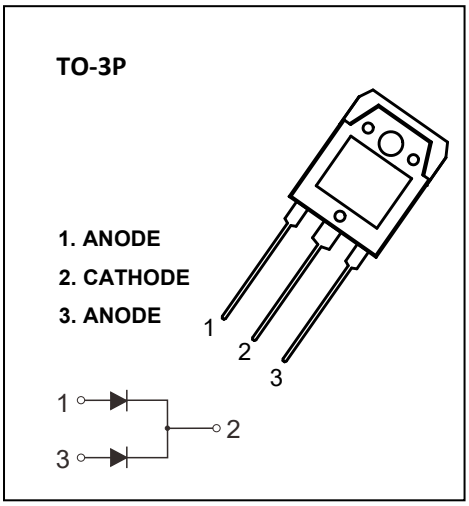
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-3P Plastic-Encapsulate Diode

MURP30H60CTB HYPERFAST RECTIFIER,FRED



MAIN CHARACTERIS

I_O	30(15×2)A
V_{RRM}	600V
T_{rr}	24ns
T_j	175℃
$V_{F(typ)}$	1.1V(@T_j=150℃)

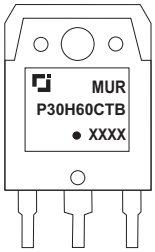
FEATURES

- 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



MURP30H60CTB = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_C=25℃unless otherwise noted)

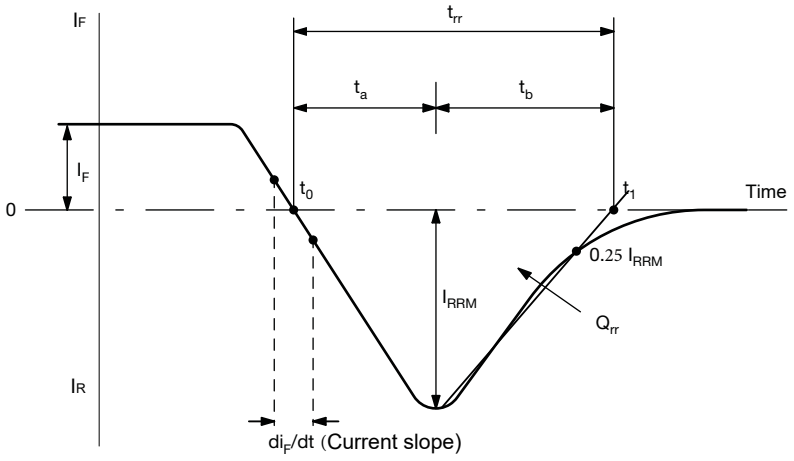
Symbol	Parameter	MURP30H60CTB	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current@ Per leg(T_C=158℃)	15	A
	Average rectified output current@ Total device(T_C=158℃)	30	
$I_{F(RMS)}$	RMS Forward Current(T_C=158℃)	21	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms）	240	A
P_D	Power dissipation	150	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case@ Per leg	1.0	℃/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℃			500	μA
V_F	Forward Voltage	IF=15A	T_j=25℃		1.5	2.0	V
			T_j=150℃		1.1		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			16		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			27		ns
		IF=1A,VR=30V, di_F/dt =200A/us			24		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

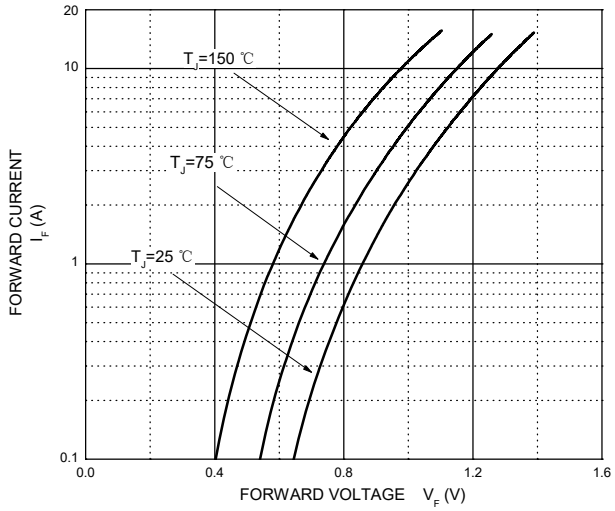
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=15A, VR=400V, di_F/dt=200A/μs		66		ns
I_{RRM}	Max. Reverse Recovery Current			4.0		A
Qrr	Reverse Recovery Charge			172		nC
trr	Reverse Recovery Time	IF=15A, VR=400V, di_F/dt=200A/μs, T_j=125℃		89		ns
I_{RRM}	Max. Reverse Recovery Current			7.0		A
Qrr	Reverse Recovery Charge			378		nC
trr	Reverse Recovery Time	IF=15A, VR=400V, di_F/dt=600A/μs, T_j=125℃		50		ns
I_{RRM}	Max. Reverse Recovery Current			20		A
Qrr	Reverse Recovery Charge			540		nC



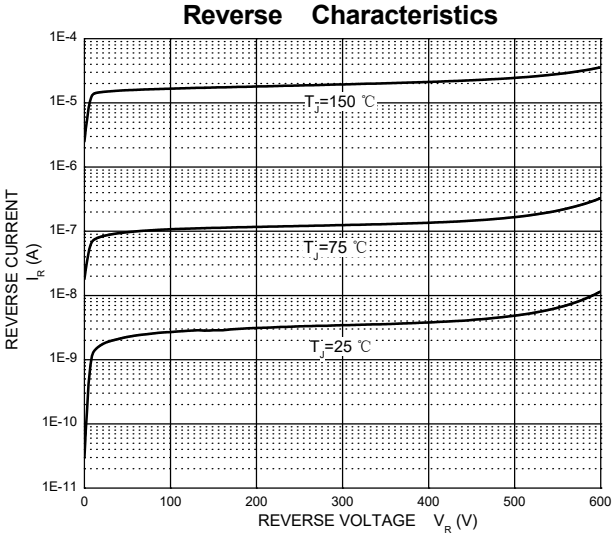
Reverse Recovery Waveform and Definitions

Typical Characteristics

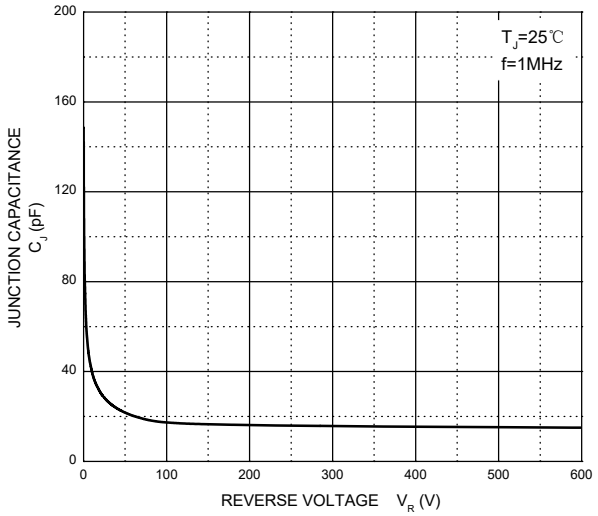
Forward Characteristics



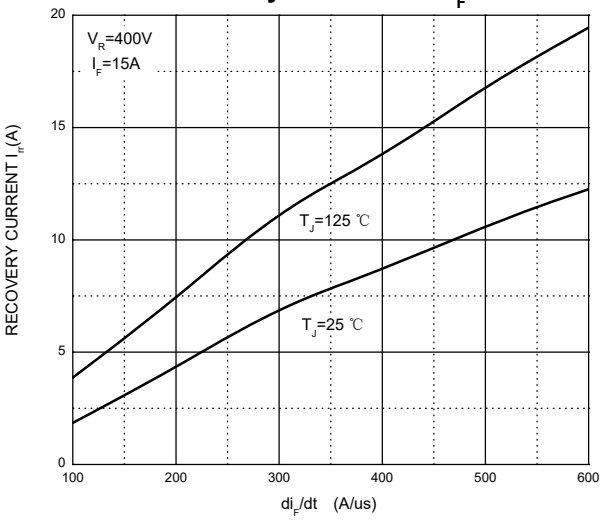
Reverse Characteristics



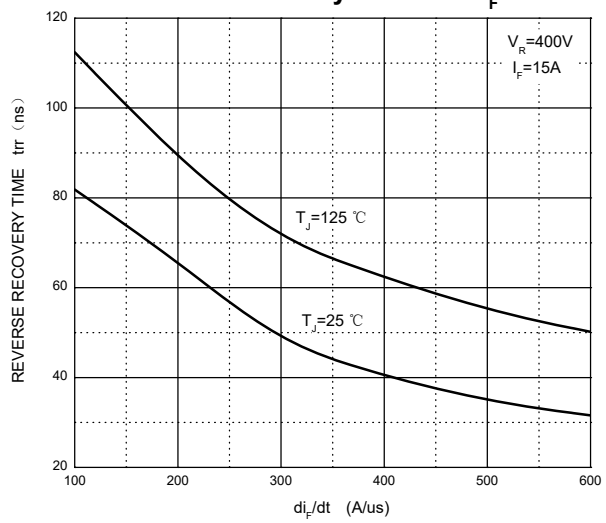
Capacitance Characteristics Per Diode



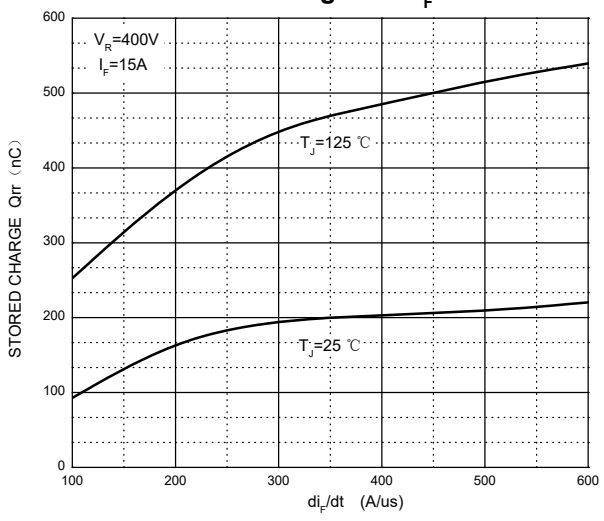
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

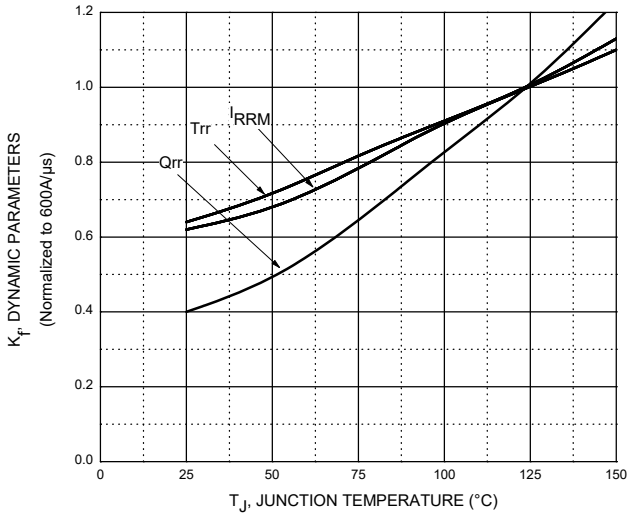


Stored Charge vs. di_F/dt

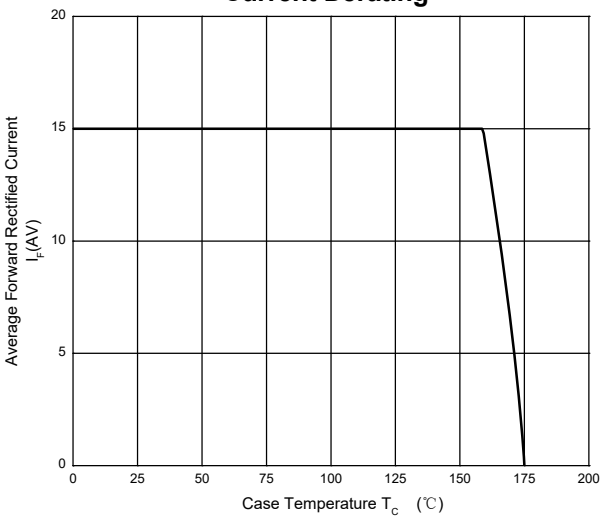


Typical Characteristics

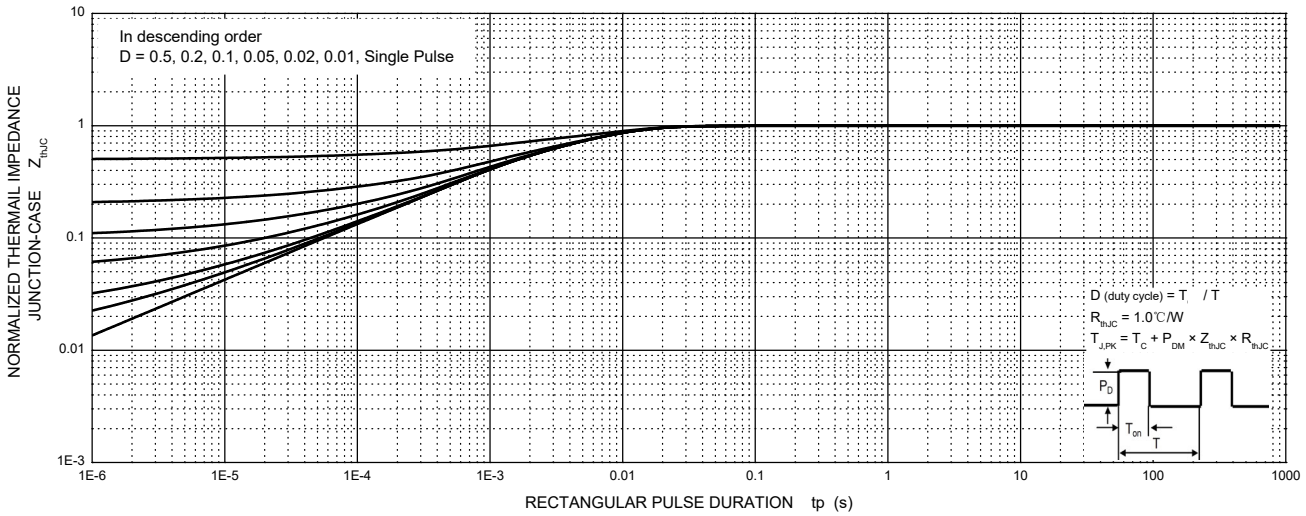
Dynamic Parameters vs. Junction Temperature



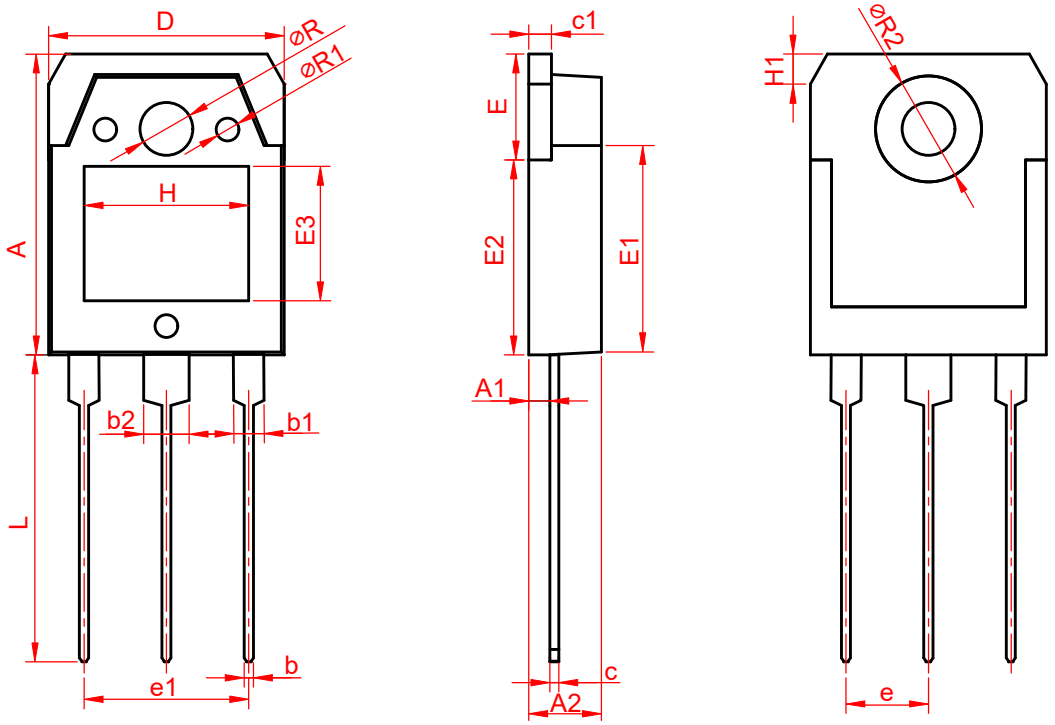
Current Derating



MURP30H60CTB Transient Thermal Impedance, Junction-Case



TO-3P Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	19.700	20.100	0.776	0.791
A1	1.320	1.480	0.052	0.058
A2	4.700	4.900	0.185	0.193
b	1.000 REF.		0.039 REF.	
b1	2.000 REF.		0.079 REF.	
b2	3.000 REF.		0.118 REF.	
c	0.600 REF.		0.024 REF.	
c1	1.500 REF.		0.059 REF.	
D	15.500	15.700	0.610	0.618
E	6.850	7.150	0.270	0.281
E1	13.700	14.000	0.539	0.551
E2	12.750	13.050	0.502	0.514
E3	8.800	9.000	0.346	0.354
e	5.450 BSC.		0.215 BSC.	
e1	10.900 BSC.		0.429 BSC.	
H	10.800	11.000	0.425	0.433
H1	1.900	2.100	0.075	0.083
L	20.100	20.500	0.791	0.807
R	3.500 REF.		0.138 REF.	
R1	1.500 REF.		0.059 REF.	
R2	7.000 REF.		0.276 REF.	