

Pb Free Plating Product

F60SB60DS



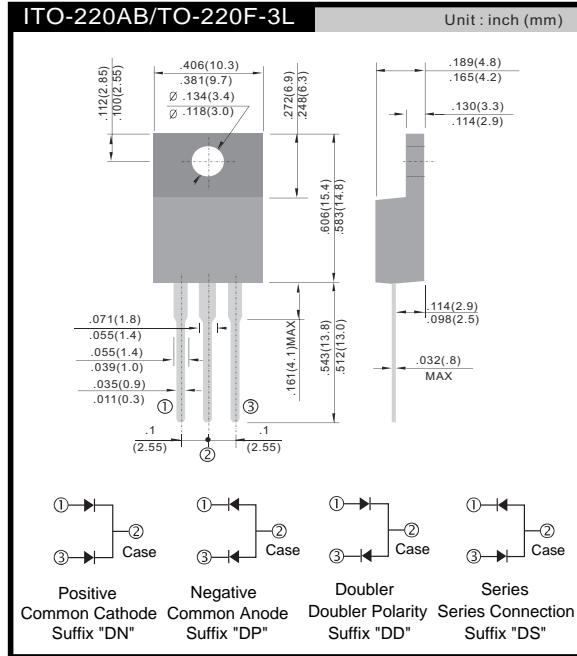
8Amperes,600Volts Insulated Dual Series Connection Ultra Fast Soft Recovery Rectifiers

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
- 150 Operating Junction Temperature
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

**General Description**

F60SB60DS using ThinkiSemi lastest FRED FAB process(planar passivation pellet) with ultrafast soft recovery characteristics.

Absolute Maximum Ratings $T_C = 25$ unless otherwise noted

Symbol	Parameter	Ratings	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 @ $T_C = 100$	4	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	40	A
T_J, T_{STG}	Operating and Storage Temperature Range	-65 to +150	

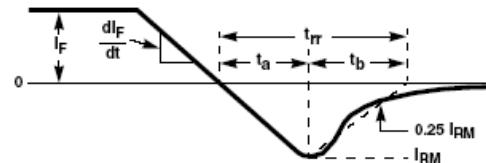
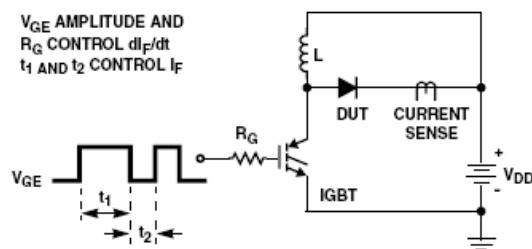
Thermal Characteristics

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	8.7	/W

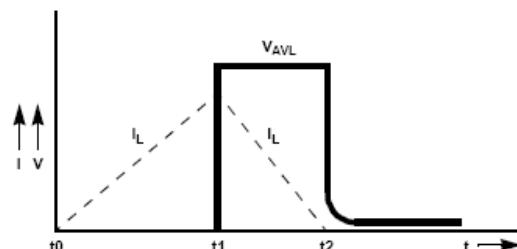
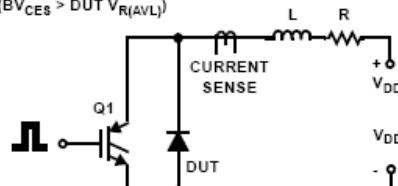
Electrical Characteristics $T_C = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Units	
V_{FM1}	$I_F = 4A$ $I_F = 4A$	$T_C = 25^\circ C$ $T_C = 125^\circ C$	- -	2.2 1.7	2.6 -	V
I_{RM1}	$V_R = 600V$ $V_R = 600V$	$T_C = 25^\circ C$ $T_C = 125^\circ C$	- -	- -	100 500	μA
t_{rr}	$I_F = 1A$, $dI/dt = 100A/\mu s$, $V_R = 30V$	$T_C = 25^\circ C$	-	16	23	ns
t_{rr} I_{rr} S factor Q_{rr}	$I_F = 4A$, $dI/dt = 200A/\mu s$, $V_R = 390V$	$T_C = 25^\circ C$	- - - -	18 2 0.7 18	25 - - -	ns A nC
t_{rr} I_{rr} S factor Q_{rr}	$I_F = 4A$, $dI/dt = 200A/\mu s$, $V_R = 390V$	$T_C = 125^\circ C$	- - - -	45 2.8 1.8 64	- - - -	ns A nC
W_{AVL}	Avalanche Energy ($L = 40mH$)		5	-	-	mJ

Notes:

1: Pulse: Test Pulse width = 300 μs , Duty Cycle = 2%**Test Circuit and Waveforms**

$L = 40mH$
 $R < 0.1\Omega$
 $V_{DD} = 50V$
 $EAVL = 1/2LI^2 [V_R(AVL)/(V_R(AVL) - V_{DD})]$
 $Q1 = \text{IGBT } (BV_{CES} > \text{DUT } V_R(AVL))$



Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop vs. Forward Current

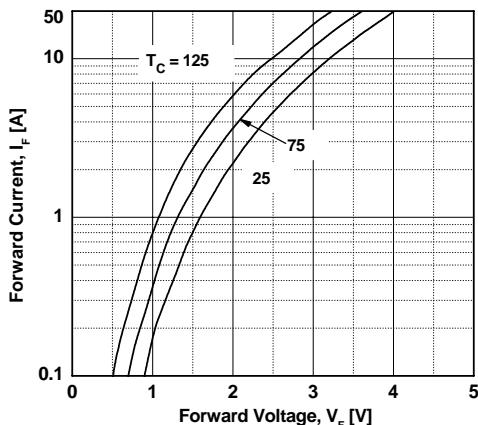


Figure 3. Typical Junction Capacitance

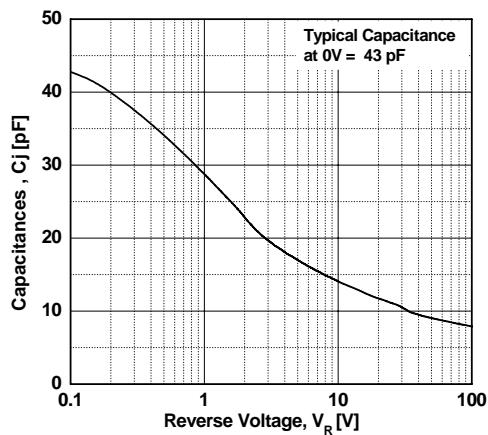


Figure 5. Typical Reverse Recovery Current vs. di/dt

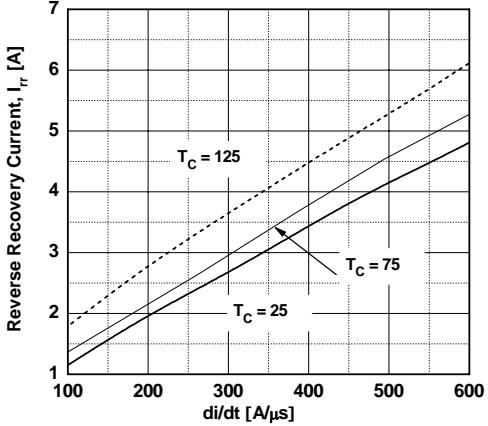


Figure 2. Typical Reverse Current vs. Reverse Voltage

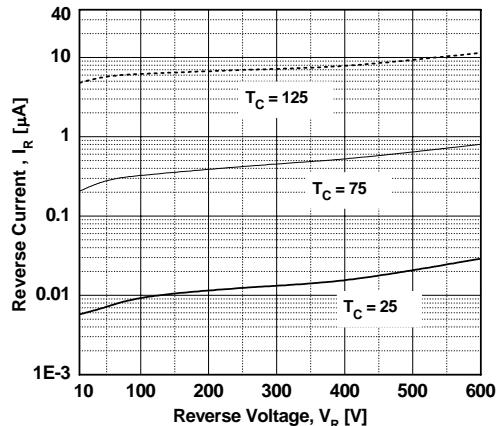


Figure 4. Typical Reverse Recovery Time vs. di/dt

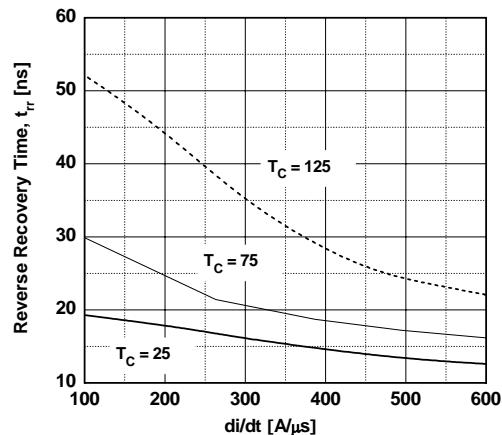


Figure 6. Forward Current Derating Curve

