SZCJ Shenzhen Changji Semiconductor Co., LTD.

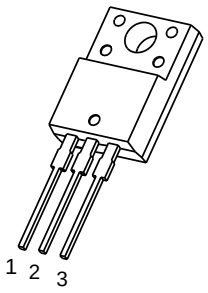
TO-220F-B Plastic-Encapsulate Diode

MURF1660CT HYPERFAST RECTIFIER,FRED

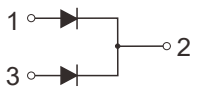
MAIN CHARACTERISTICS

I_O	16(8×2)A
V_{RRM}	600V
T_{rr}	25ns
T_j	150℃
$V_{F(typ)}$	1.1V(@T_j=125℃)

TO-220F-B



1. ANODE
2. CATHODE
3. ANODE



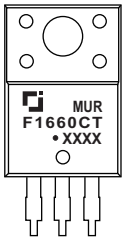
FEATURES

- 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



MURF1660CT = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_C=25℃unless otherwise noted)

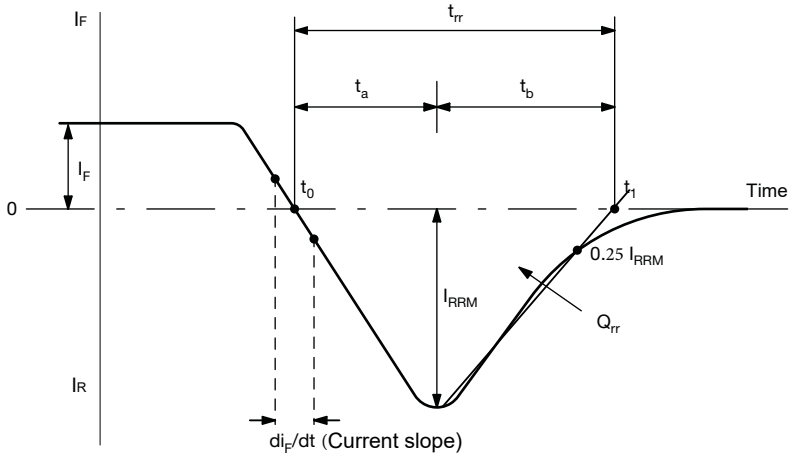
Symbol	Parameter	MURF1660CT	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current@ Per leg(T_C=99℃)	8	A
	Average rectified output current@ Total device(T_C=99℃)	16	
$I_{F(RMS)}$	RMS Forward Curren(T_C=99℃)	11	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	100	A
P_D	Power dissipation	33	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case	3.8	℃/W
T_j	Operating Junction Temperature Range	-55 ~ +150	℃
T_{stg}	Storage Temperature Range	-55 ~ +150	℃

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℃			1.0	μA
			T_j=125℃			500	μA
V_F	Forward Voltage	IF=8A	T_j=25℃		1.2	1.6	V
			T_j=125℃		1.1		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			7		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			30		ns
		IF=1A,VR=30V, di_F/dt =200A/us			25		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

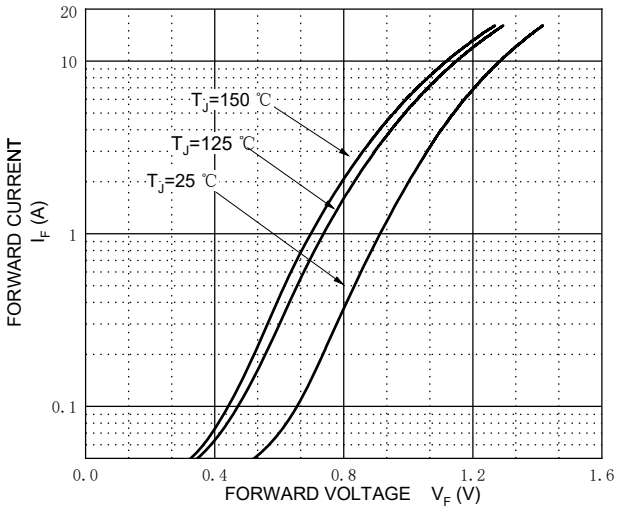
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=10A, VR=400V, di_F/dt=200A/μs		86.7		ns
I_{RRM}	Max. Reverse Recovery Current			5.4		A
Qrr	Reverse Recovery Charge			285		nC
trr	Reverse Recovery Time	IF=10A, VR=400V, di_F/dt=200A/μs, T_j=125℃		113		ns
I_{RRM}	Max. Reverse Recovery Current			7.9		A
Qrr	Reverse Recovery Charge			540		nC
trr	Reverse Recovery Time	IF=10A, VR=400V, di_F/dt=600A/μs, T_j=125℃		67.4		ns
I_{RRM}	Max. Reverse Recovery Current			18		A
Qrr	Reverse Recovery			716		nC



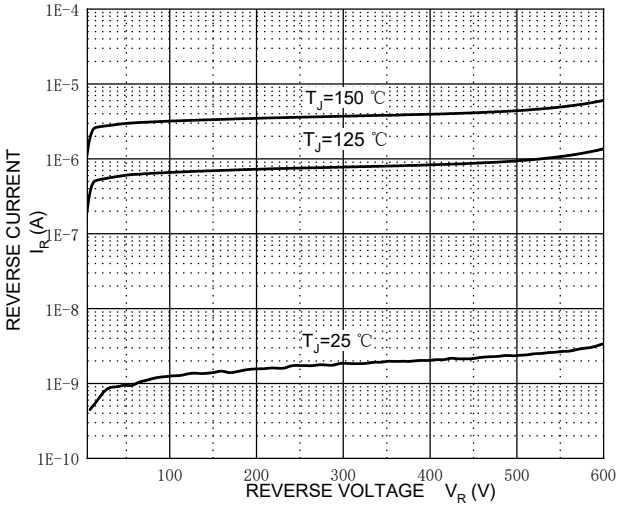
Reverse Recovery Waveform and Definitions

Typical Characteristics

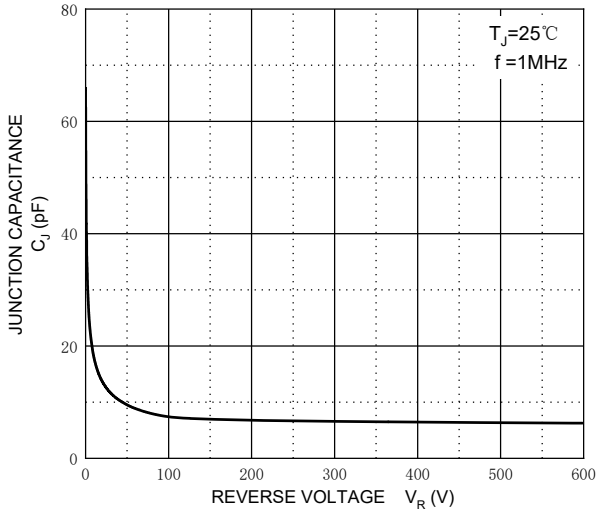
Forward Characteristics



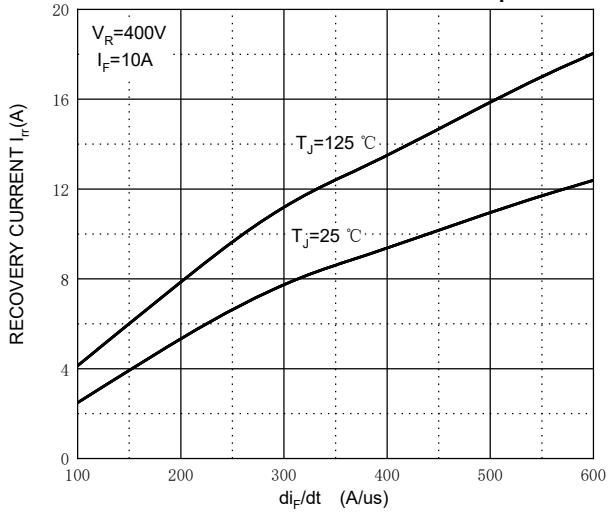
Reverse Characteristics



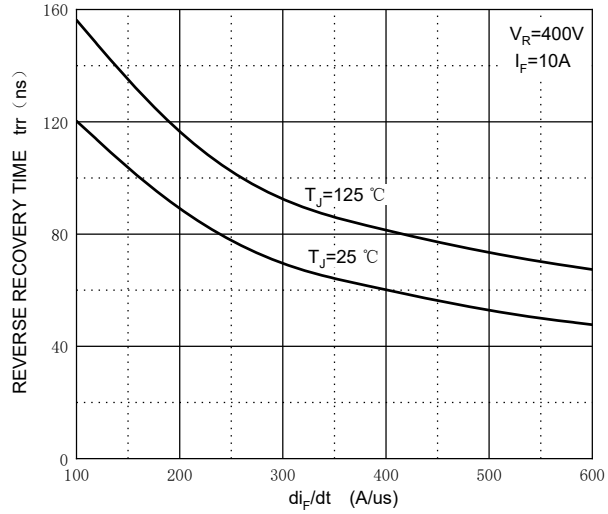
Capacitance Characteristics Per Diode



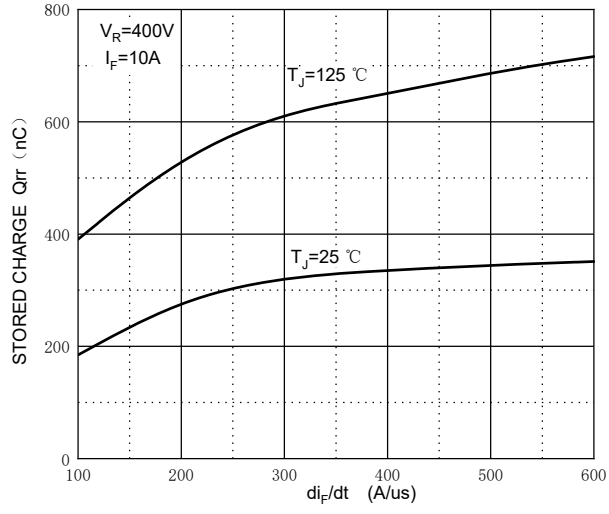
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

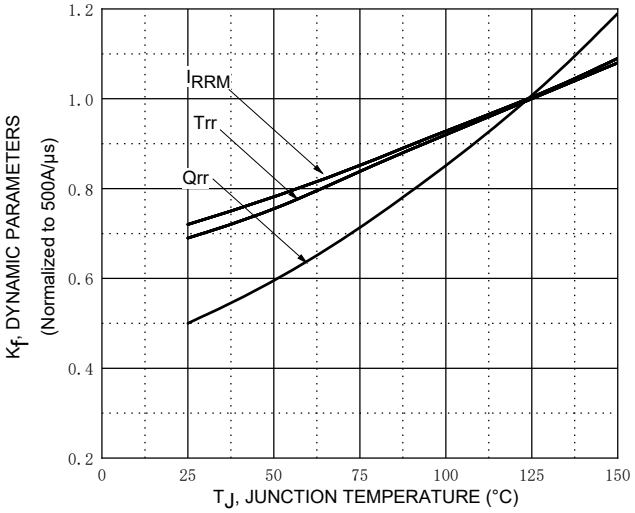


Stored Charge vs. di_F/dt

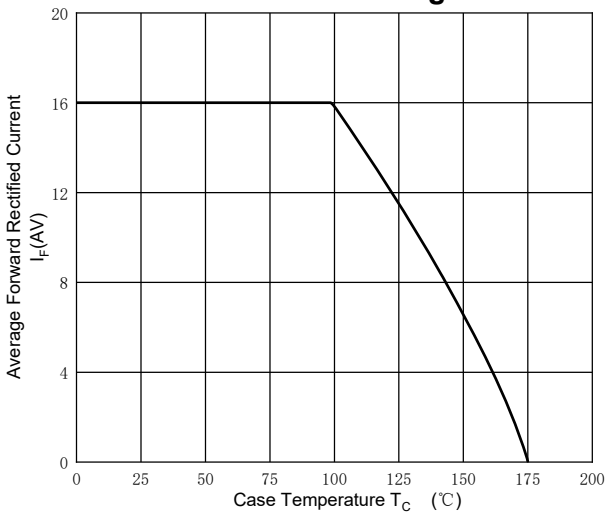


Typical Characteristics

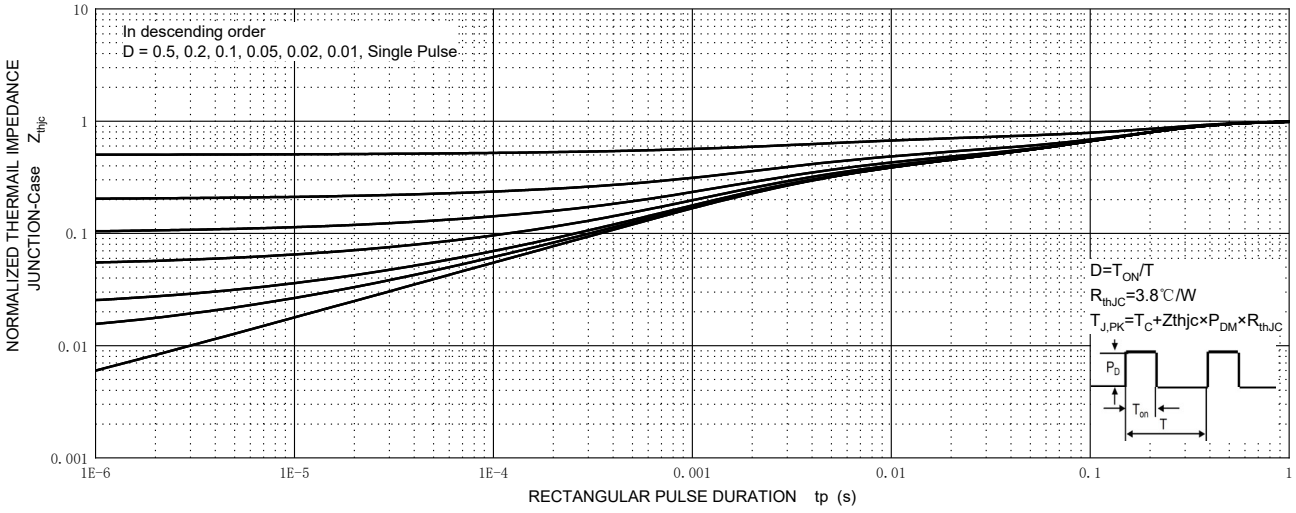
Dynamic Parameters vs. Junction Temperature



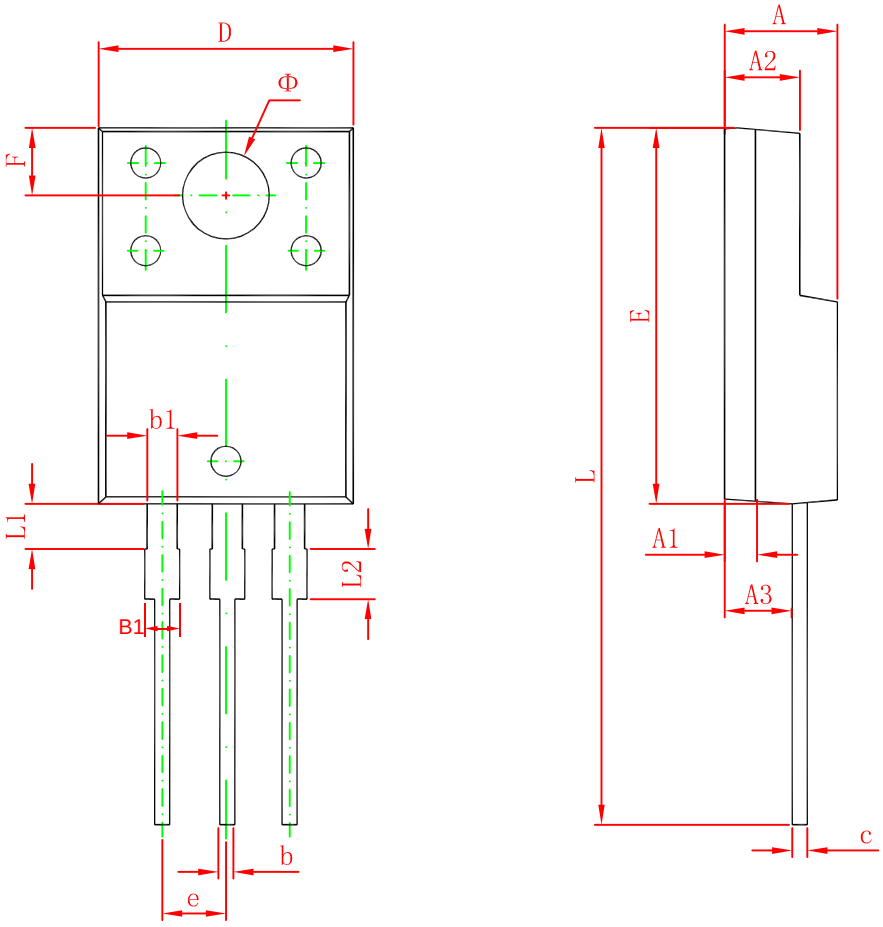
Current Derating



MURF1660CT Transient Thermal Impedance, Junction-Case



TO-220F-B Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.200 REF.		0.047 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.710	0.910	0.028	0.036
b1	1.100	1.350	0.043	0.053
B1	1.150	1.400	0.045	0.055
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.300	3.700	0.130	0.146
L	28.000	28.400	1.102	1.118
L1	2.100	2.400	0.082	0.094
L2	1.300	1.700	0.051	0.066