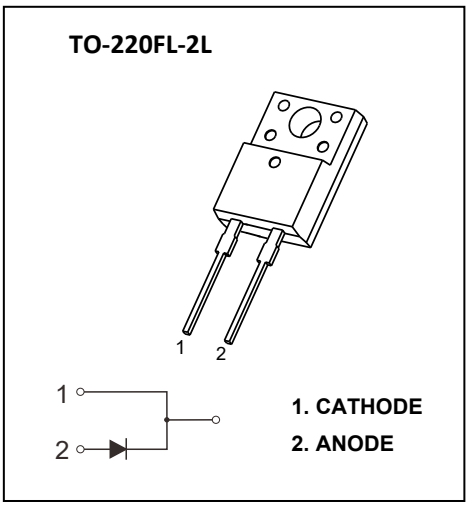
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-220FL-2L Plastic-Encapsulate Diode

MURF30H60 HYPERFAST RECTIFIER,FRED



MAIN CHARACTERISTICS

I_O	30A
V_{RRM}	600V
T_{rr}	21ns
T_j	175℃
$V_{F(typ)}$	1.55V(@T_j=150℃)

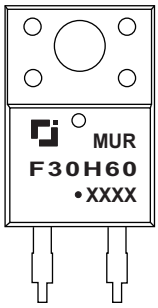
FEATURES

- 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



MURF30H60= Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_C=25℃ unless otherwise noted)

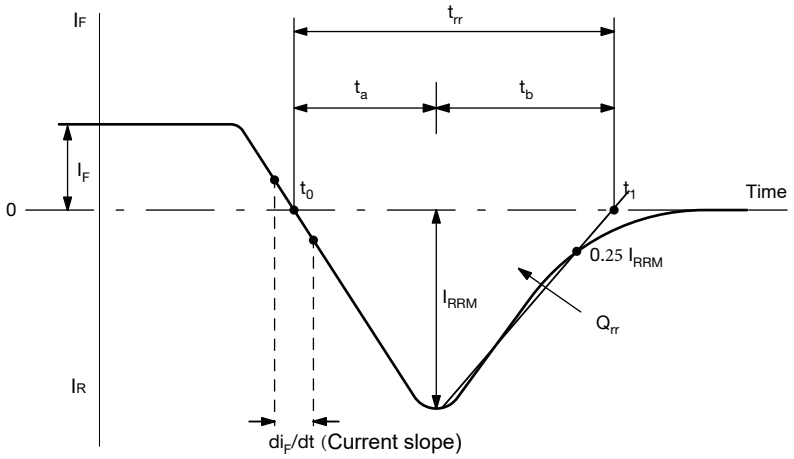
Symbol	Parameter	MURF30H60	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average Forward Current(T_C=92℃)	30	A
$I_{F(RMS)}$	RMS Forward Current(T_C=92℃)	42	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	250	A
P_D	Power dissipation	79	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case	1.9	℃/W
T_j	Operating Junction Temperature Range	-55 ~ +175	℃
T_{stg}	Storage Temperature Range	-55 ~ +175	℃

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	IR=100μA		600			V
I_R	Reverse Current	VR=600V	T_j=25℃			10	μA
			T_j=150℃			1	mA
V_F	Forward Voltage	IF=30A	T_j=25℃		2.7	3	V
			T_j=150℃		1.55		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			100		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			32		ns
		IF=1A,VR=30V, di_F/dt =200A/us			21		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

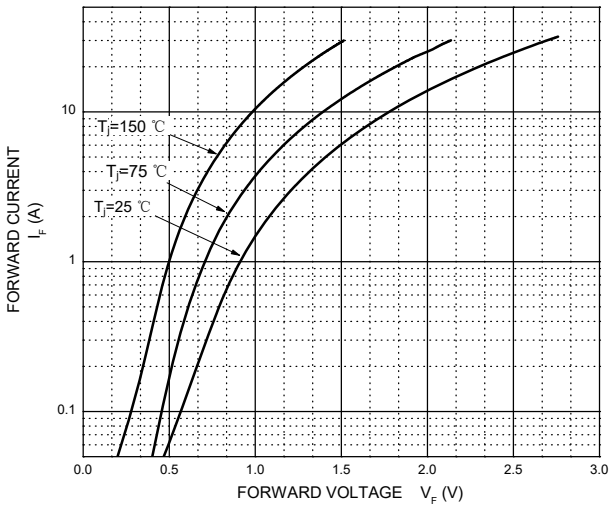
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=200A/μs		29		ns
I_{RRM}	Max. Reverse Recovery Current			1.9		A
Qrr	Reverse Recovery Charge			32		nC
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=200A/μs, T_j=125℃		60		ns
I_{RRM}	Max. Reverse Recovery Current			6		A
Qrr	Reverse Recovery Charge			201		nC
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=600A/μs, T_j=125℃		39		ns
I_{RRM}	Max. Reverse Recovery Current			14		A
Qrr	Reverse Recovery Charge			359		nC



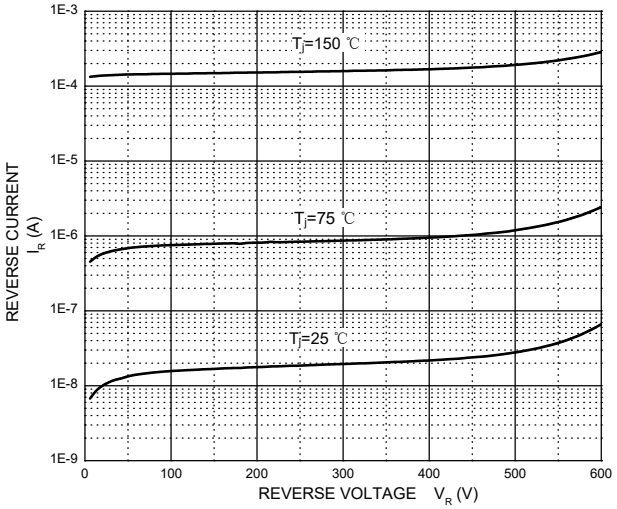
Reverse Recovery Waveform and Definitions

Typical Characteristics

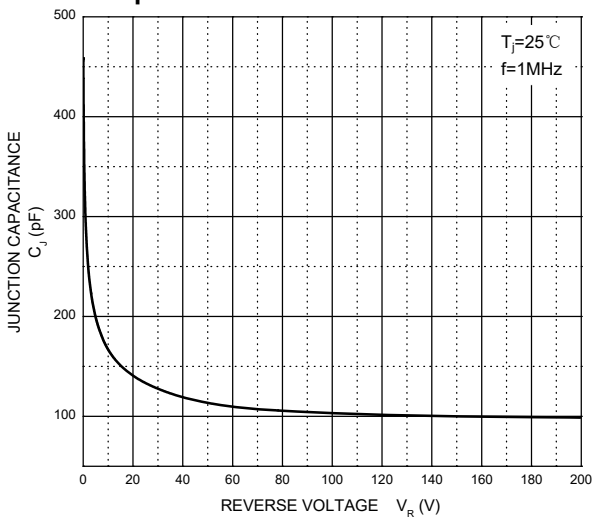
Forward Characteristics



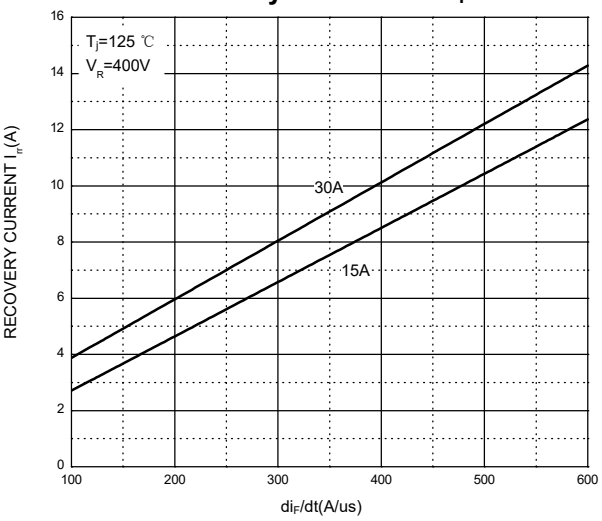
Reverse Characteristics



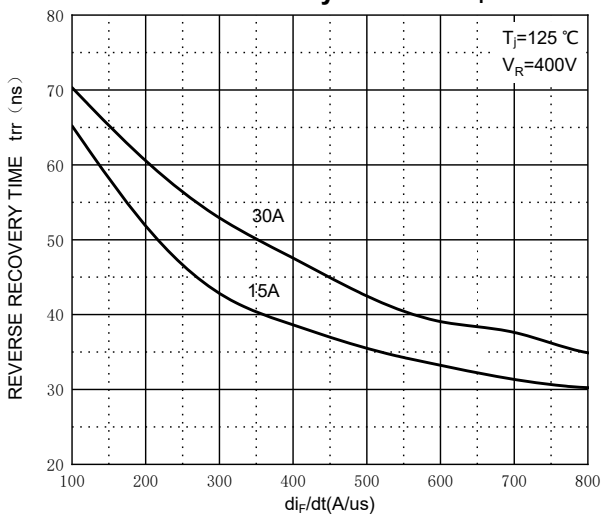
Capacitance Characteristics Per Diode



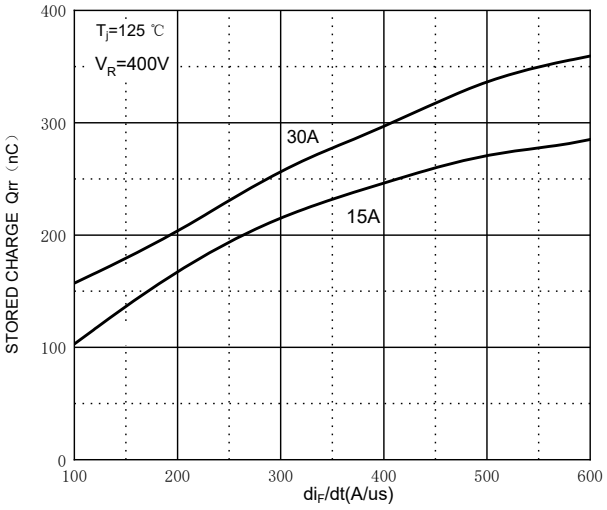
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

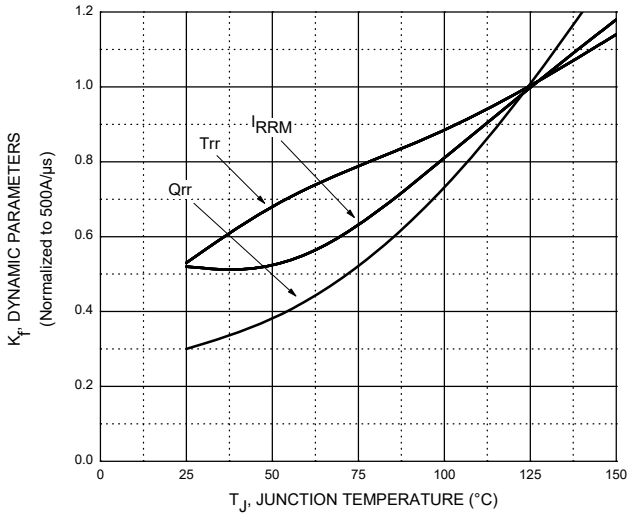


Stored Charge vs. di_F/dt

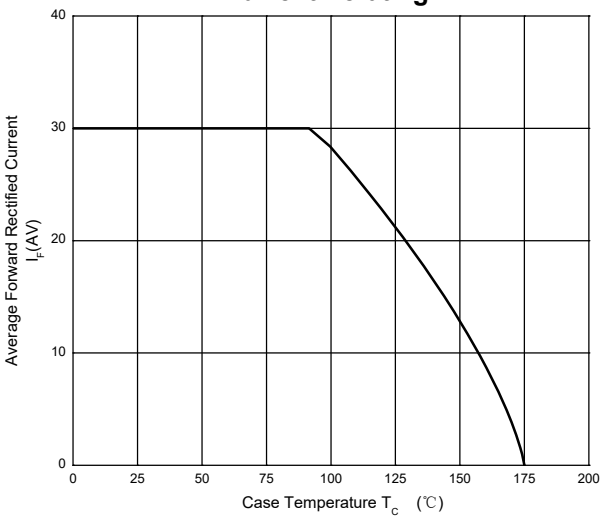


Typical Characteristics

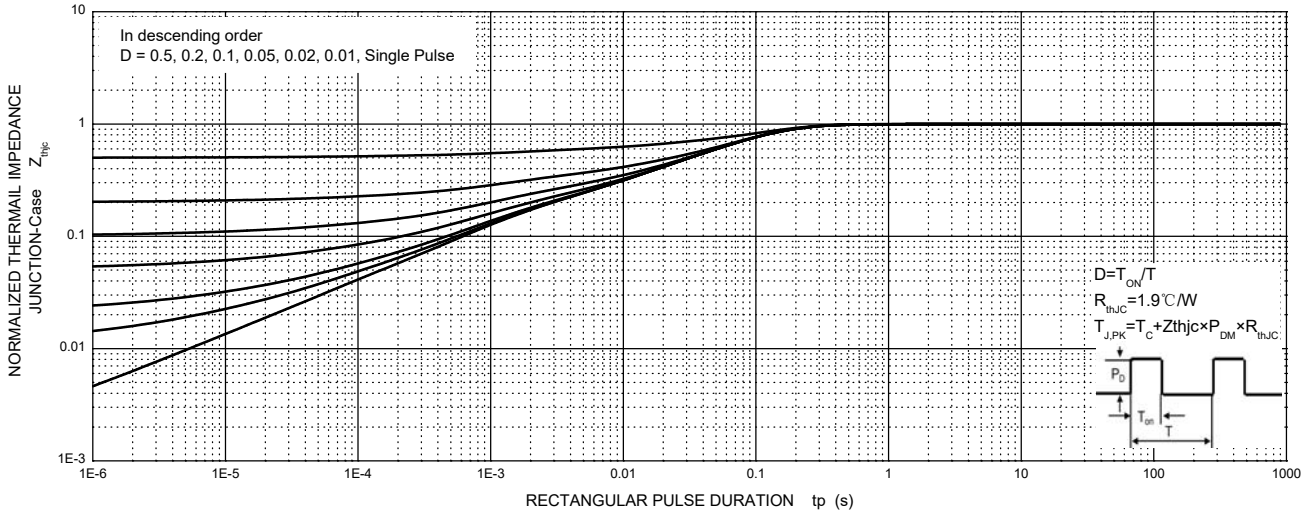
Dynamic Parameters vs. Junction Temperature



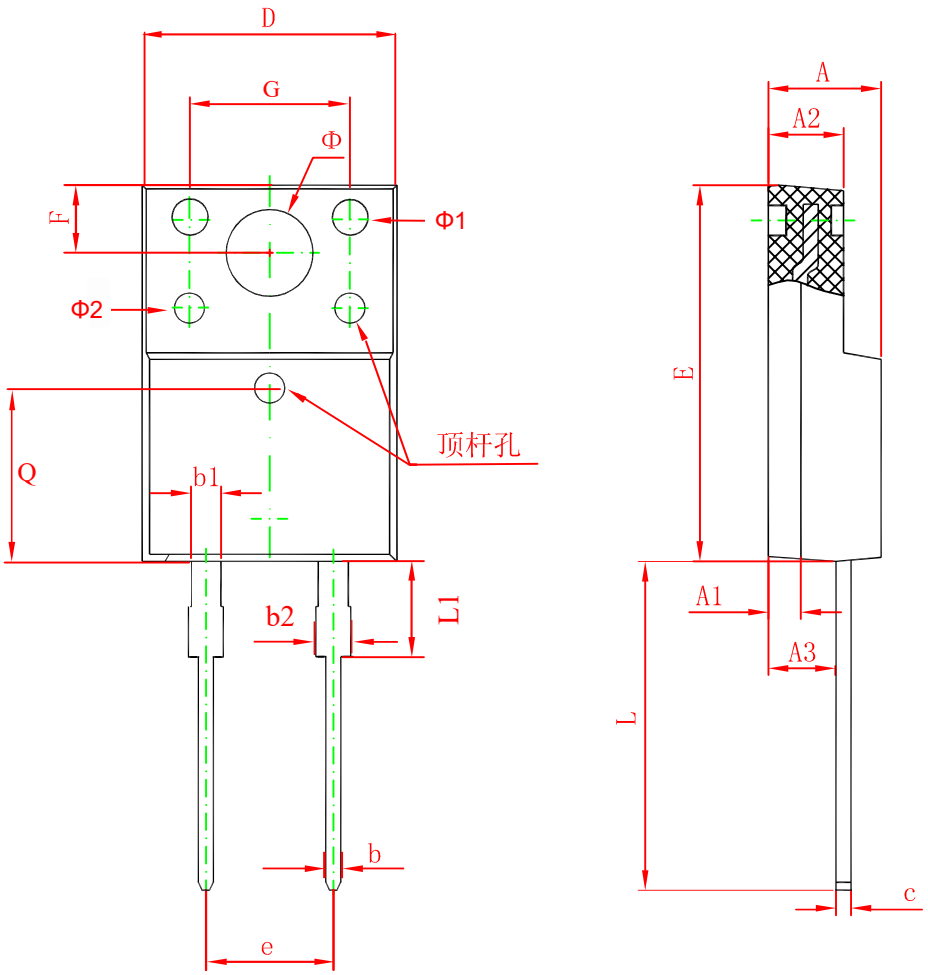
Current Derating



MURF30H60 Transient Thermal Impedance, Junction-Case



TO-220FL-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.50	4.90	0.177	0.193
A1	0.38	0.48	0.015	0.019
A2	2.34	2.74	0.092	0.108
A3	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.34	0.049	0.053
b2	1.28	1.43	0.050	0.056
c	0.45	0.60	0.018	0.024
D	9.96	10.36	0.392	0.408
e	5.08 TYP.		0.200 TYP.	
E	15.67	16.07	0.617	0.633
F	3.20	3.40	0.126	0.134
G	6.90	7.10	0.272	0.280
L	12.76	13.16	0.502	0.518
L1	-	3.33		0.131
Q	6.47 REF.		0.255 REF.	
Φ	3.00	3.38	0.118	0.133
Φ1	1.40	1.60	0.055	0.063
Φ2	0.95	1.05	0.037	0.041