



April 2016

FFPF10F150S 10 A, 1500 V, Damper Diode

FFPF10F150S — Damper Diode

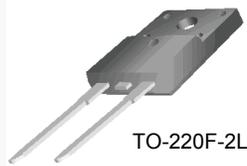
Features

- 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

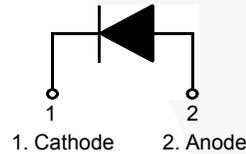
Applications

- 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 +150	$^\circ\text{C}$

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	F10F150S	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

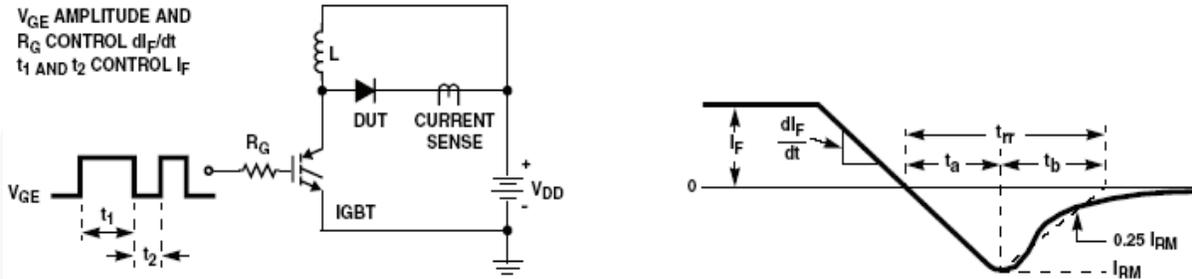


Figure 1. Diode Reverse Recovery Test Circuit & Waveform

L = 40mH
 R < 0.1Ω
 V_{DD} = 50V
 $E_{AVL} = 1/2LI_2 [V_{R(AVL)}/(V_{R(AVL)} - V_{DD})]$
 Q1 = IGBT (BV_{CES} > DUT V_{R(AVL)})

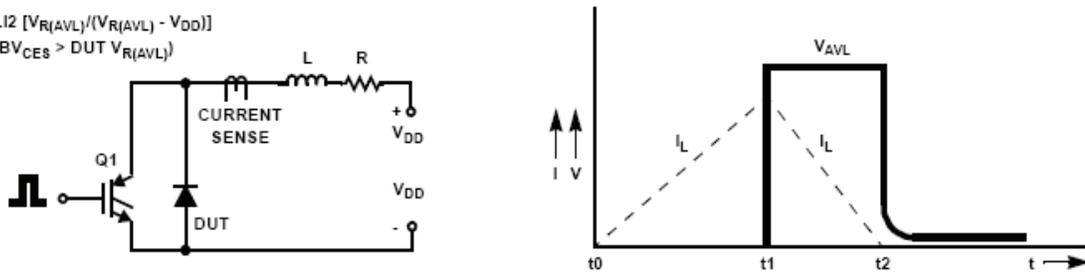


Figure 2. Unclamped Inductive Switching Test Circuit & Waveform

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

Figure 3. Typical Forward Voltage Drop

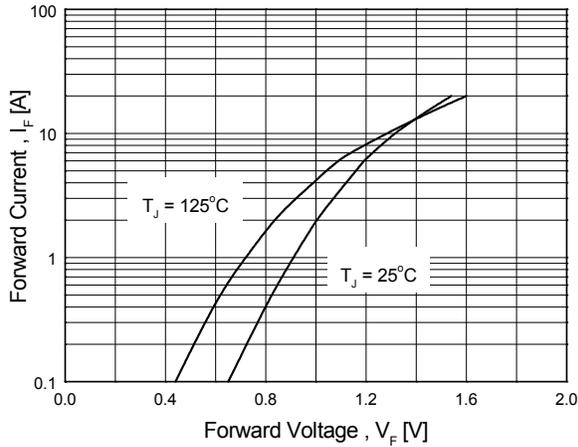


Figure 4. Typical Reverse Current

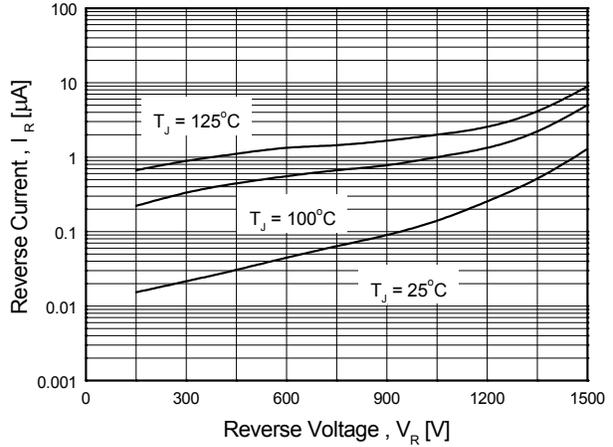


Figure 5. Typical Junction Capacitance

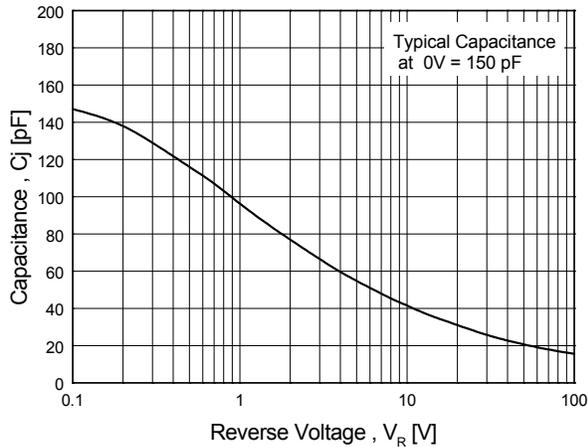


Figure 6. Typical Reverse Recovery Time

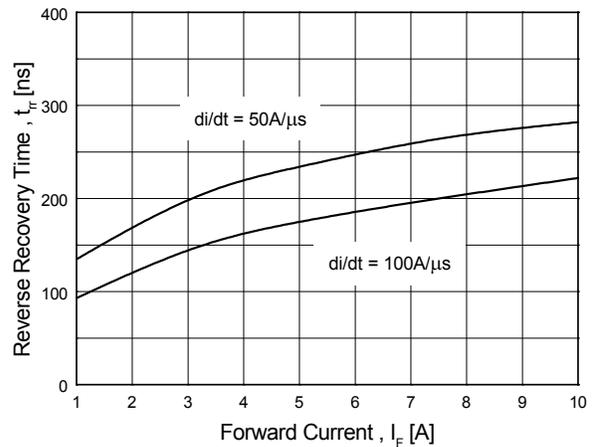


Figure 7. Typical Stored Charge

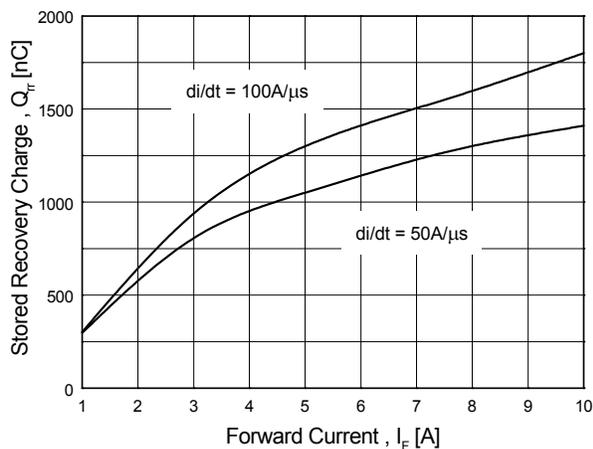
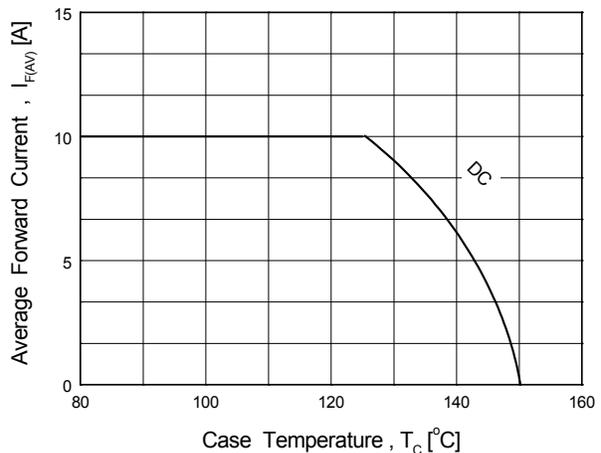


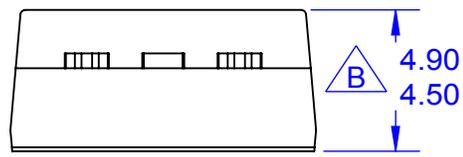
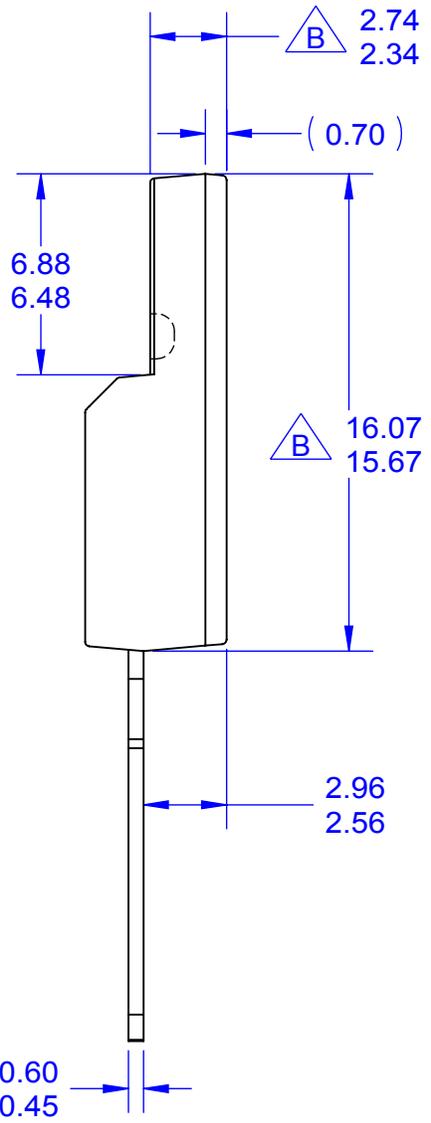
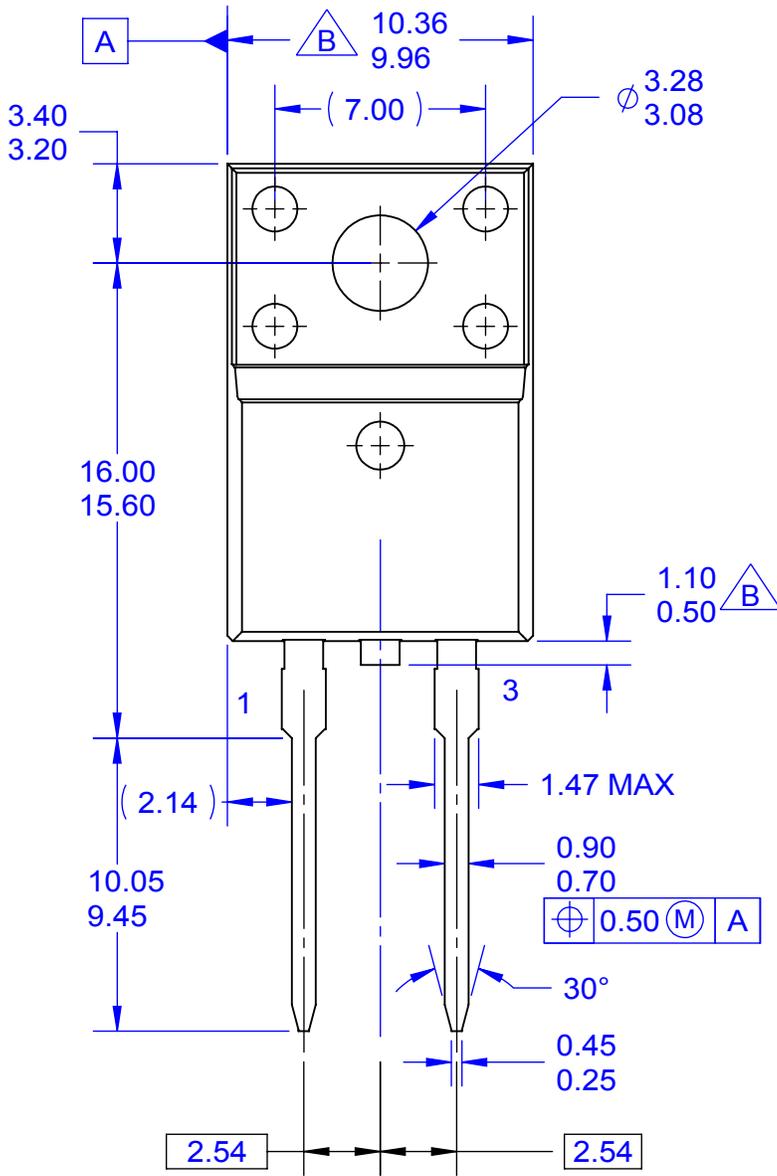
Figure 8. Forward Current Deration Curve



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REVISIONS

NBR	DESCRIPTION	DATE	BY/APP'D
1	RELEASED TO DCC	08JUL08	H.ALLEN.FSME
2	COMPLETE REDRAW	14APR09	KH LEE/ SUZHOU



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

APPROVALS		DATE				
DRAWN: BOBOY MALDO		14APR09				
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APPROVED: BY HUANG						
APPROVED: HOWARD ALLEN						
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