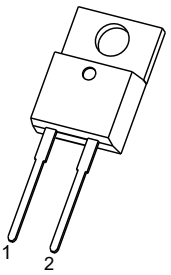
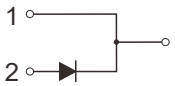
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-220-2L Plastic-Encapsulate Diode

MUR30H120 HYPERFAST RECTIFIER,FRED

TO-220-2L





1. CATHODE
2. ANODE

MAIN CHARACTERISTICS

I_O	30A
V_{RRM}	1200V
T_{rr}	27ns
T_j	175℃
$V_{F(typ)}$	1.9V(@T_j=150℃)

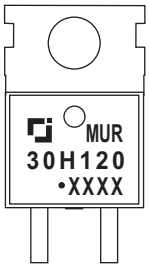
FEATURES

- 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



MUR30H120= 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	MUR30H120	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	1200	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average Forward Current(T_C=70℃)	30	A
$I_{F(RMS)}$	RMS Forward Current(T_C=70℃)	42	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	270	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	℃

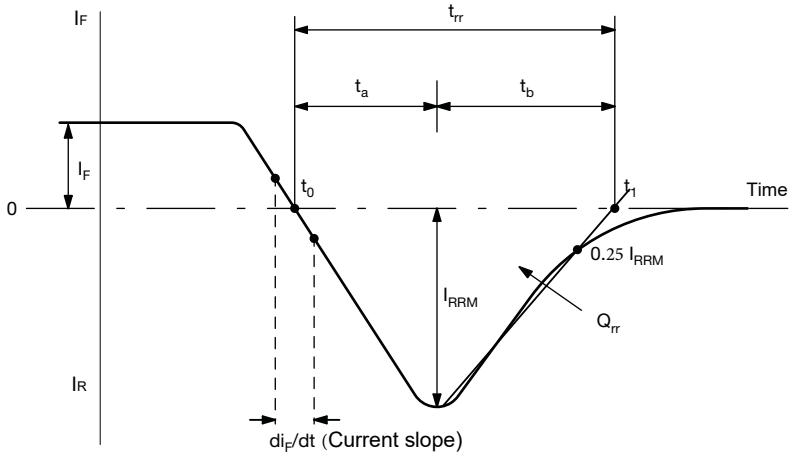
Typical Characteristics

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	IR=100μA		1200			V
I_R	Reverse Current	VR=1200V	T_j=25℃			10	μA
			T_j=150℃			1	mA
V_F	Forward Voltage	IF=30A	T_j=25℃		2.6	3.2	V
			T_j=150℃		1.9		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			20		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			37		ns
		IF=1A,VR=30V, di_F/dt =200A/us			27		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

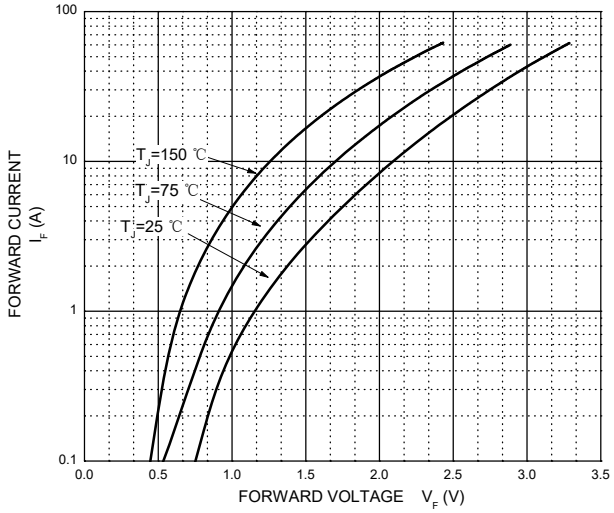
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=30A, VR=600V, di_F/dt=200A/μs		170		ns
I_{RRM}	Max. Reverse Recovery Current			5		A
Qrr	Reverse Recovery Charge			486		nC
trr	Reverse Recovery Time	IF=30A, VR=600V, di_F/dt=200A/μs, T_j=125℃		241		ns
I_{RRM}	Max. Reverse Recovery Current			12		A
Qrr	Reverse Recovery Charge			1568		nC
trr	Reverse Recovery Time	IF=30A, VR=600V, di_F/dt=600A/μs, T_j=125℃		150		ns
I_{RRM}	Max. Reverse Recovery Current			29		A
Qrr	Reverse Recovery Charge			2668		nC



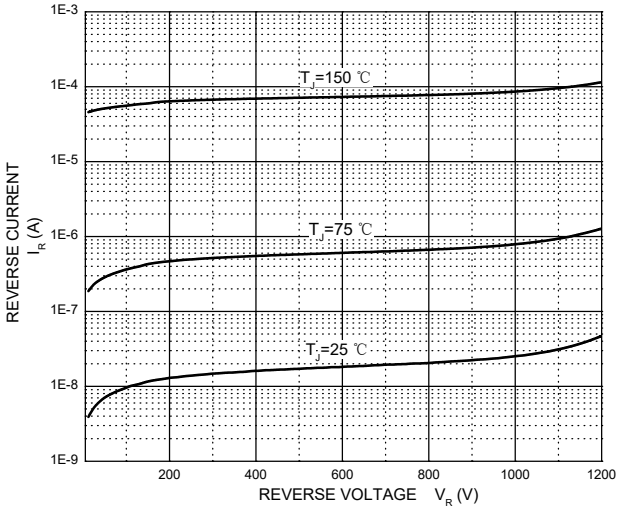
Reverse Recovery Waveform and Definitions

Typical Characteristics

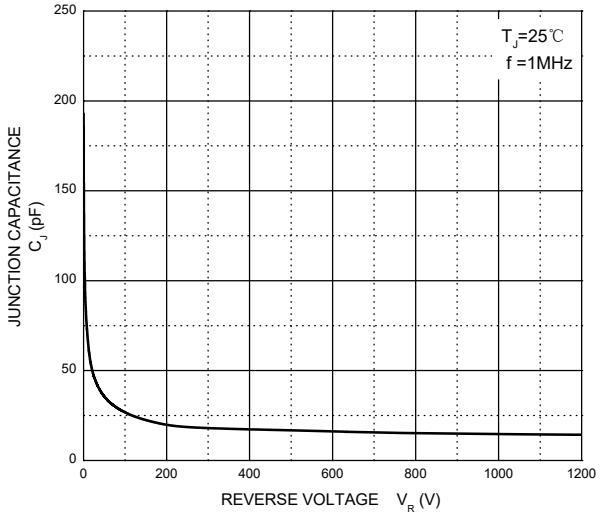
Forward Characteristics



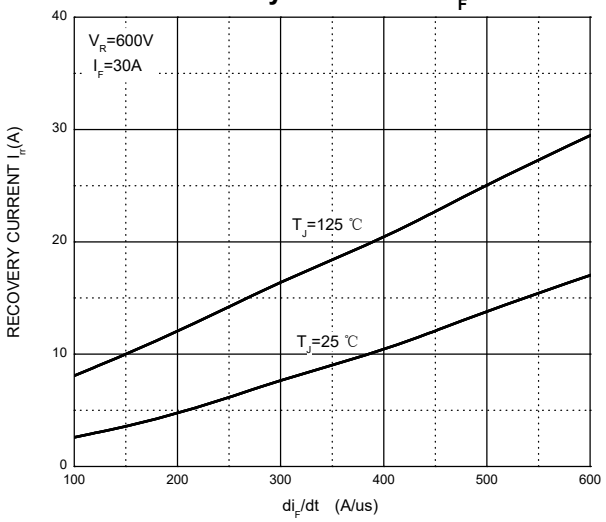
Reverse Characteristics



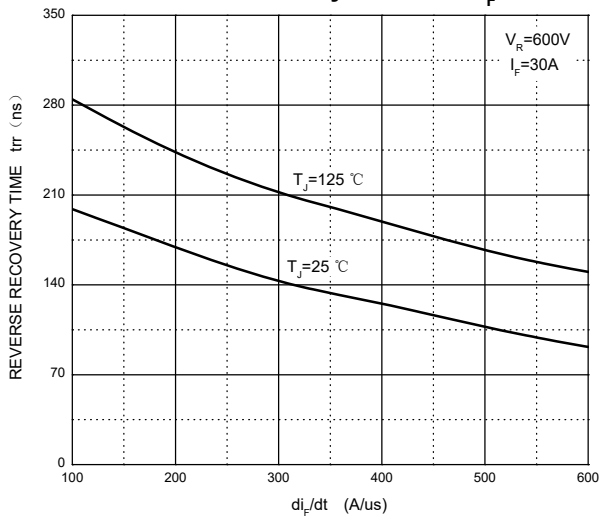
Capacitance Characteristics



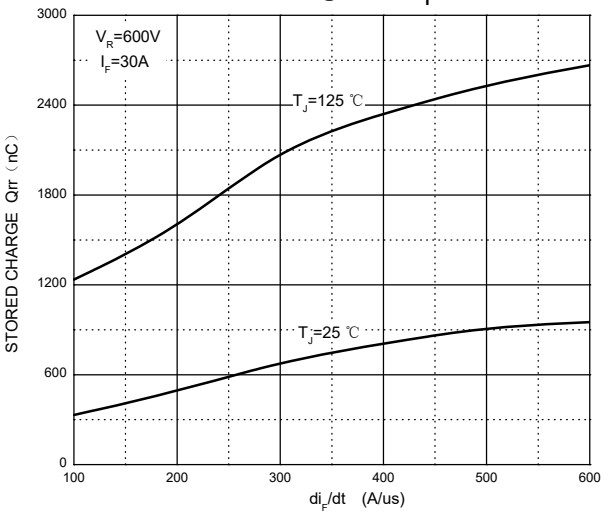
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

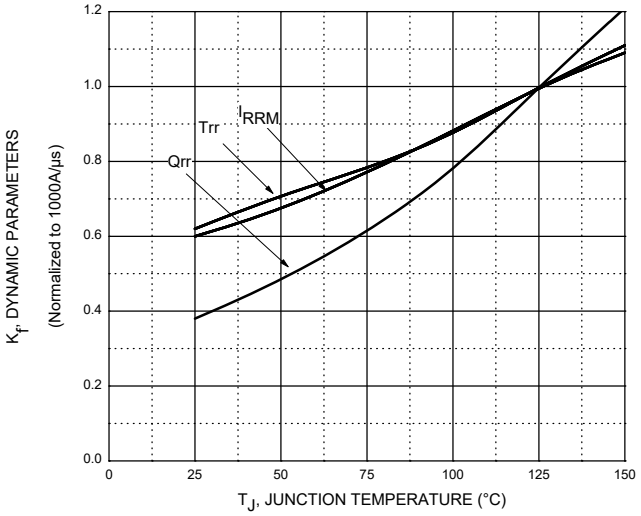


Stored Charge vs. di_F/dt

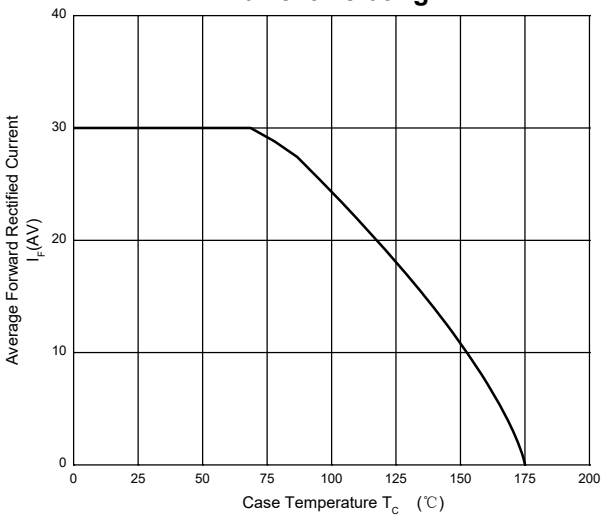


Typical Characteristics

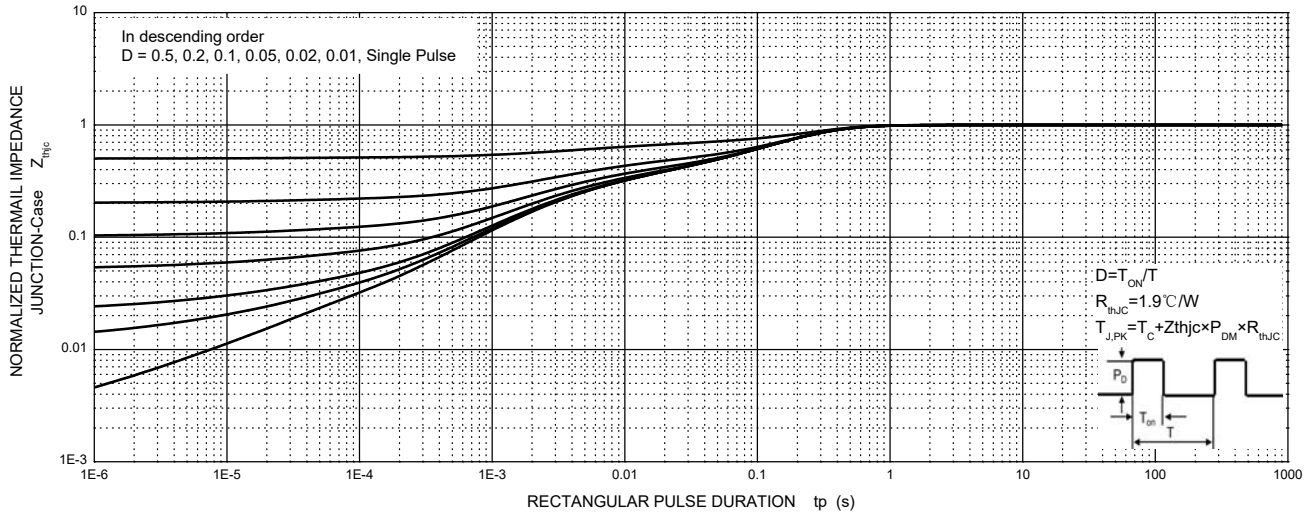
Dynamic Parameters vs. Junction Temperature



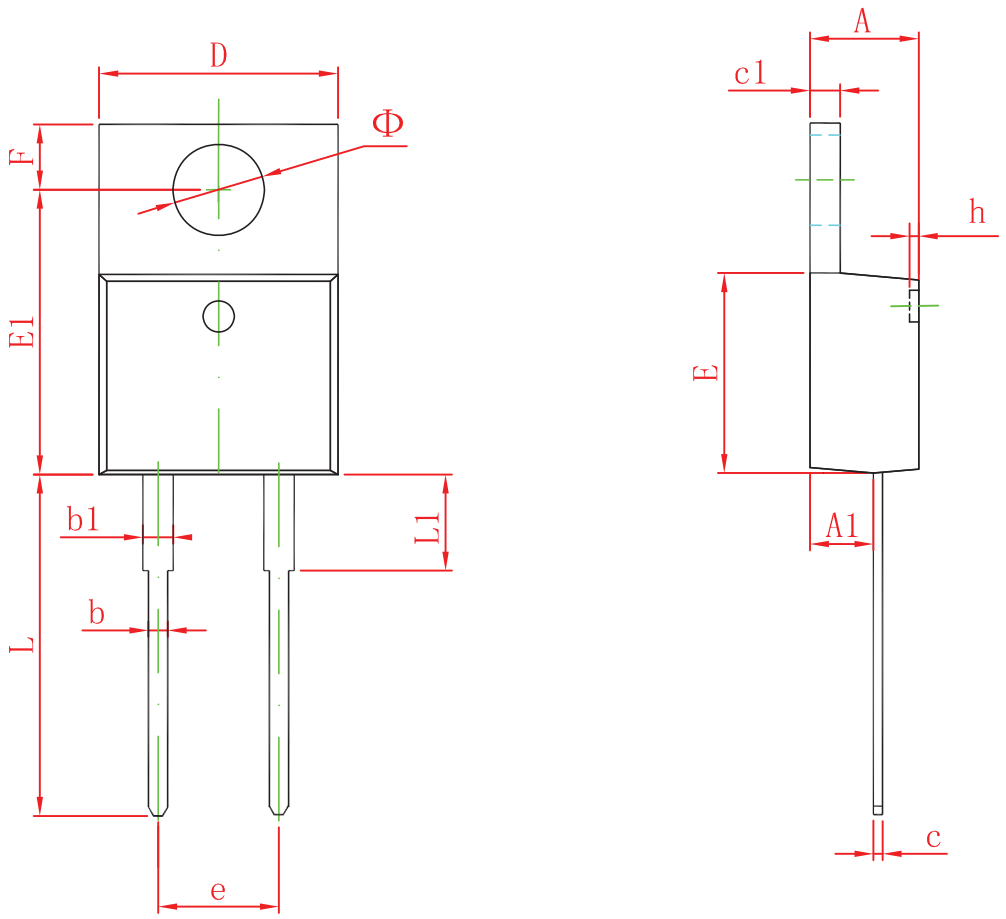
Current Derating



MUR30H120 Transient Thermal Impedance, Junction-Case



TO-220-2L 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	5.080 TYP		0.200 TYP	
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