JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

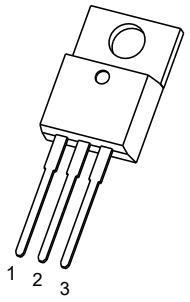
TO-220-3L Plastic-Encapsulate Diode

MUR30H40CTB HYPERFAST RECTIFIER,FRED

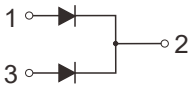
MAIN CHARACTERISTICS

I_O	30(15×2)A
V_{RRM}	400V
T_{rr}	23ns
T_j	175℃
$V_{F(typ)}$	0.88V(@T_j=150℃)

TO-220-3L



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

MUR30H40CTB = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_C=25℃unless otherwise noted)

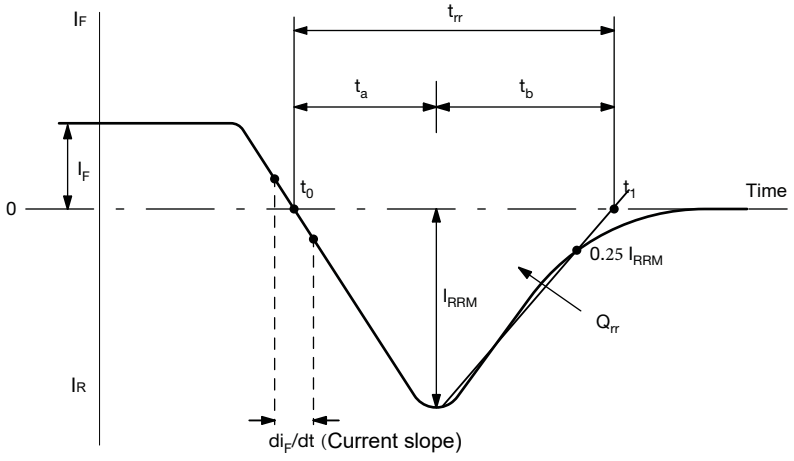
Symbol	Parameter	MUR30H40CTB	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	400	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current@ Per leg(T_C=154℃)	15	A
	Average rectified output current@ Total device(T_C=154℃)	30	
$I_{F(RMS)}$	RMS Forward Current(T_C=154℃)	21	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	250	A
P_D	Power dissipation	88	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case@ Per leg	1.7	℃/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		400			V
I_R	Reverse Current	VR=400V	T_j=25℃			5.0	μA
			T_j=150℃			500	μA
V_F	Forward Voltage	IF=15A	T_j=25℃		1.1	1.4	V
			T_j=150℃		0.88		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			28.4		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			26		ns
		IF=1A,VR=30V, di_F/dt =200A/us			23		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

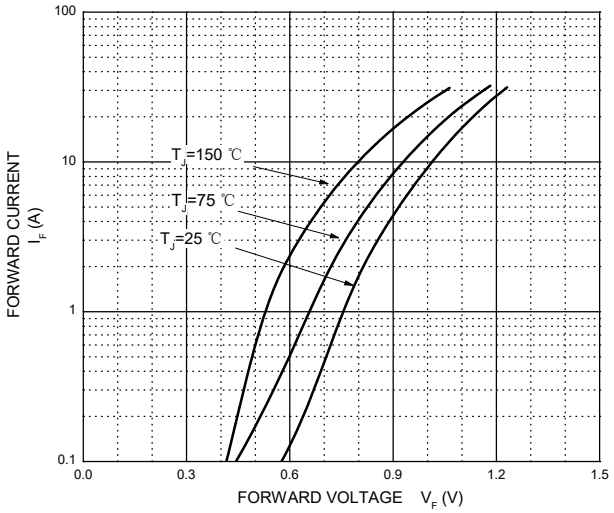
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=200A/μs		53.9		ns
I_{RRM}	Max. Reverse Recovery Current			4.6		A
Qrr	Reverse Recovery Charge			144		nC
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=200A/μs, T_j=125℃		88.3		ns
I_{RRM}	Max. Reverse Recovery Current			9.1		A
Qrr	Reverse Recovery Charge			446		nC
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=600A/μs, T_j=125℃		51.6		ns
I_{RRM}	Max. Reverse Recovery Current			22.9		A
Qrr	Reverse Recovery Charge			628		nC



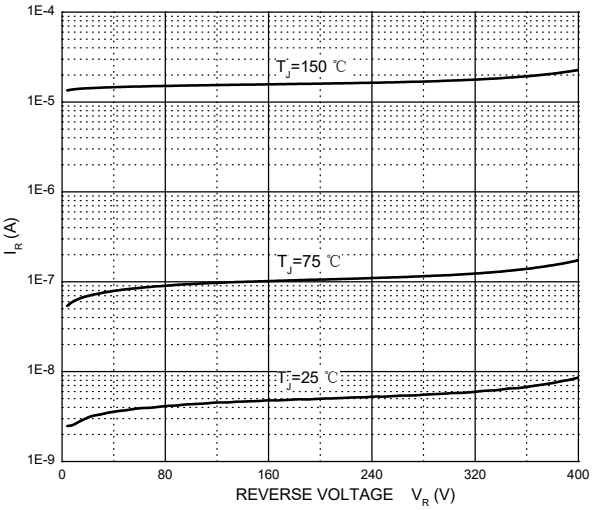
Reverse Recovery Waveform and Definitions

Typical Characteristics

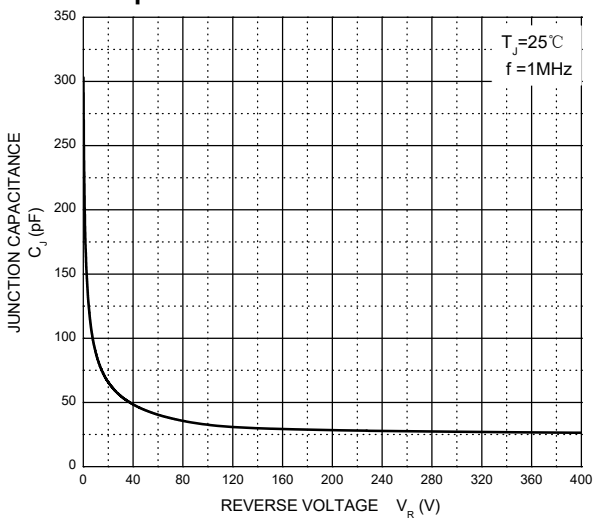
Forward Characteristics



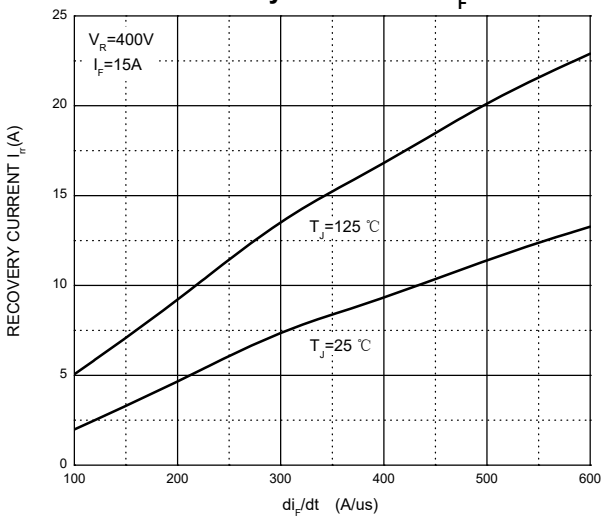
Reverse Characteristics



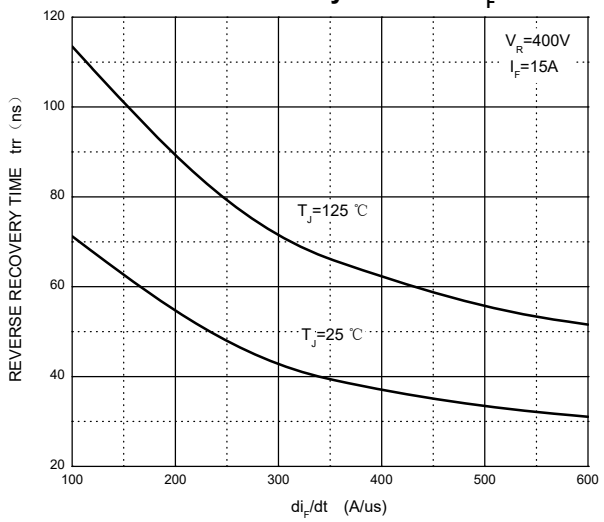
Capacitance Characteristics Per Diode



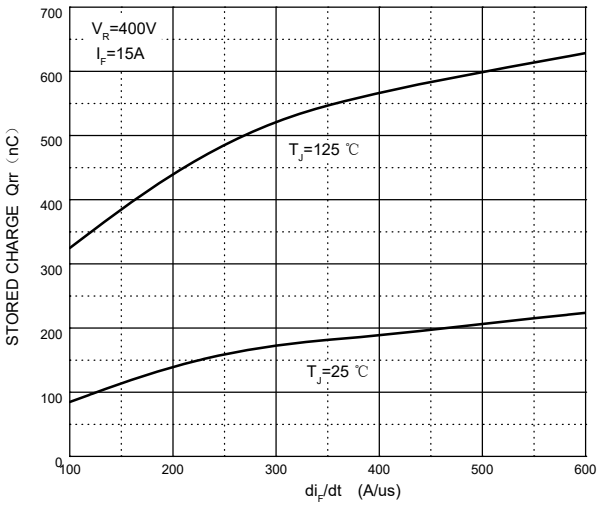
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

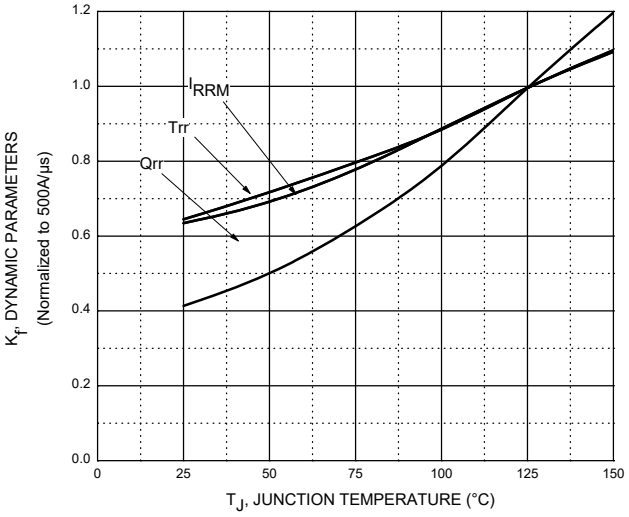


Stored Charge vs. di_F/dt

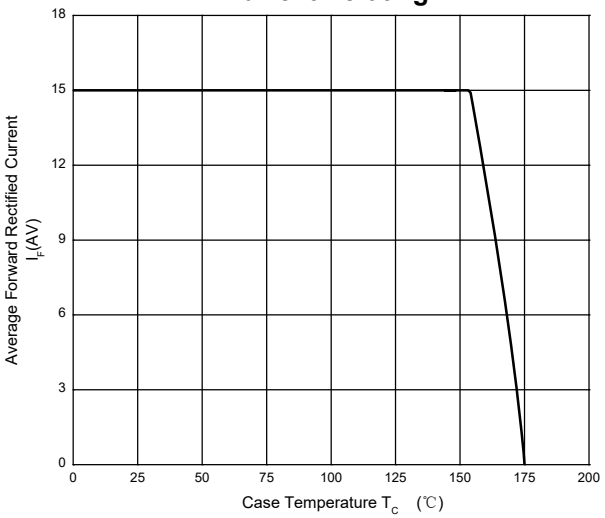


Typical Characteristics

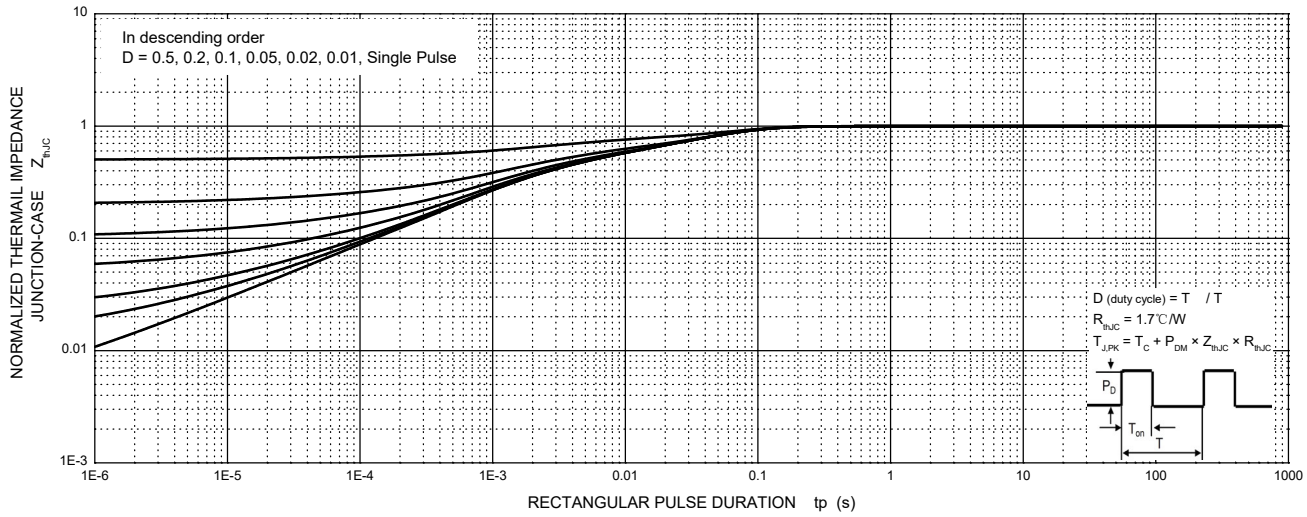
Dynamic Parameters vs. Junction Temperature



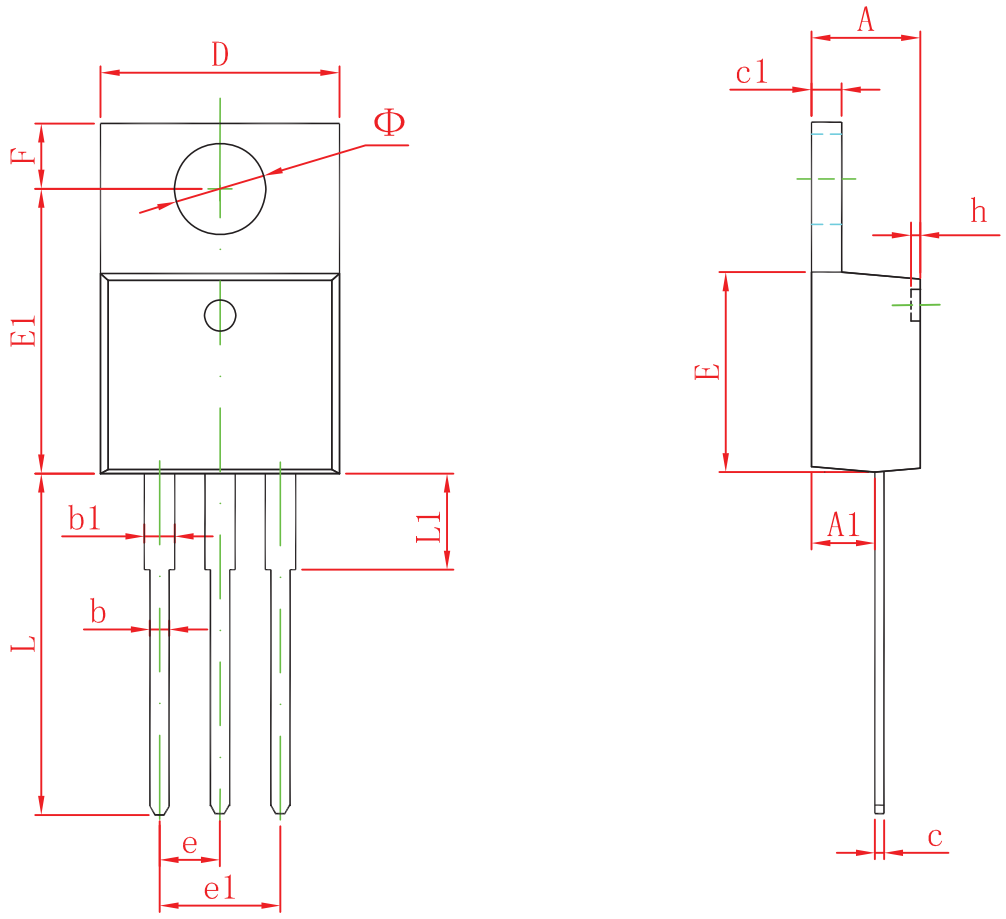
Current Derating



MUR30H40CTB Transient Thermal Impedance, Junction-Case



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.450	4.750	0.175	0.187
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.300	0.500	0.012	0.020
c1	1.170	1.370	0.046	0.054
D	9.830	10.330	0.387	0.407
E	8.500	8.900	0.335	0.350
E1	12.050	12.650	0.474	0.498
e	2.540 TYP		0.100 TYP	
e1	4.900	5.200	0.192	0.205
F	2.540	2.940	0.100	0.116
h	0.100 TYP		0.004 TYP	
L	13.300	13.800	0.523	0.543
L1	3.540	3.940	0.139	0.155
Φ	3.735	3.935	0.147	0.155