FAIRCHILD SEMICONDUCTOR®

FFP08H60S
Hyperfast Recovery Power Rectifier

Features

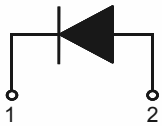
- High Speed Switching
- High Reverse Voltage and High Reliability
- Avalanche Energy Rated
- Low Forward Voltage

Applications

- General Purpose
- Switching Mode Power Supply
- Free-wheeling diode for motor application
- Power switching circuits

TO-220-2L
Marking:08H60S

1. Cathode 2. Anode



1. Cathode 2. Anode

Absolute Maximum Ratings (per diode) T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	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 = 120°C	8	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	60	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	°C

Thermal Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	2.5	°C/W

Package Marking and Ordering Information

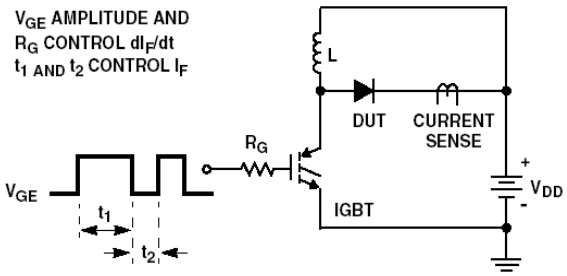
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F08H60S	FFP08H60STU	TO-220AC	-	-	50

Electrical Characteristics (per diode) T_a = 25°C unless otherwise noted

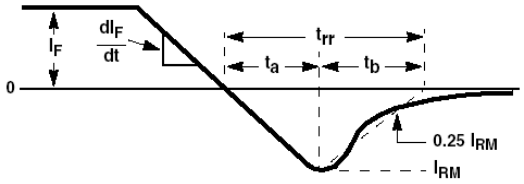
Symbol	Parameter		Min.	Typ.	Max.	Units
V_{FM} *	I_F = 8A I_F = 8A	T_C = 25 °C T_C = 100 °C	- -	- -	2.1 1.7	V V
I_{RM} *	V_R = 600V V_R = 600V	T_C = 25 °C T_C = 100 °C	- -	- -	100 500	μA μA
t_{rr}	I_F =1A, di/dt = 100A/μs, V_{CC} = 30V I_F =8A, di/dt = 100A/μs, V_{CC} = 390V	T_C = 25 °C T_C = 25 °C	- -	- -	35 45	ns ns
t_a t_b Q_{rr}	I_F =8A, di/dt = 100A/μs, V_{CC} = 390V	T_C = 25 °C T_C = 25 °C T_C = 25 °C	- - -	15 16 18.6	- - -	ns ns nC
W_{AVL}	Avalanche Energy (L = 40mH)		20	-	-	mJ

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

Test Circuit and Waveforms

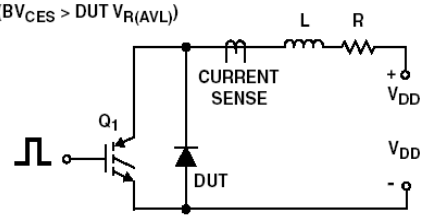


t_{rr} TEST CIRCUIT

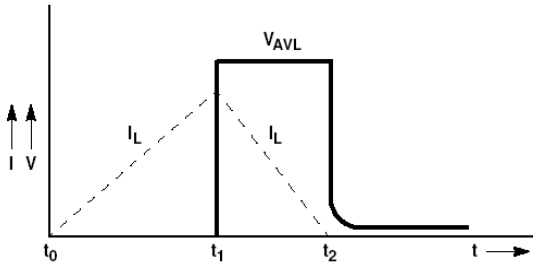


t_{rr} WAVEFORMS AND DEFINITIONS

I_{MAX} = 1A
L = 40mH
R < 0.1Ω
$E_{AVL} = 1/2LI^2 [V_{R(AVL)}/(V_{R(AVL)} - V_{DD})]$
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

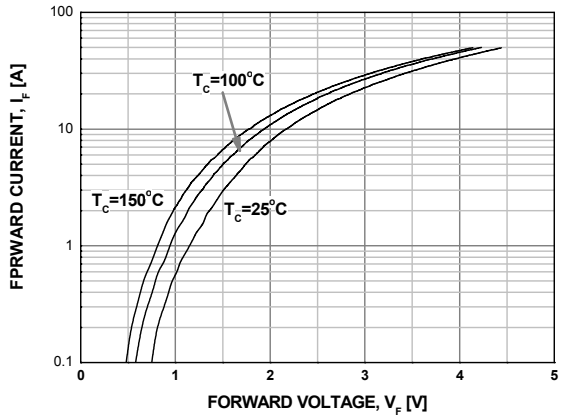


Figure 2. Typical Reverse Current

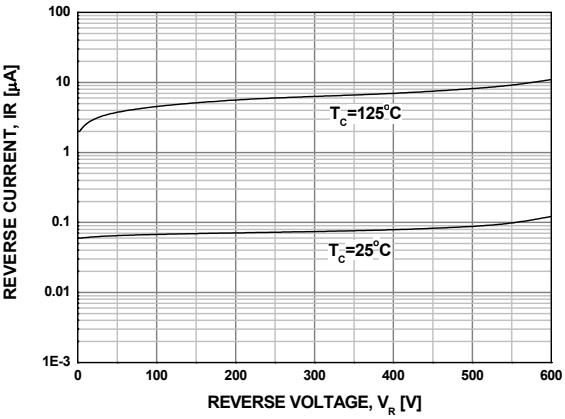


Figure 3. Typical Junction Capacitance

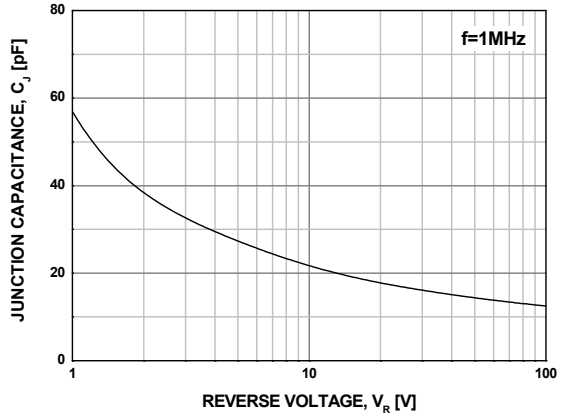


Figure 4. Typical Reverse Recovery Time

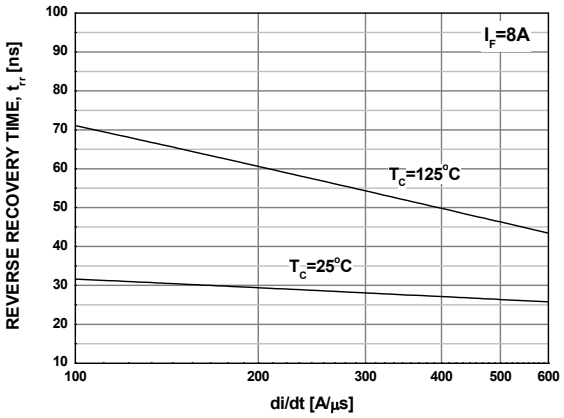


Figure 5. Typical Reverse Recovery Current

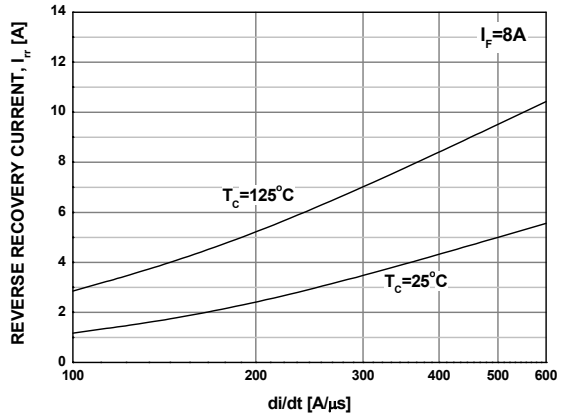
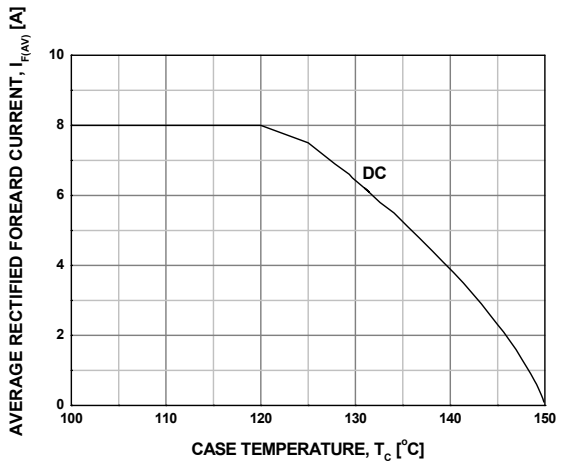
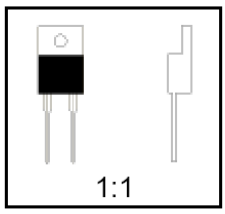


Figure 6. Forward Current Deration Curve



Package Demensions

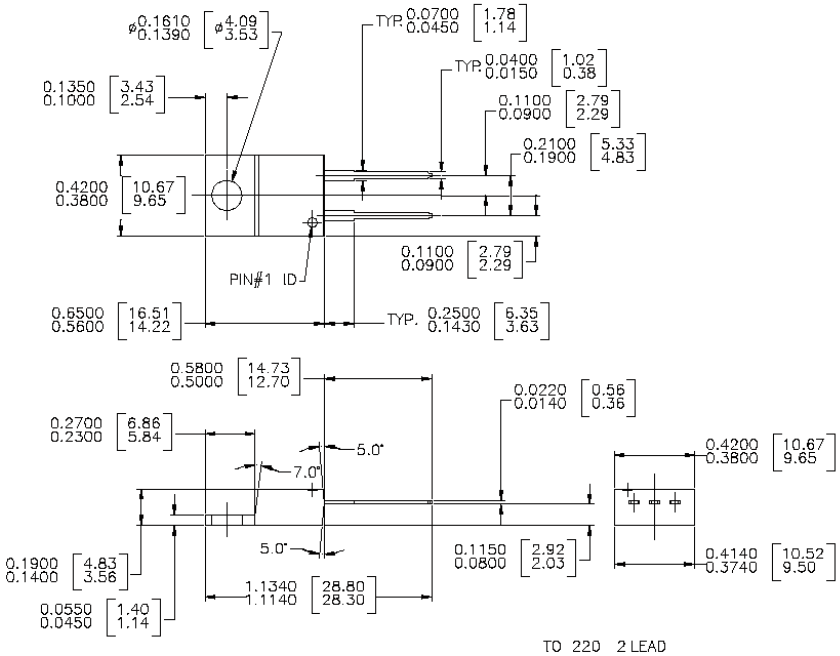
TO-220AC



Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 2.24



TO 220 2 LEAD

NOTE : UNLESS OTHERWISE SPECIFIED

1. STANDARD LEAD FINISH :
200 MICROINCHES / 5.08 MICRON MINIMUM
LEAD / TIN 15/85 ON OLIN 194 COPPER OR EQUIVALENT

2. DIMENSION BASED ON JEDEC STANDARD TO-220
VARIATION AB, ISSUE J, DATED 3/24/87

Dimensions in Millimeters

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FPS™
FRFET™
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