



FFPF10UP20S

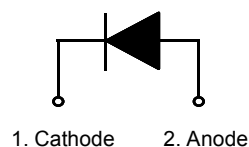
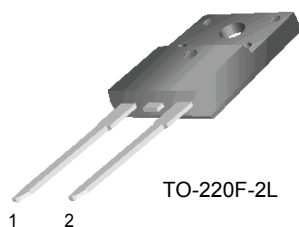
Ultrafast Rectifier

Features

- Ultrafast with soft recovery
(@ $I_F = 1A$), < 35ns
- Reverse Voltage, 200V
- Forward Voltage (@ $T_C = 100^\circ C$), < 1.1V
- Enhanced Avalanche Energy

Applications

- Power switching circuits
- Output rectifiers
- Freewheeling diodes
- Switching mode power supply



Absolute Maximum Ratings

(per diode) $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ C$	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	$^\circ C$

Thermal Characteristics

$T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	4.3	$^\circ C/W$

Electrical Characteristics (per diode) $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter		Min.	Typ.	Max.	Units
V_{FM}^*	Maximum Instantaneous Forward Voltage $I_F = 10\text{A}$ $I_F = 10\text{A}$	$T_C = 25^\circ\text{C}$	-	-	1.15	V
		$T_C = 100^\circ\text{C}$	-	-	1.10	
I_{RM}^*	Maximum Instantaneous Reverse Current @ rated V_R	$T_C = 25^\circ\text{C}$	-	-	100	μA
		$T_C = 100^\circ\text{C}$	-	-	500	
t_{rr}	Reverse Recovery Time		-	32	-	ns
I_{rr}	Reverse Recovery Current		-	1.65	-	A
Q_{rr}	Reverse Recovery Charge ($I_F = 6\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)		-	24.4	-	nC
t_{rr}	Maximum Reverse Recovery Time ($I_F = 1\text{A}$, $di/dt = 100\text{A}/\mu\text{s}$)		-	-	35	ns
W_{AVL}	Avalanche Energy ($L=40\text{mH}$)		5	-	-	mJ

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

Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop vs. Forward Current

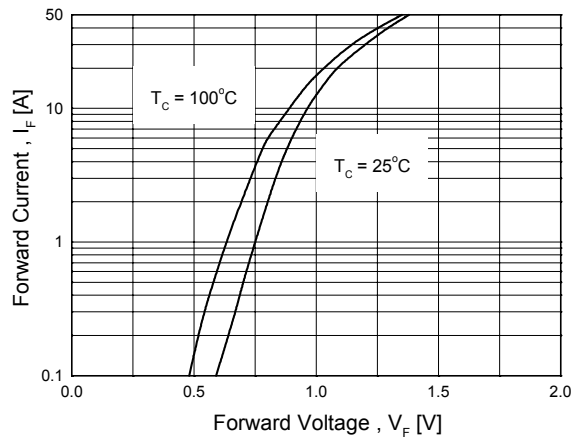


Figure 2. Typical Reverse Current vs. Reverse Voltage

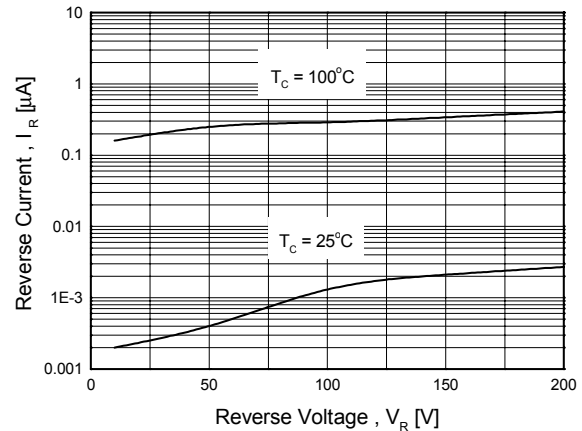


Figure 3. Typical Junction Capacitance

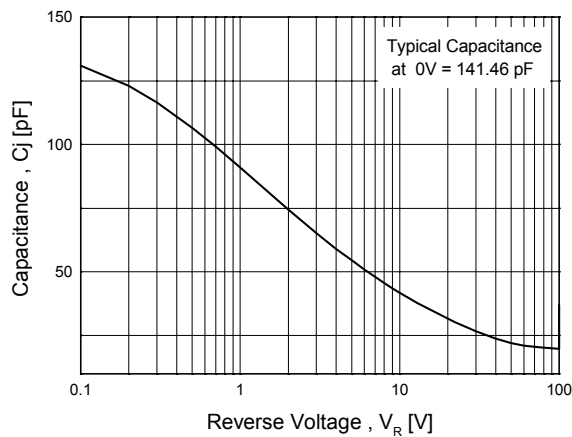


Figure 4. Typical Reverse Recovery Time vs. di/dt

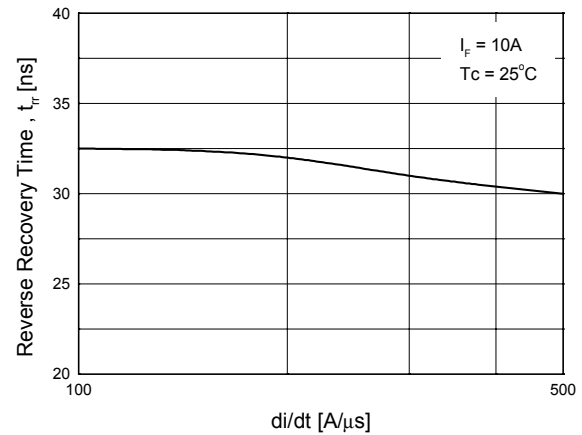


Figure 5. Typical Reverse Recovery Current vs. di/dt

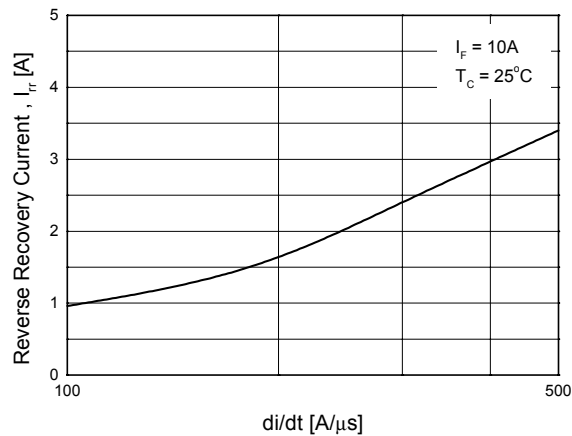
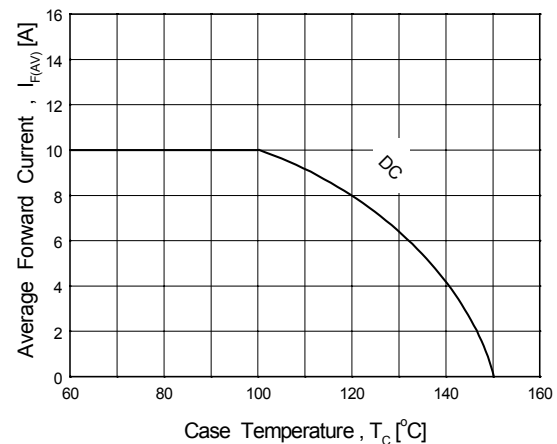
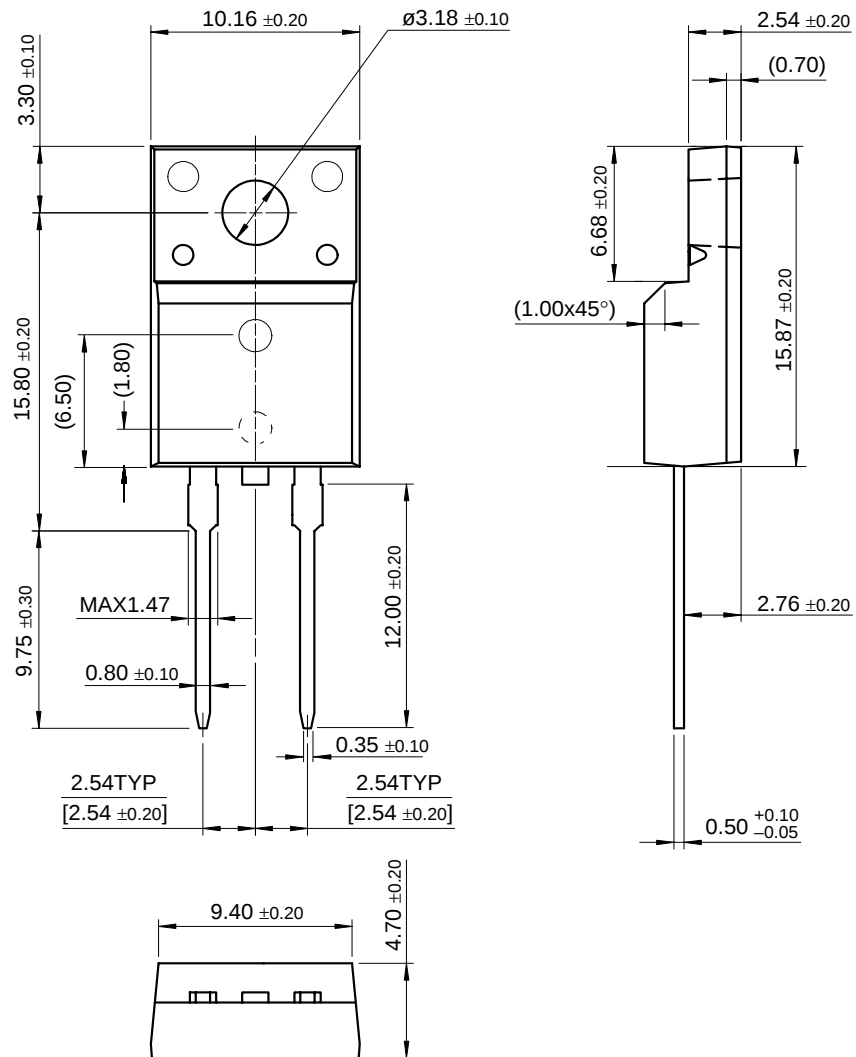


Figure 6. Forward Current Derating Curve



Mechanical Dimensions

TO-220F-2L



Dimensions in Millimeters

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