

FFPF20U60S

Features

- High voltage and high reliability
- High speed switching
- Low forward voltage

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits



TO-220F



ULTRA FAST RECOVERY POWER RECTIFIER

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	20	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	120	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.25	$^\circ\text{C/W}$

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

Symbol	Parameter	Min.	Typ.	Max.	Units
V_{FM}^*	Maximum Instantaneous Forward Voltage $I_F = 20\text{A}$ $I_F = 20\text{A}$ $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$			2.2 2.0	V
I_{RM}^*	Maximum Instantaneous Reverse Current @ rated V_R $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$			10 100	μA
t_{rr} I_{rr} Q_{rr}	Maximum Reverse Recovery Time Maximum Reverse Recovery Current Maximum Reverse Recovery Charge ($I_F = 20\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)			90 8 360	ns A nC
W_{AVL}	Avalanche Energy	1.0			mJ

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

Typical Characteristics

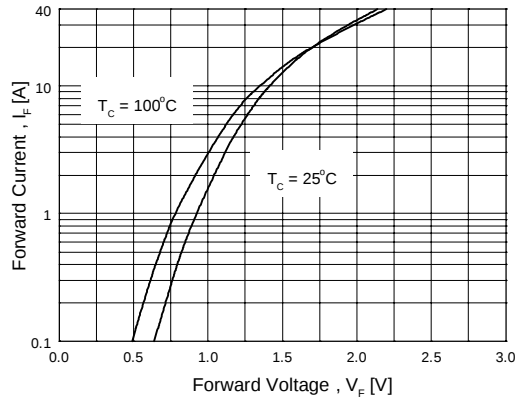


Figure 1. Typical Forward Voltage Drop vs. Forward Current

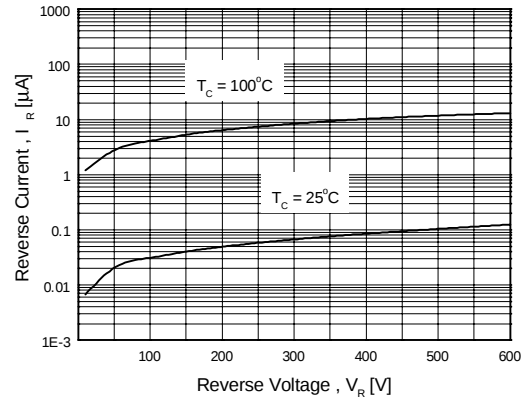


Figure 2. Typical Reverse Current vs. Reverse Voltage

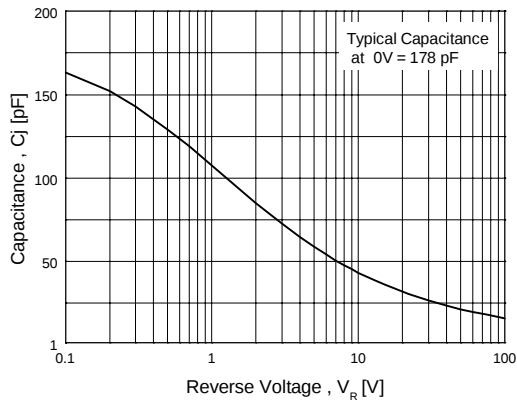


Figure 3. Typical Junction Capacitance

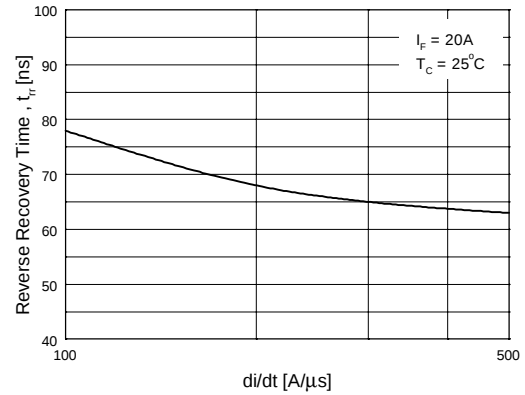


Figure 4. Typical Reverse Recovery Time vs. di/dt

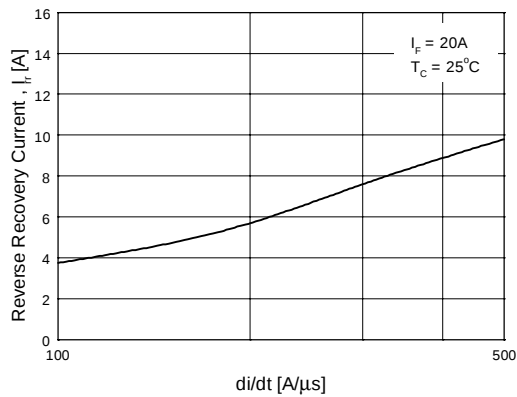


Figure 5. Typical Reverse Recovery Current vs. di/dt

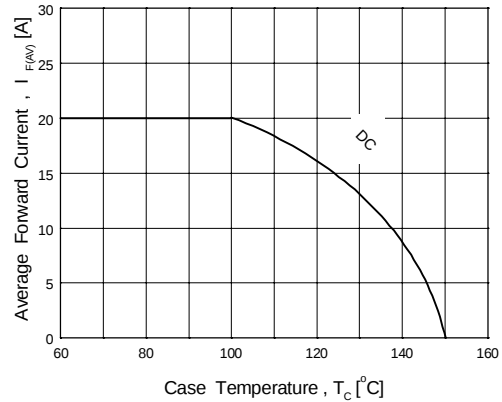


Figure 6. Forward Current Derating Curve

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Technical drawing of a 2.54TYP connector showing front, side, and top views with dimensions.

Front View Dimensions:

- Overall width: 10.16 ± 0.20
- Top section height: 3.30 ± 0.10
- Central section height: 15.80 ± 0.20
- Bottom section height: 9.75 ± 0.30
- Pin spacing (typical): 2.54 TYP [2.54 ± 0.20]
- Pin diameter: $\varnothing 3.18 \pm 0.10$
- Pin length: 12.00 ± 0.20
- Pin tip diameter: 0.35 ± 0.10
- Pin tip radius: 0.80 ± 0.10
- Pin tip angle: $\text{MAX } 1.47^\circ$
- Pin tip chamfer: 0.35 ± 0.10
- Pin tip chamfer angle: $(1.00 \times 45^\circ)$
- Pin tip chamfer radius: 6.68 ± 0.20
- Pin tip chamfer length: 2.54 ± 0.20
- Pin tip chamfer angle: (0.70)
- Pin tip chamfer radius: 15.87 ± 0.20
- Pin tip chamfer length: 2.76 ± 0.20
- Pin tip chamfer angle: $0.50^{+0.10}_{-0.05}$

Top View Dimensions:

- Overall width: 9.40 ± 0.20
- Overall height: 4.70 ± 0.20

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