

Pb Free Plating Product

## F30U60ST



30Amperes,600Volts Single Insulated Package Ultra Fast Recovery Epitaxial Diode

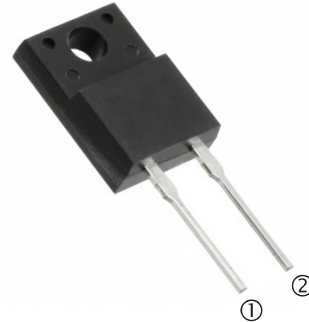
### APPLICATION

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

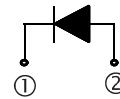
### PRODUCT FEATURE

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

ITO-220AC/TO-220F-2L



Internal Configuration



### GENERAL DESCRIPTION

F30U60ST using the latest FRED FAB process(or planar passivation pellet) with ultrafast and soft recovery characteristics.

### 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 @ $T_C = 100^\circ\text{C}$	30	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	180	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	0.8	$^\circ\text{C/W}$

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

Symbol	Parameter	Min.	Typ.	Max.	Units
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 30\text{A}$ $T_C = 25^\circ\text{C}$ $I_F = 30\text{A}$ $T_C = 100^\circ\text{C}$			2.3 2.1	V
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$ $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$			15 150	$\mu\text{A}$
$t_{rr}$ $I_{rr}$ $Q_{rr}$	Maximum Reverse Recovery Time Maximum Reverse Recovery Current Maximum Reverse Recovery Charge ( $I_F = 30\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )			90 8 360	ns A nC
$W_{AVL}$	Avalanche Energy	1.0			mJ

\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%

### Typical Characteristics

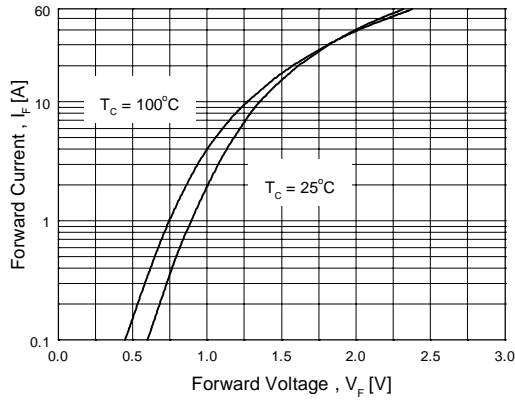


Figure 1. Typical Forward Voltage Drop vs. Forward Current

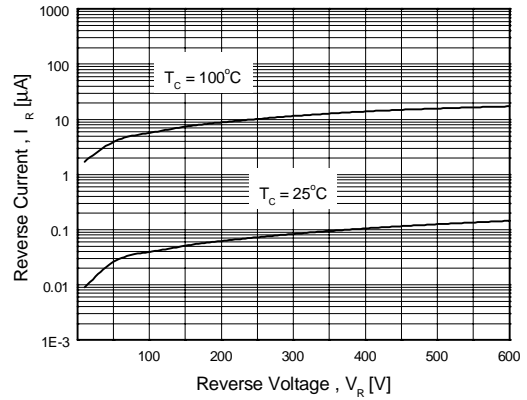


Figure 2. Typical Reverse Current vs. Reverse Voltage

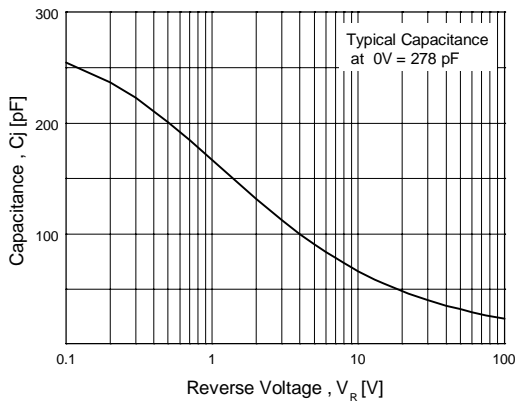


Figure 3. Typical Junction Capacitance

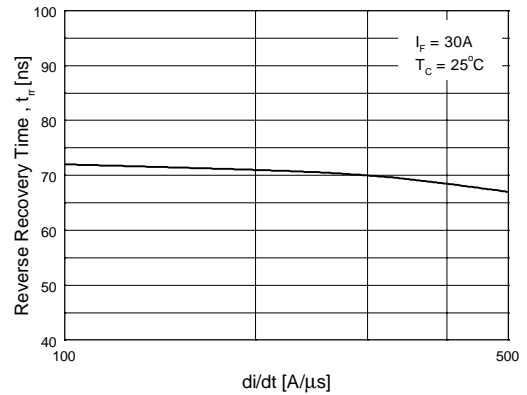


Figure 4. Typical Reverse Recovery Time vs. di/dt

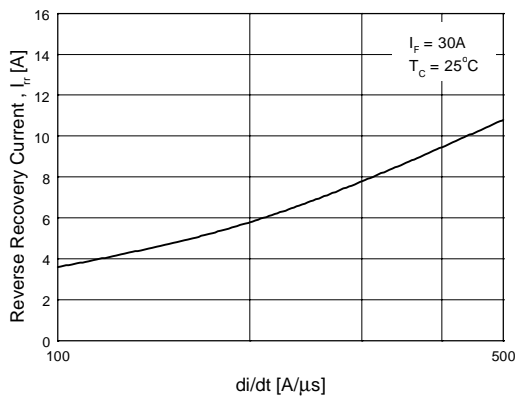


Figure 5. Typical Reverse Recovery Current vs. di/dt

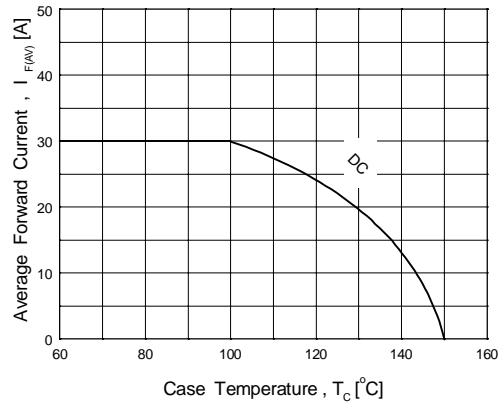
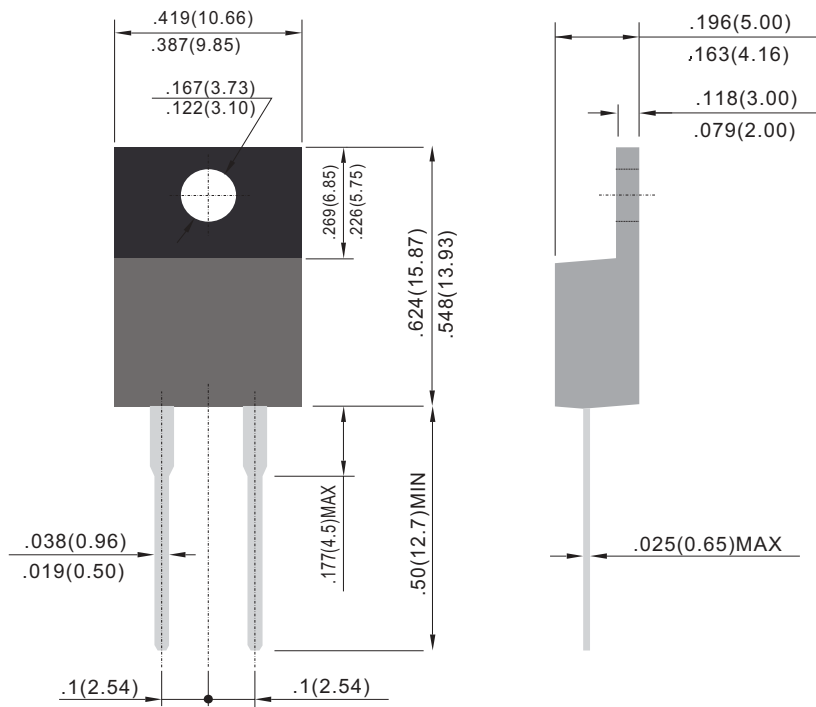


Figure 6. Forward Current Derating Curve

ITO-220AC/TO-220F-2L Package Outline:



Unit : inch (mm)