



TO-220F-2L Plastic-Encapsulate Diode

MURF10H60 HYPERFAST RECTIFIER,FRED

MAIN CHARACTERISTICS

I_o	10A
V_{RRM}	600V
T_{rr}	24ns
T_j	175°C
V_{F(typ)}	1.06V(@T_j=150°C)

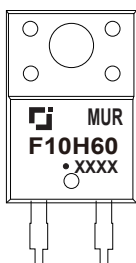
FEATURES

- Ultrafast Recovery Times and Low Recovery Loss
- Low Forward Voltage
- Low Reverse Leakage Current

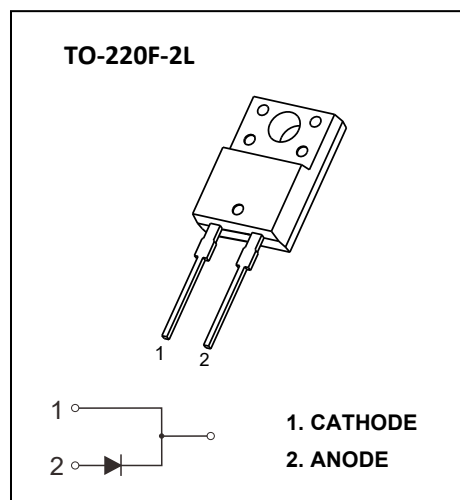
APPLICATIONS

Specifically designed to improve efficiency of PFC and output rectification stages of EV / HEV battery charging stations, booster stage of solar inverters and UPS applications, these devices are perfectly matched to operate with MOSFETs or high speed IGBTs.

MARKING



MURF10H60 = Device code
 Solid dot = Green molding compound device
 if none, the normal device
 XXXX = Code



MAXIMUM RATINGS (T_c=25°C unless otherwise noted)

Symbol	Parameter	MURF10H60	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
I_{F(AV)}	Average Forward Current(T _c =108°C)	10	A
I_{F(RMS)}	RMS Forward Current(T _c =108°C)	14	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	160	A
P_D	Power dissipation	36	W
R_{θJC}	Thermal Resistance From Junction to Case	4.2	°C/W
T_j	Operating Junction Temperature Range	-55 ~ +175	°C
T_{stg}	Storage Temperature Range	-55 ~ +175	°C

Typical Characteristics

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless otherwise specified)

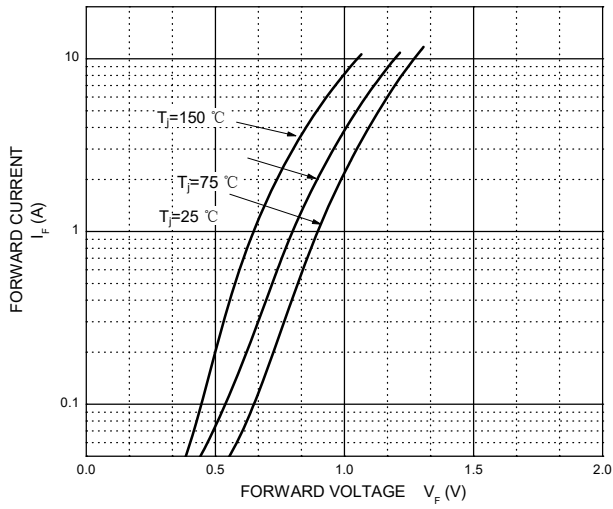
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	$I_R=100\mu\text{A}$	600			V
I_R	Reverse Current	$V_R=600\text{V}$	$T_j=25^\circ\text{C}$		10	μA
			$T_j=150^\circ\text{C}$		500	μA
V_F	Forward Voltage	$I_F=10\text{A}$	$T_j=25^\circ\text{C}$	1.3	1.6	V
			$T_j=150^\circ\text{C}$	1.06		V
C_{tot}	Total Capacitance	$V_R=200\text{V}, f=1\text{MHz}$		12		pF
trr	Reverse Recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$		32		ns
		$I_F=1\text{A}, V_R=30\text{V}, di_F/dt=200\text{A}/\mu\text{s}$		24		ns

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless otherwise specified)

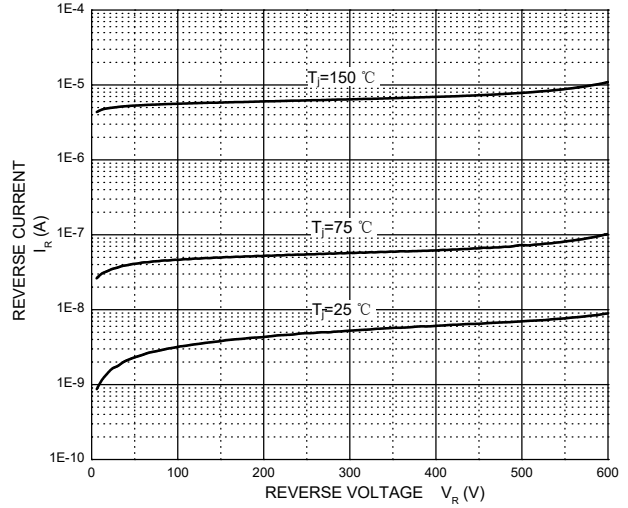
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	$I_F=10\text{A}, V_R=400\text{V}, di_F/dt=200\text{A}/\mu\text{s}$		76		ns
I_{RRM}	Max. Reverse Recovery Current			4.8		A
Qrr	Reverse Recovery Charge			223		nC
trr	Reverse Recovery Time	$I_F=10\text{A}, V_R=400\text{V}, di_F/dt=200\text{A}/\mu\text{s}, T_j=125^\circ\text{C}$		105		ns
I_{RRM}	Max. Reverse Recovery Current			8		A
Qrr	Reverse Recovery Charge			495		nC
trr	Reverse Recovery Time	$I_F=10\text{A}, V_R=400\text{V}, di_F/dt=600\text{A}/\mu\text{s}, T_j=125^\circ\text{C}$		60		ns
I_{RRM}	Max. Reverse Recovery Current			19		A
Qrr	Reverse Recovery Charge			646		nC

Typical Characteristics

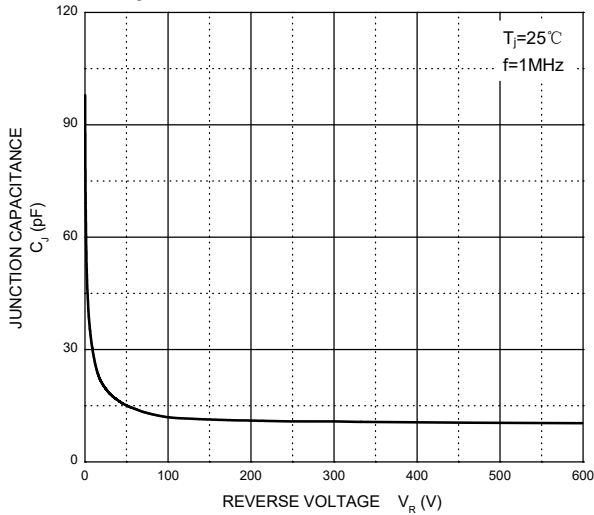
Forward Characteristics



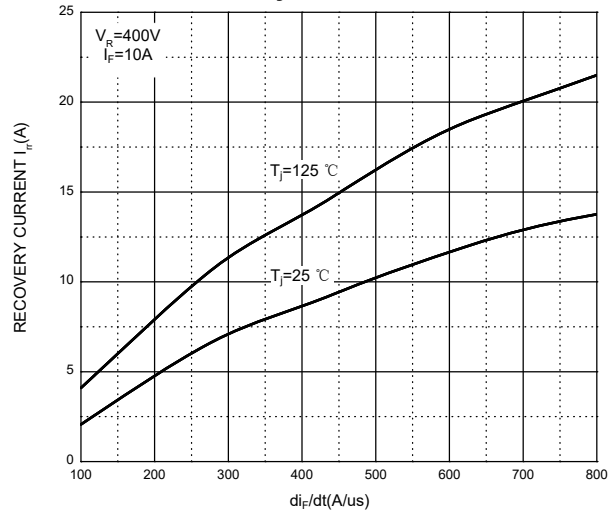
Reverse Characteristics



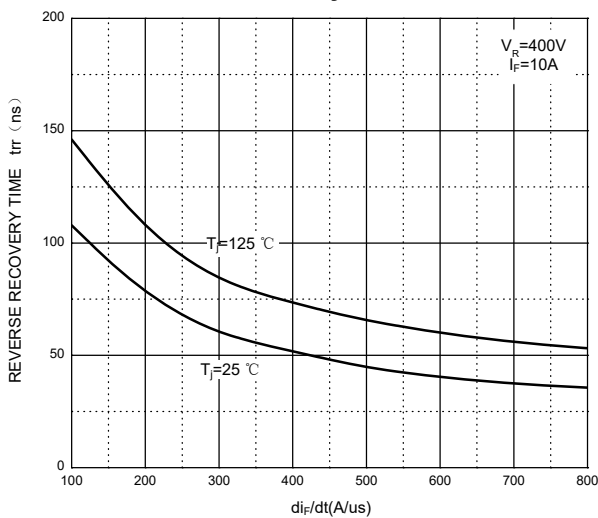
Capacitance Characteristics Per Diode



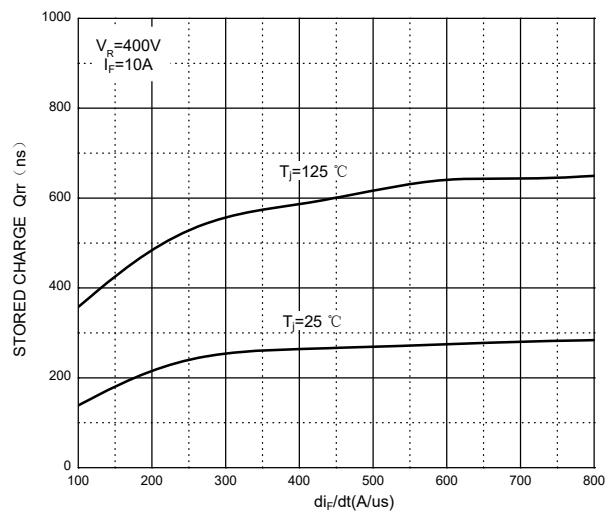
Recovery Current vs. di_F/dt



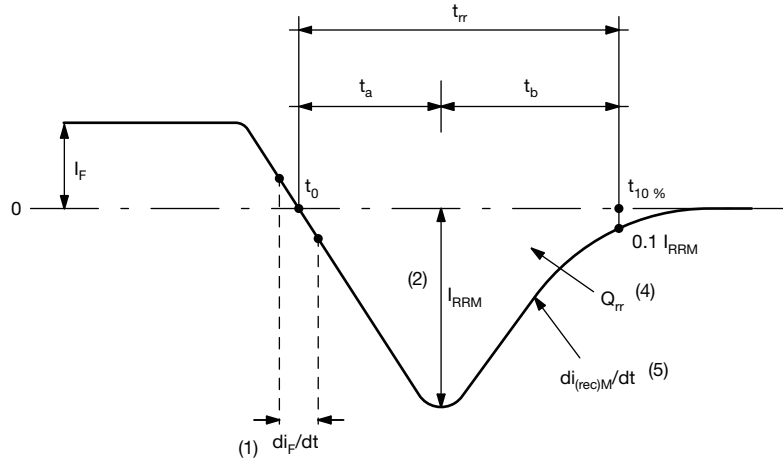
Reverse Recovery Time vs. di_F/dt



Stored Charge vs. di_F/dt

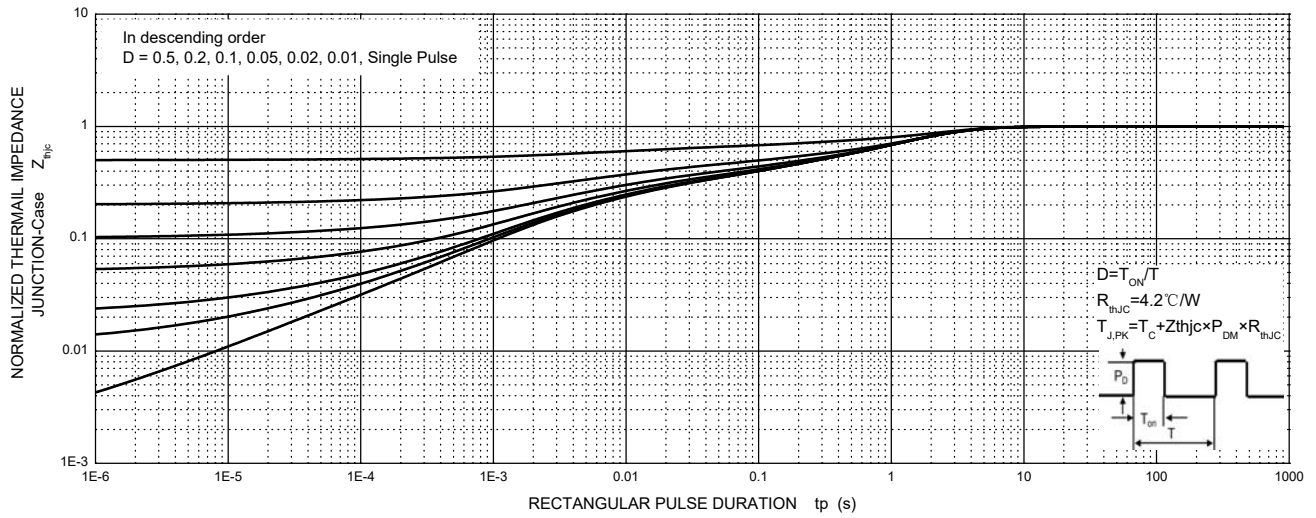


Typical Characteristics

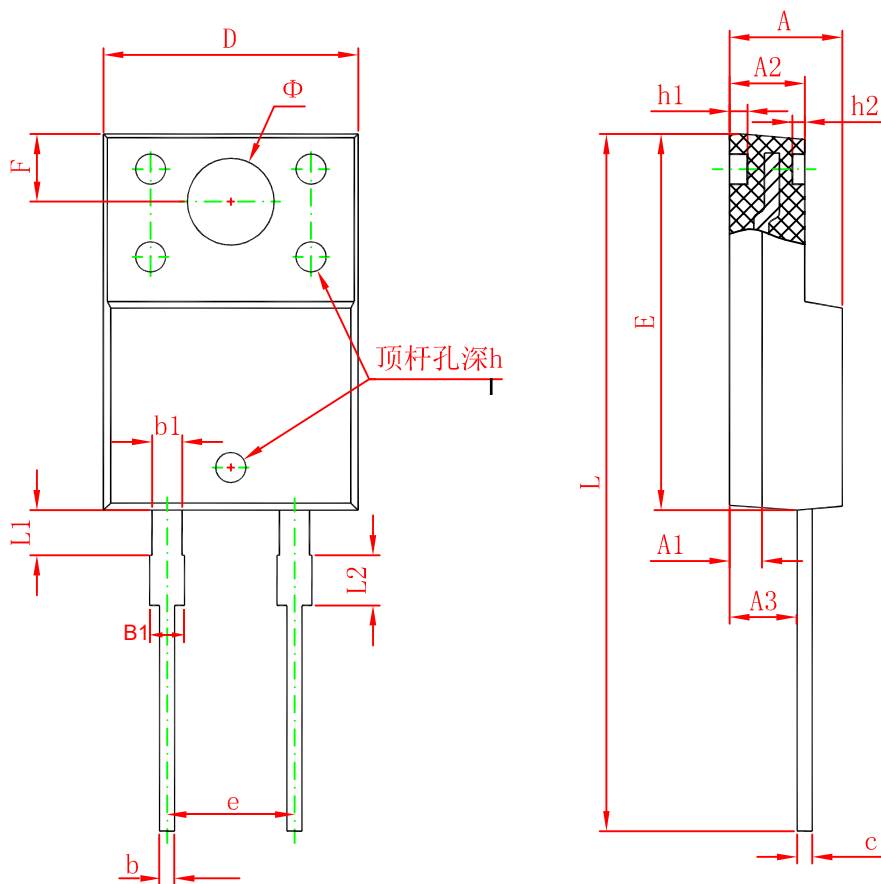


Reverse Recovery Waveform and Definitions

MURF10H60 Transient Thermal Impedance, Junction-Case



TO-220F-2L Package Outline Dimensions



Symbol	Dimensions In Inches	
	Min.	Max.
A	4.300	4.700
A1	1.200 REF.	
A2	2.800	3.200
A3	2.500	2.900
b	0.710	0.910
b1	1.100	1.350
B1	1.150	1.400
c	0.500	0.750
D	9.960	10.360
E	14.800	15.200
e	5.080 TYP.	
F	2.700 REF.	
Φ	3.300 REF.	
h	0.000	0.300
h1	0.800 REF.	
h2	0.500 REF.	
L	28.000	28.400
L1	2.100	2.400
L2	1.300	1.700

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