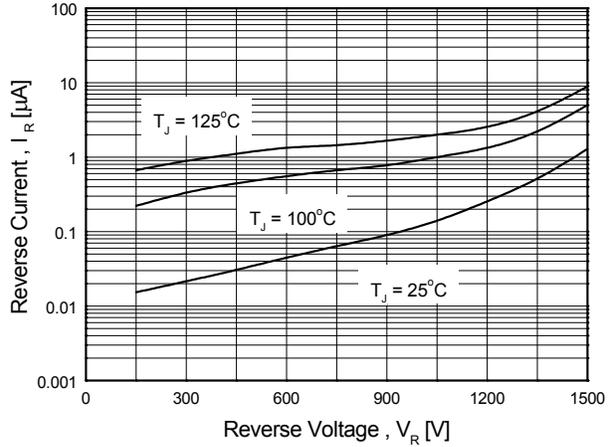


Figure 5. Typical Junction Capacitance

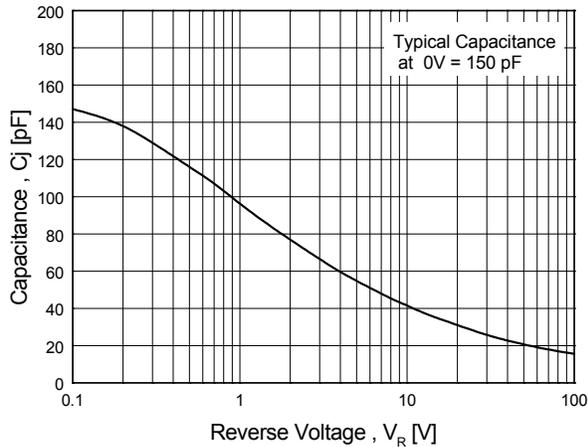


Figure 6. Typical Reverse Recovery Time

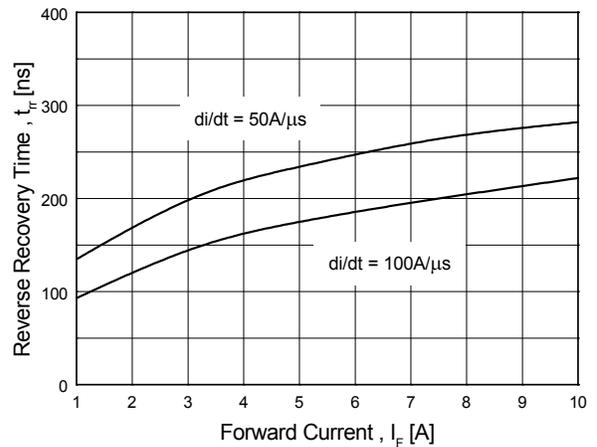


Figure 7. Typical Stored Charge

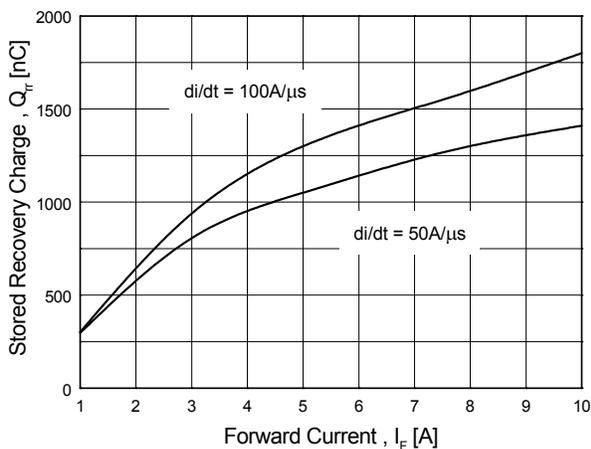
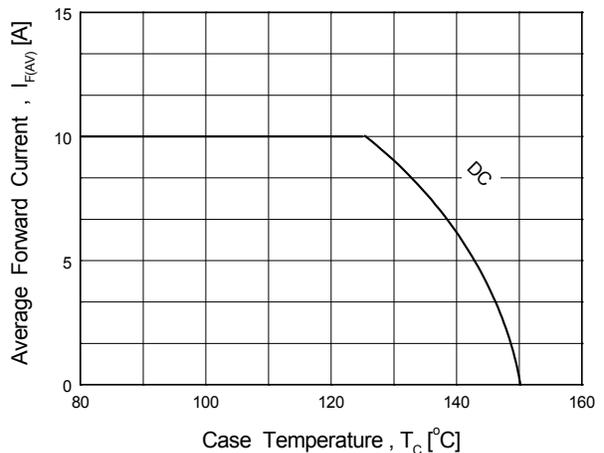


Figure 8. Forward Current Deration Curve



Mechanical Dimensions

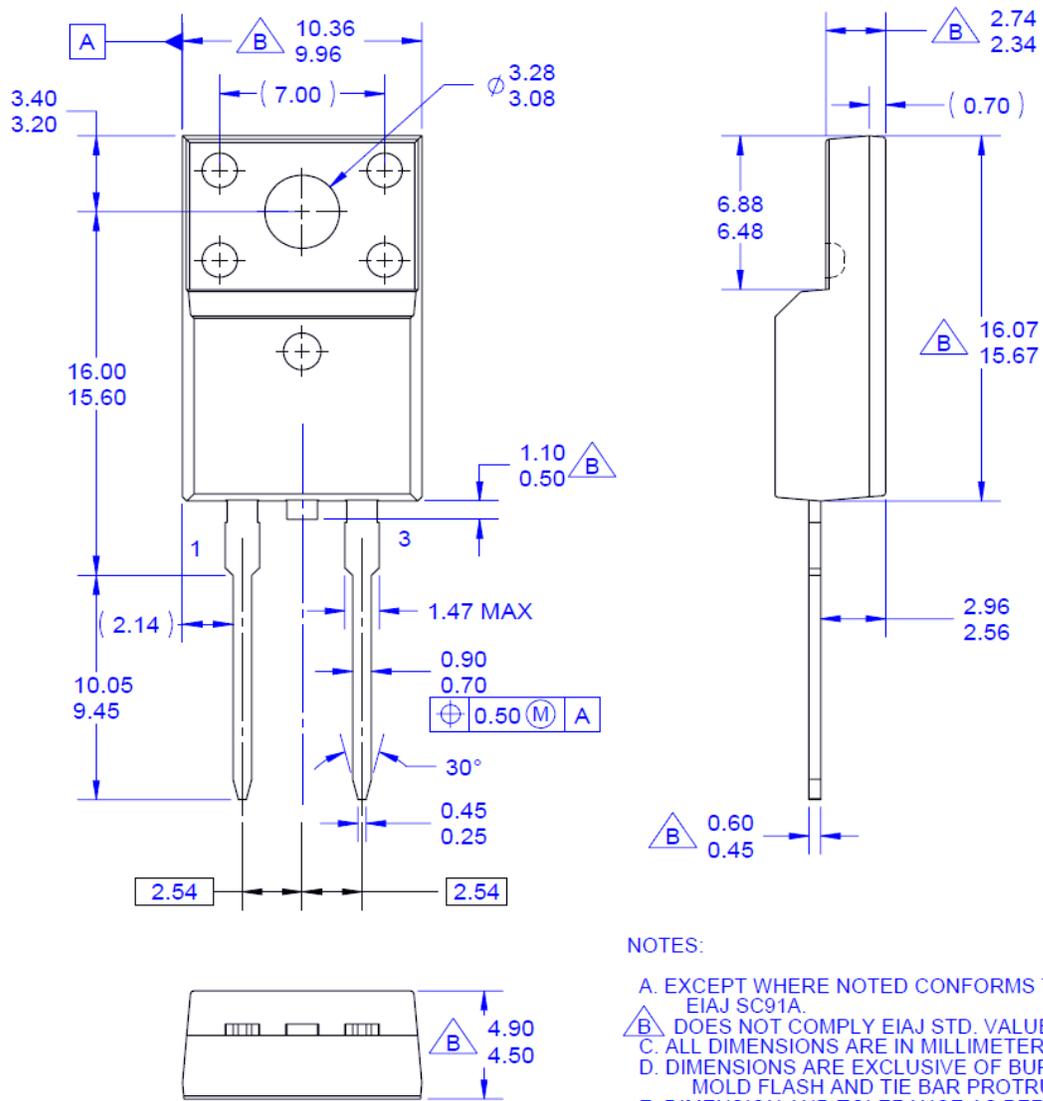


Figure 9. TO-220F 2L - 2LD; TO220; MOLDED; FULL PACK

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