FAIRCHILD SEMICONDUCTOR®

November 2009

FFP08D60L2
Deuxpeed™ Rectifier

Features

- High Speed Switching, t_{rr} < 25ns at rating current
- High Reverse Voltage and High Reliability
- Max Forward Voltage, V_F < 3.6V @25°C
- Insulated voltage, 2500V DC

Applications

- Boost diode in continuous mode power factor corrections

8A, 600V Deuxpeed™ Rectifier

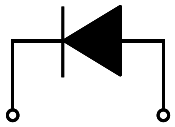
The Deuxpeed diode is a high performance product composed of two 300V dice in series and silicon nitride passivated ion-implanted epitaxial planar construction.

This device is intended for use as boost diode in continuous mode power factor correctors and hard switching conditions and internal ceramic insulated package allows flexible heatsinking on common or separate heatsink.

100% LEAD-FREE IMPLEMENTATION

Pin Assignments

Insulated TO-220



1. Cathode 2. Anode

Absolute Maximum Ratings T_C = 25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_{RWM}	Working Peak Reverse Voltage	600	V
V_R	DC Blocking Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ T_C = 115°C	8	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	80	A
T_J, T_{STG}	Operating and Storage Temperature Range	-65 to +150	°C

Thermal Characteristics

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	2.0	°C/W

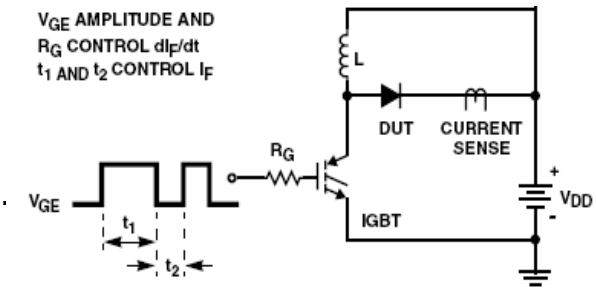
Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F08D60L2	FFP08D60L2	TO-220	-	-	50

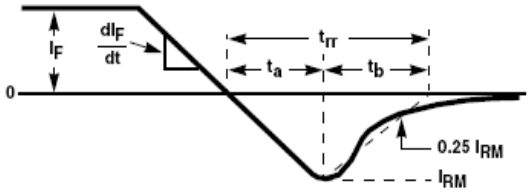
Electrical Characteristics $T_C = 25^oC$ unless otherwise noted

Symbol	Parameter		Min.	Typ.	Max.	Units
$V_{FM}1$	I_F = 8A I_F = 8A	$T_C = 25^oC$ $T_C = 125^oC$	- -	2.6 2.2	3.6	V
$I_{RM}1$	V_R = 600V V_R = 600V	$T_C = 25^oC$ $T_C = 125^oC$	- -	- -	10 100	μA
t_{rr}	I_F = 8A, di/dt = 200A/μs, V_R = 390V	$T_C = 25^oC$ $T_C = 125^oC$	- -	13 21	25	ns
W_{AVL}	Avalanche Energy (L = 40mH)		20	-	-	mJ

Notes:
1: Pulse: Test Pulse width = 300μs, Duty Cycle = 2%

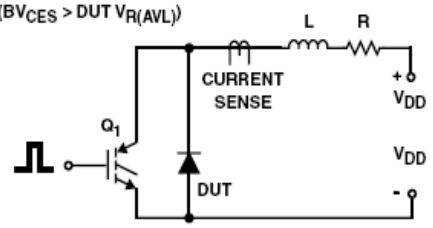


t_{rr} TEST CIRCUIT

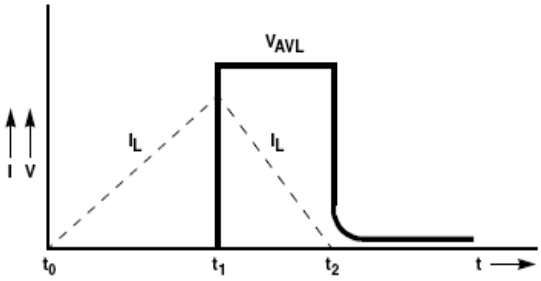


t_{rr} WAVEFORMS AND DEFINITIONS

L = 40mH
R < 0.1Ω
$E_{AVL} = 1/2LI^2$
Q_1 = IGBT (BV_{CES} > DUT $V_{R(AVL)}$)



AVALANCHE ENERGY TEST CIRCUIT



AVALANCHE CURRENT AND VOLTAGE WAVEFORMS

Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop vs. Forward Current

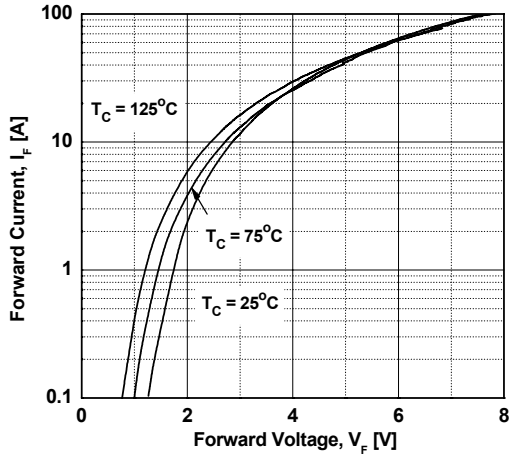


Figure 2. Typical Reverse Current vs. Reverse Voltage

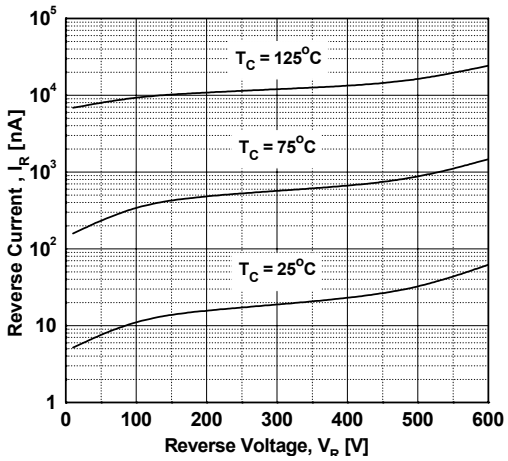


Figure 3.Typical Junction Capacitance

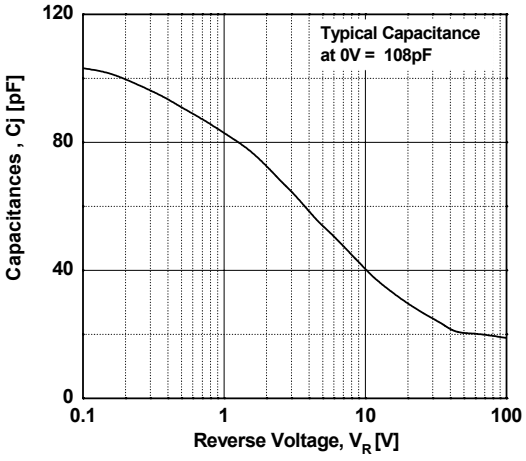


Figure 4. Typical Reverse Recovery Time vs. di/dt

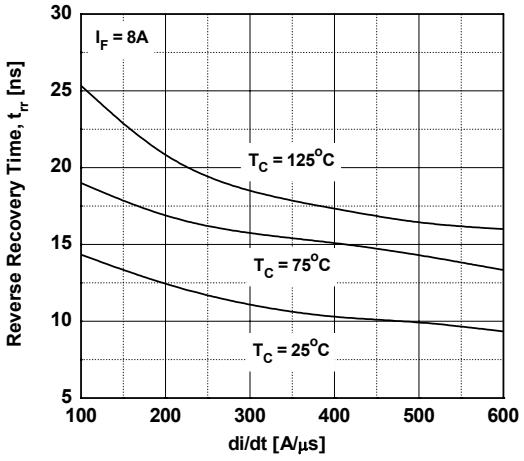


Figure 5. Typical Reverse Recovery Current vs. di/dt

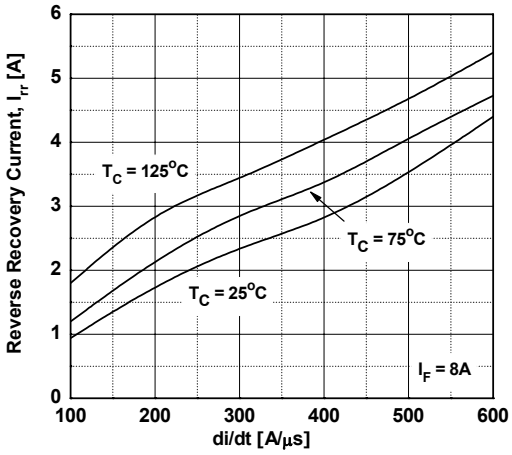
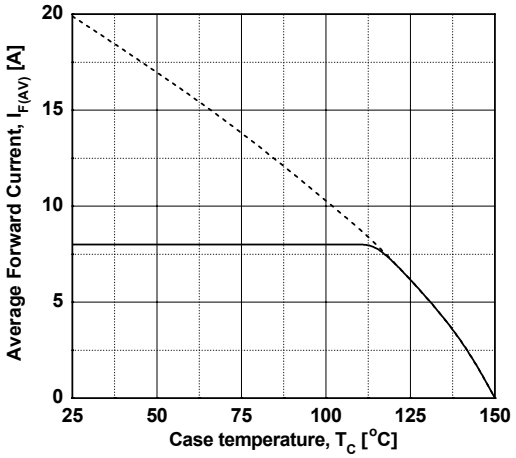
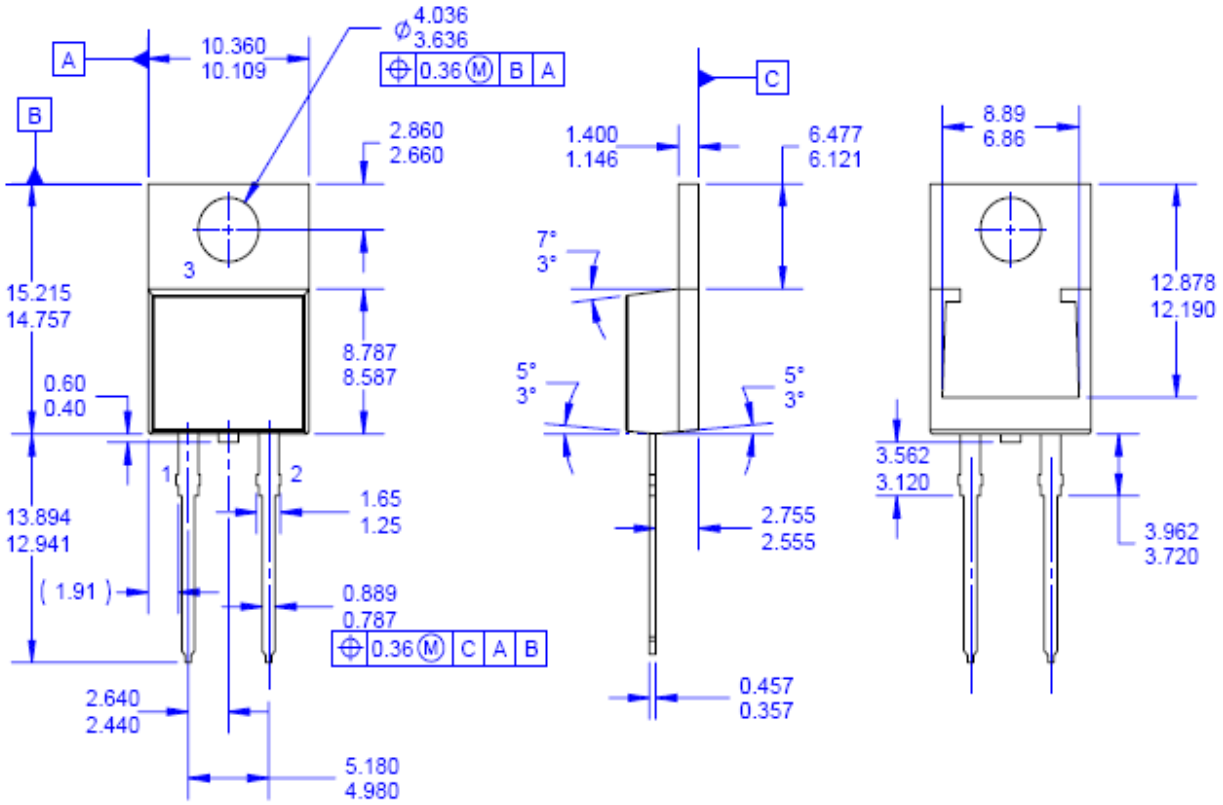


Figure 6. Forward Current Derating Curve



Mechanical Dimensions



NOTES:

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F. DRAWING FILE NAME: TO220B02REV3

Dimensions in Millimeters

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