



April 2007

FFP08S60S Stealth 2 Rectifier

Features

- High Speed Switching (Max. $t_{rr}<30ns$ @ $I_F=8A$)
- High Reverse Voltage and High Reliability
- Avalanche Energy Rated

Applications

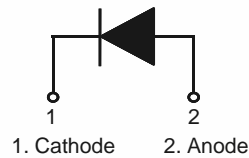
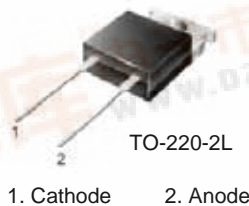
- General Purpose
- Switching Mode Power Supply
- Boost Diode in continuous mode power factor corrections
- Power switching circuits

8A, 600V Stealth2 Rectifier

The FFP08S60S is stealth 2 rectifier with soft recovery characteristics ($t_{rr}<30ns$). They has half the recovery time of hyperfast rectifier and are silicon nitride passivated ion-implanted epitaxial planar construction.

This device is intended for use as freewheeling of boost diode in switching power supplies and other power switching applications. Their low stored charge and hyperfast soft recovery minimize ringing and electrical noise in many power switching circuits reducing power loss in the switching transistors.

Pin Assignments



Absolute Maximum Ratings $T_C = 25^\circ C$ 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 @ $T_C = 115^\circ C$ | 8 | A |
| I_{FSM} | Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave | 80 | A |
| T_J, T_{STG} | Operating Junction and Storage Temperature | - 65 to +150 | $^\circ C$ |

Thermal Characteristics $T_C = 25^\circ C$ unless otherwise noted

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

Package Marking and Ordering Information

| Device Marking | Device | Package | Reel Size | Tape Width | Quantity |
|----------------|-------------|-----------|-----------|------------|----------|
| F08S60S | FFP08S60STU | TO-220-2L | - | - | 50 |



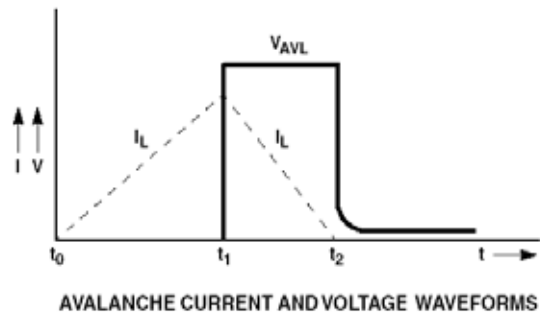
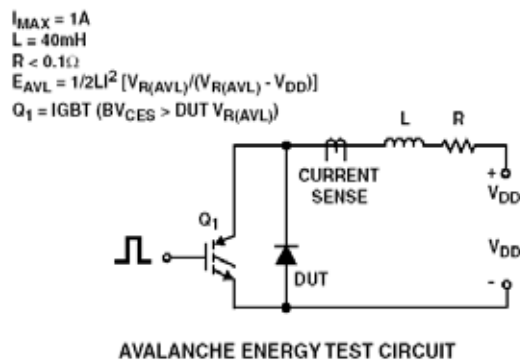
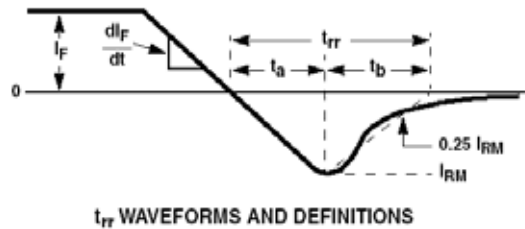
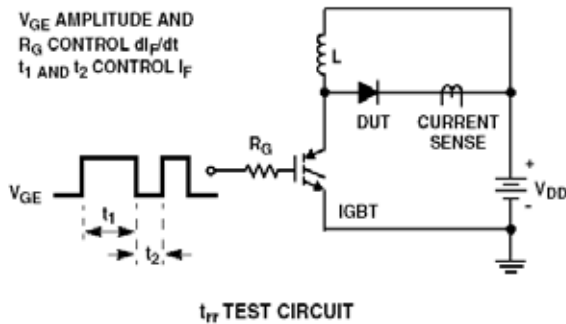
Electrical Characteristics T_C = 25°C unless otherwise noted

| Parameter | Conditions | Min. | Typ. | Max | Units | |
|------------------------------|---|-------------------------|------|-----|-------|----|
| V _{FM} ¹ | I _F = 8A | T _C = 25 °C | - | 2.1 | 2.6 | V |
| | I _F = 8A | T _C = 125 °C | - | 1.6 | - | V |
| I _{RM} ¹ | V _R = 600V | T _C = 25 °C | - | - | 100 | μA |
| | V _R = 600V | T _C = 125 °C | - | - | 500 | μA |
| t _{rr} | I _F = 1A, di/dt = 100A/μs, V _R = 30V | T _C = 25 °C | - | - | 25 | ns |
| trr | I _F = 8A, di/dt = 200A/μs, V _R = 390V | T _C = 25 °C | - | 19 | 30 | ns |
| I _{rr} | | | - | 2.2 | - | A |
| S factor | | | - | 0.6 | - | - |
| Q _{rr} | | | - | 21 | - | nC |
| trr | I _F = 8A, di/dt = 200A/μs, V _R = 390V | T _C = 125 °C | - | 58 | - | ns |
| I _{rr} | | | - | 4.3 | - | A |
| S factor | | | - | 1.3 | - | - |
| Q _{rr} | | | - | 125 | - | nC |
| W _{AVL} | Avalanche Energy (L = 40mH) | | 20 | - | - | mJ |

Notes:

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

Test Circuit and Waveforms



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

Figure 1. Typical Forward Voltage Drop

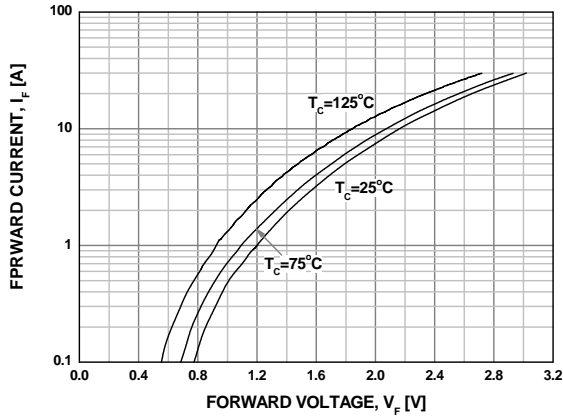


Figure 2. Typical Reverse Current

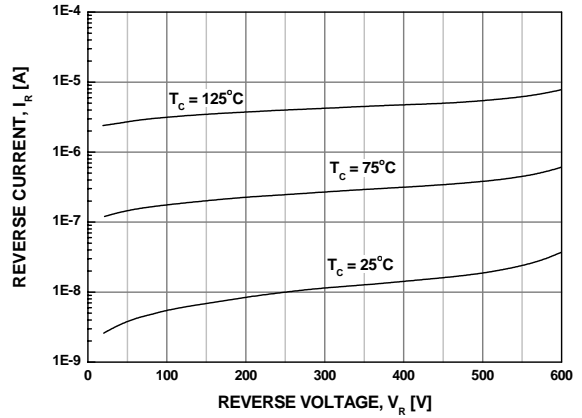


Figure 3. Typical Junction Capacitance

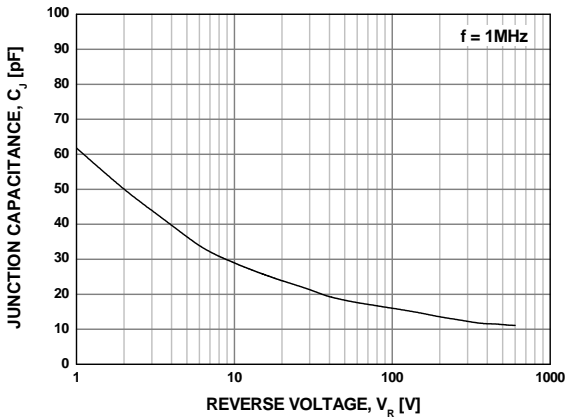


Figure 4. Typical Reverse Recovery Time

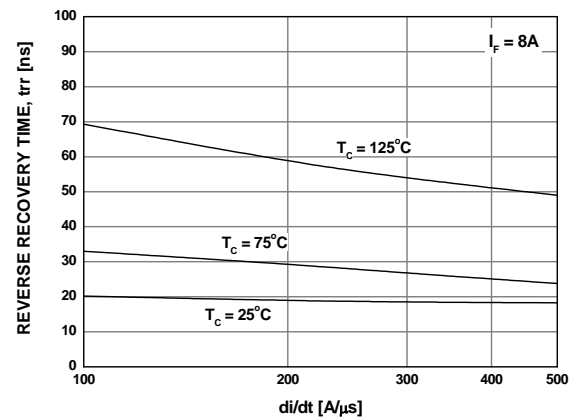


Figure 5. Typical Reverse Recovery Current

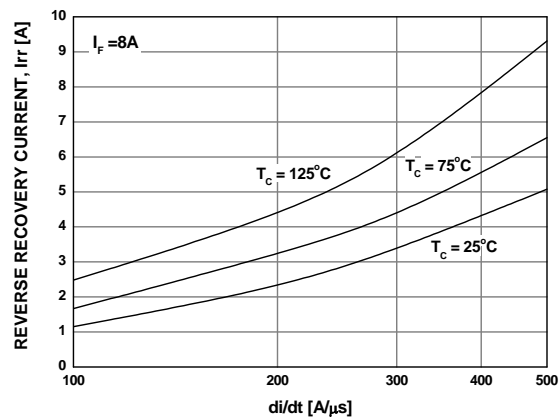
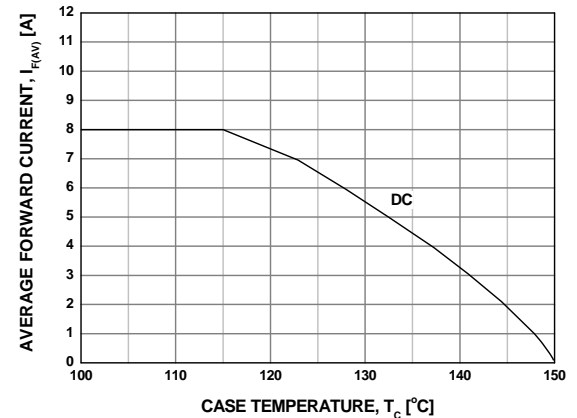
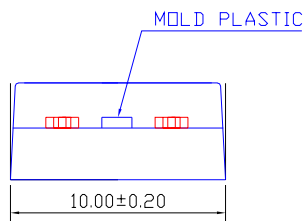
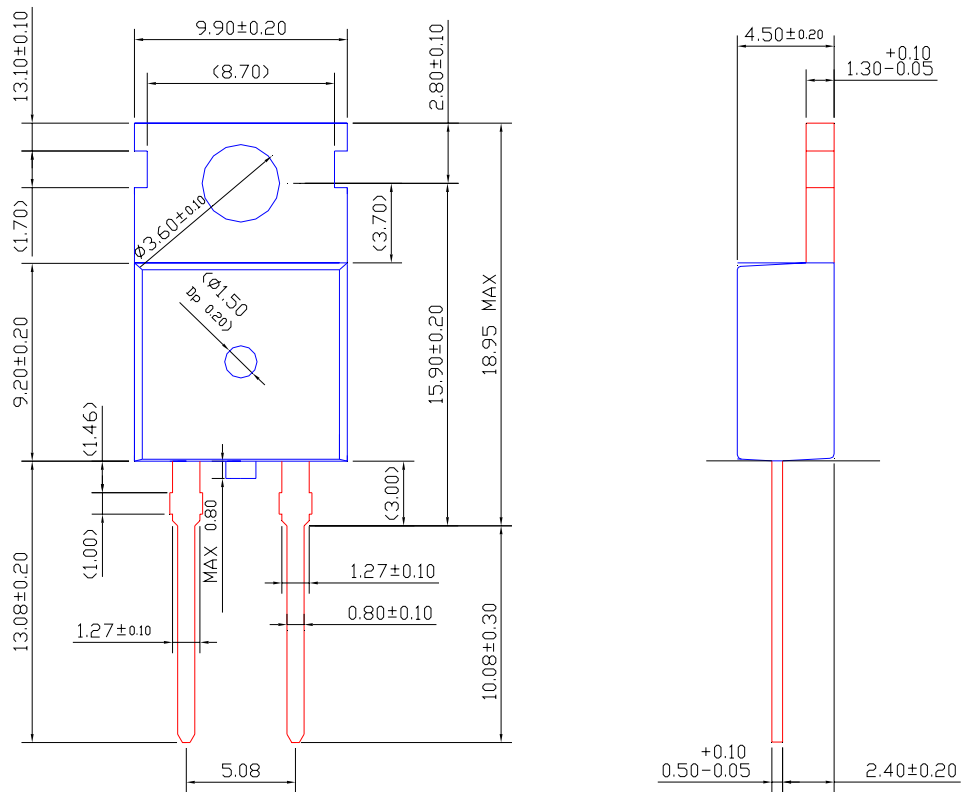


Figure 6. Forward Current Deration Curve



Mechanical Dimensions

TO-220-2L



NOTE


1. THESE DIMENSIONS DO NOT INCLUDE MOLD PROTRUSION.
2. () IS REFERENCE
3. [] IS ASS'Y OUT QUALITY

Dimensions in Millimeters



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