

ESTF75D60U/UC/FB

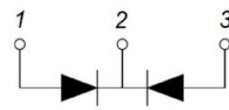
Ultra-Fast Recovery Diode

Features

- Repetitive Reverse Voltage : $V_{RRM} = 600V$
- Forward Voltage Drop : $V_F(\text{typ.}) = 1.4V$
- Average Forward Current : $I_F(\text{AV.}) = 75A @ T_c = 100^\circ C$
- Fast Reverse Recovery Time : $t_{rr}(\text{typ.}) = 45ns$
- RoHS product

Applications

- Switching Power Supplies
- Power Switching Circuits
- Welding Machine
- UPS



Absolute Maximum Ratings ($T_c=25^\circ C$, unless otherwise specified)

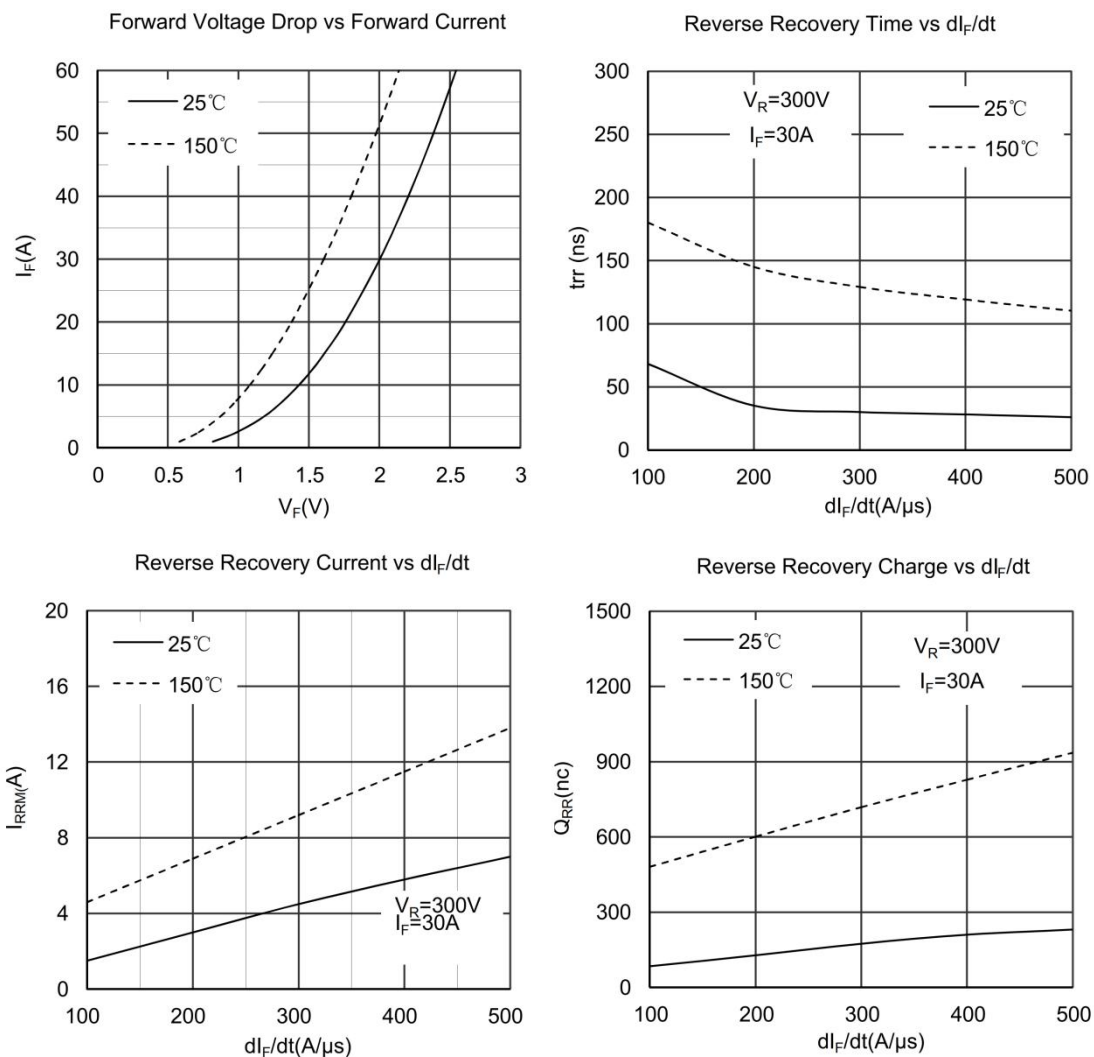
Symbol	Parameter	ratings	Unit
V_{RRM}	Repetitive peak reverse voltage @50 μA	600	V
V_{RWM}	Working Peak Reverse Voltage	600	V
$I_{F(AV)}$	Average forward current per Diode	75	A
	Average forward current per Diode @ $T_c=100^\circ C$	37.5	
	Average forward current per Device	150	
	Average forward current per device @ $T_c=100^\circ C$	75	
I_{FSM}	Peak one Cycle Surge Forward per device @ $t=10ms$	650	A
P_D	Power Dissipation per device	185	W
T_J	Junction Temperature	$-50 \sim +150$	$^\circ C$
T_{STG}	Storage temperature range	$-50 \sim +150$	$^\circ C$

Electrical Specifications ($T_c=25^\circ C$, unless otherwise specified)

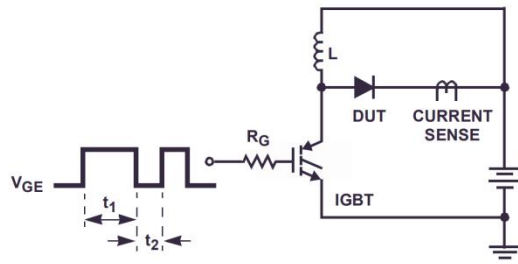
Symbol	Parameter		Ratings			Unit
			Min.	Typ	Max.	
I_R	$T_J = 25^\circ C$, per Diode	$V_R = V_{RRM}$			10	μA
	$T_J = 125^\circ C$, per Diode				1000	μA
V_F	$T_J = 25^\circ C$, per Diode	$I_F = 40A$		1.4	1.55	V

	$T_J = 125^\circ\text{C}$, per Diode		1.0	1.26	V
Trr	$I_F = 1\text{A}$, $V_R = 300\text{V}$, $di_F/dt = -200\text{A}/\mu\text{s}$, per Diode		20	25	ns
	$I_F = 30\text{A}$, $V_R = 300\text{V}$, $di_F/dt = -200\text{A}/\mu\text{s}$, per Diode		35	45	ns
$R_{th(j-c)}$	Thermal resistance	TO-247/3PB		0.5	$^\circ\text{C}/\text{W}$
$R_{th(j-c)}$	from junction to case	TO-3PF		1.3	$^\circ\text{C}/\text{W}$

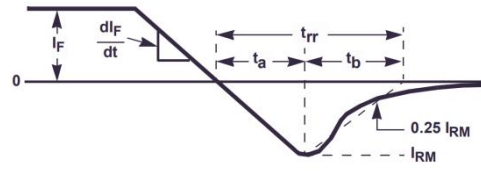
Typical Performance Curves(Per Diode)



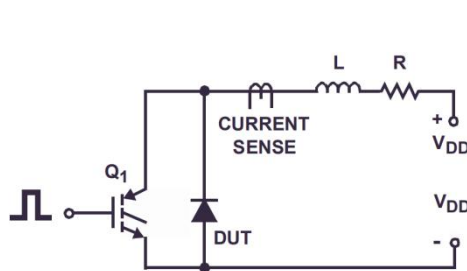
Test Circuits and Waveforms



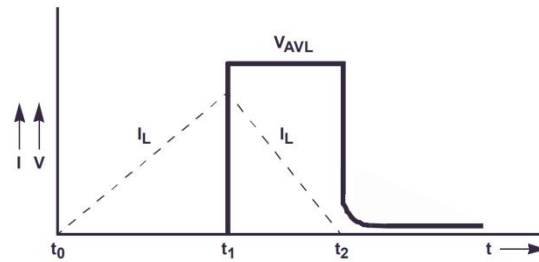
t_{rr} TEST CIRCUIT



t_{rr} WAVEFORMS AND DEFINITIONS



AVALANCHE ENERGY TEST CIRCUIT



AVALANCHE CURRENT AND VOLTAGE WAVEFORMS

Package

