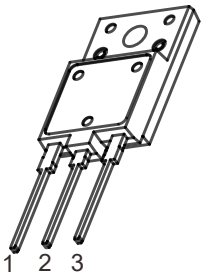
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

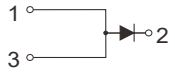
TO-3PF Plastic-Encapsulate Diode

MURPF30H60A HYPERFAST RECTIFIER,FRED

TO-3PF



1. ANODE
2. CATHODE
3. ANODE



MAIN CHARACTERISTICS

I_O	30A
V_{RRM}	600V
T_{rr}	20ns
T_j	175℃
$V_{F(typ)}$	1.5V(@T_j=150℃)

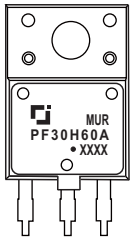
FEATURES

- 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



MURPF30H60A = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_C=25℃unless otherwise noted)

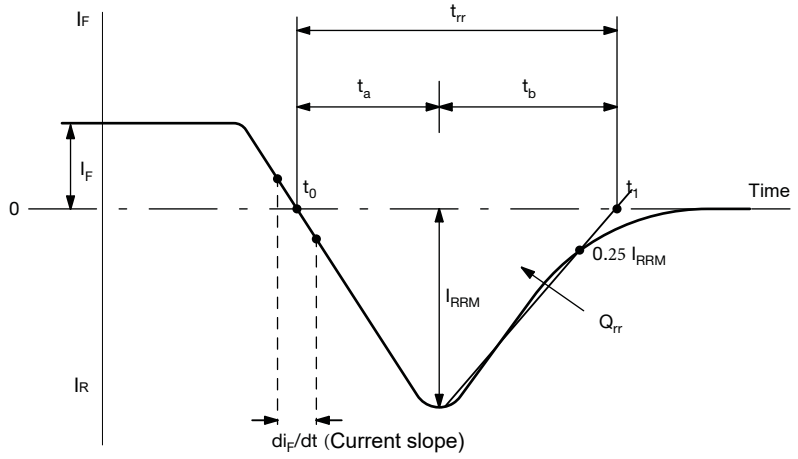
Symbol	Parameter	MURPF30H60A	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current(T_C=110℃)	30	A
$I_{F(RMS)}$	RMS Forward Current(T_C=110℃)	21	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	200	A
P_D	Power dissipation	167	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case@ Per leg	0.9	℃/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℃			1	μA
			T_j=150℃			500	μA
V_F	Forward Voltage	IF=30A	T_j=25℃		2.3	2.6	V
			T_j=150℃		1.5		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			50		pF
trr	Reverse Recovery time	IF=0.5A, IR=1A,Irr=0.25A			25		ns
		IF=1A,VR=30V, di_F/dt =200A/us			20		ns

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

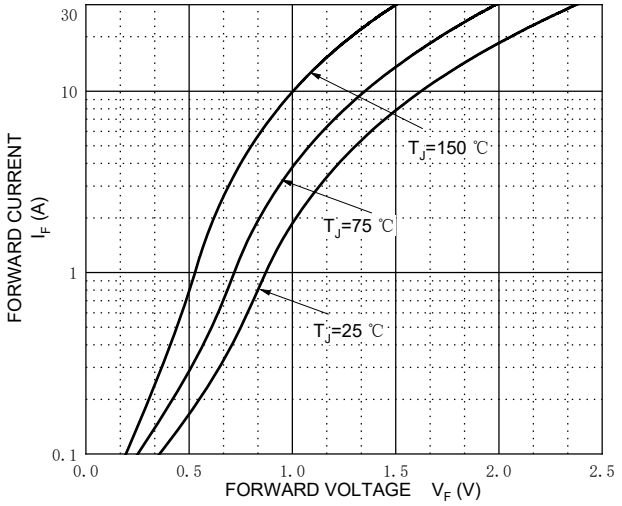
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=200A/μs		28		ns
I_{RRM}	Max. Reverse Recovery Current			2		A
Qrr	Reverse Recovery Charge			28		nC
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=200A/μs, T_j=125℃		70		ns
I_{RRM}	Max. Reverse Recovery Current			6		A
Qrr	Reverse Recovery Charge			230		nC
trr	Reverse Recovery Time	IF=30A, VR=400V, di_F/dt=600A/μs, T_j=125℃		43		ns
I_{RRM}	Max. Reverse Recovery Current			18		A
Qrr	Reverse Recovery Charge			415		nC



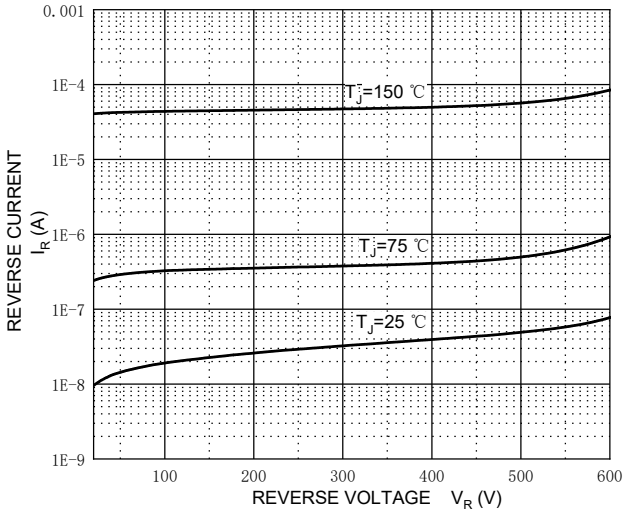
Reverse Recovery Waveform and Definitions

Typical Characteristics

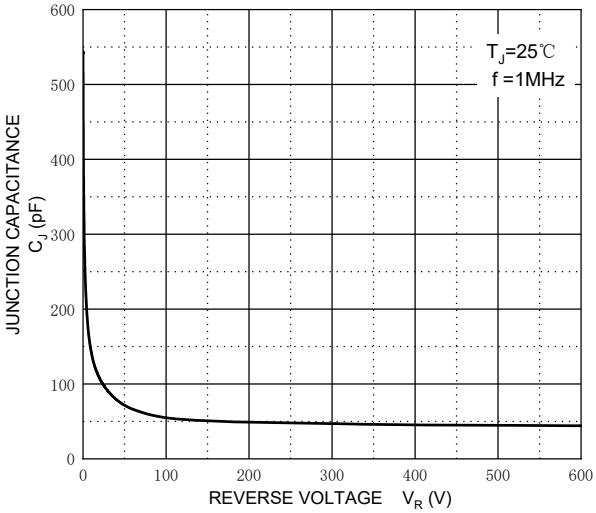
Forward Characteristics



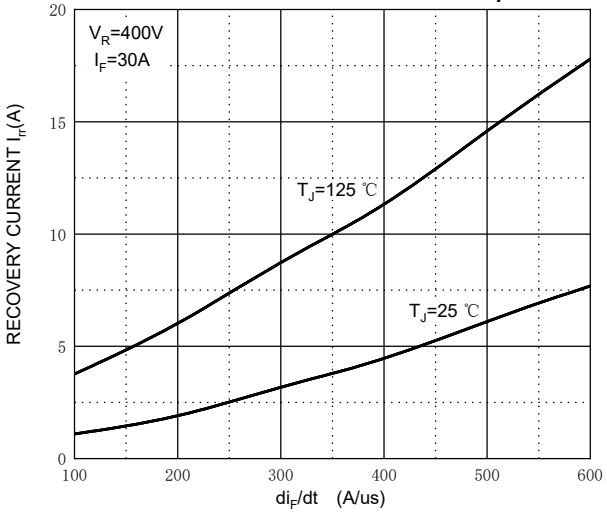
Reverse Characteristics



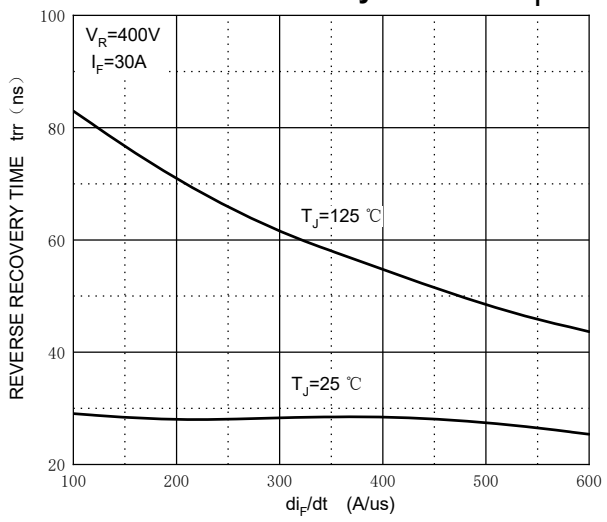
Capacitance Characteristics Per Diode



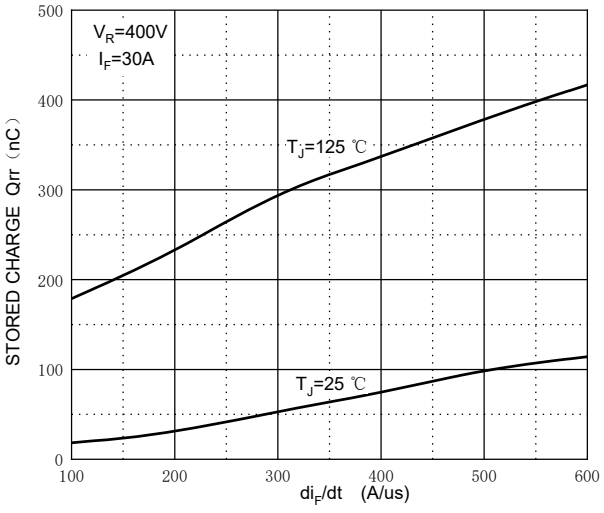
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

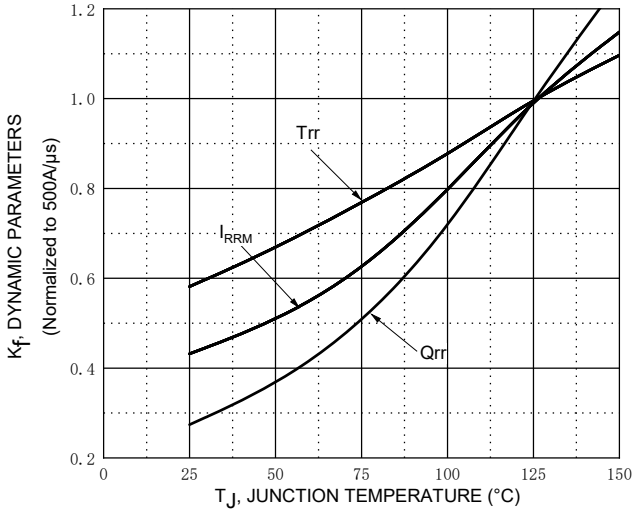


Stored Charge vs. di_F/dt

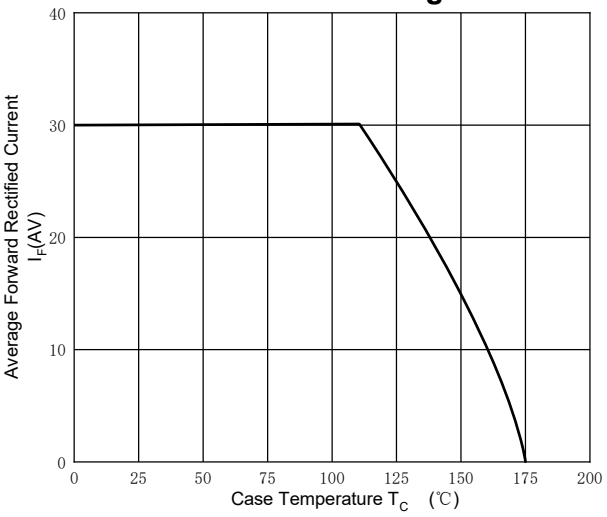


Typical Characteristics

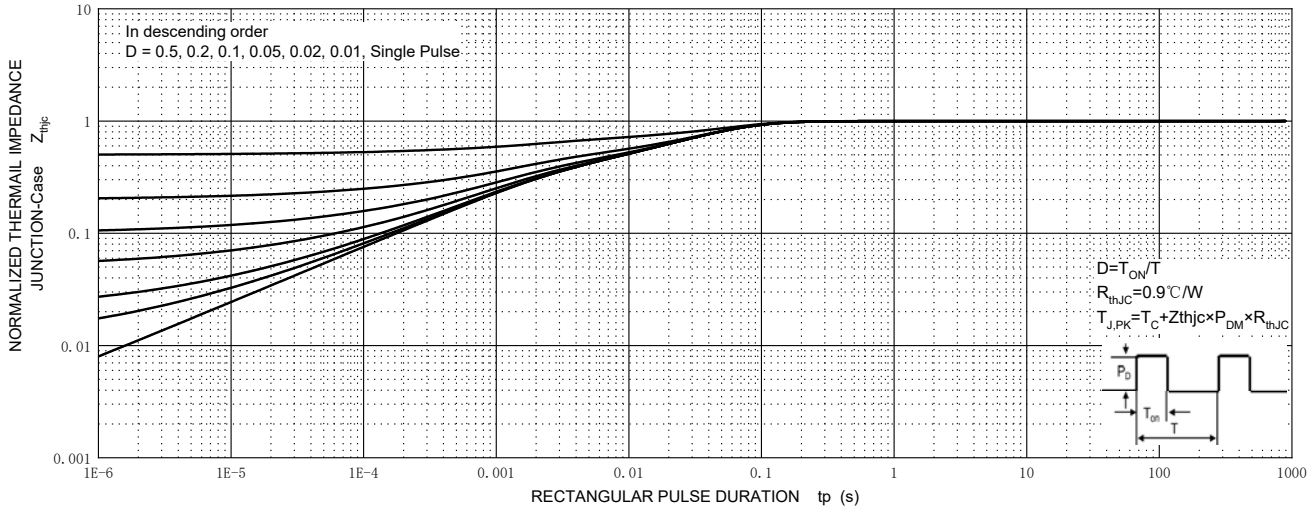
Dynamic Parameters vs. Junction Temperature



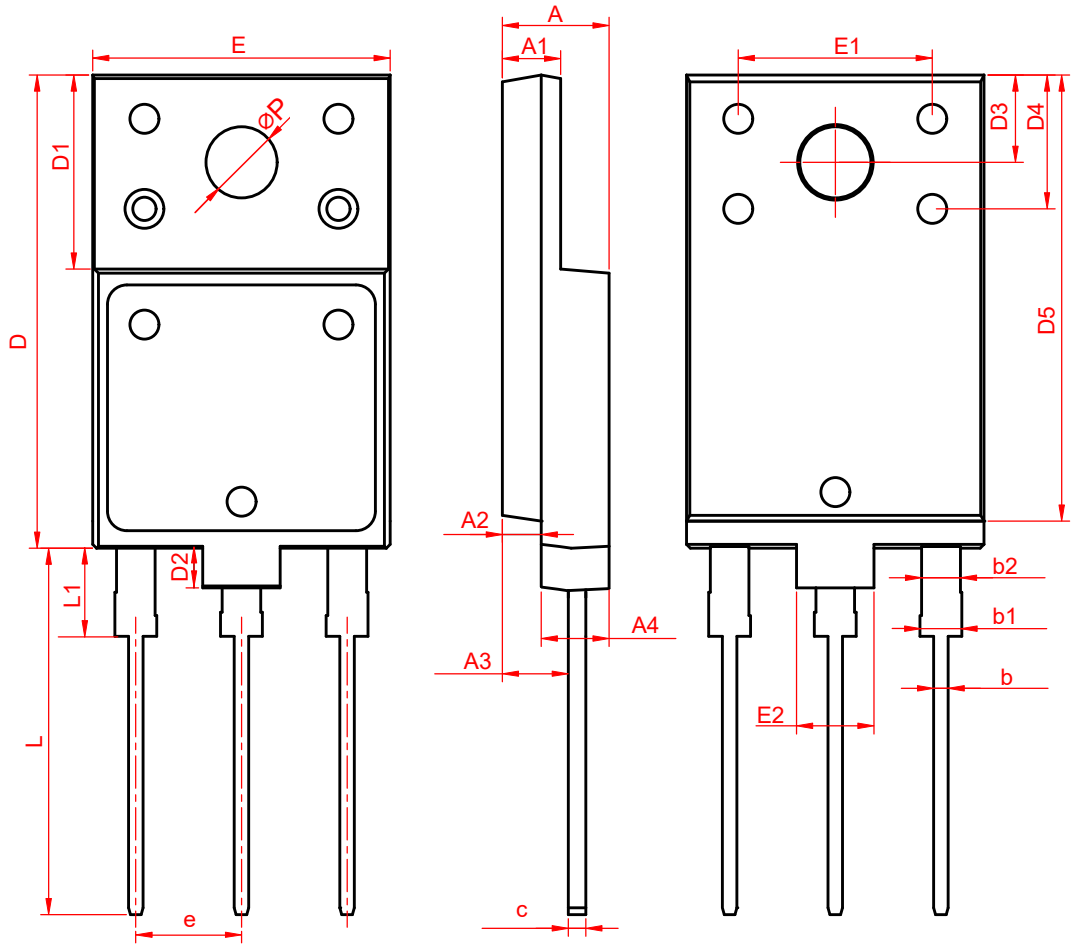
Current Derating



MURPF30H60A Transient Thermal Impedance, Junction-Case



TO-3PF Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	5.30	5.70	0.209	0.224
A1	2.80	3.20	0.110	0.126
A2	1.85	2.15	0.073	0.085
A3	3.30	3.50	0.130	0.138
A4	3.35	3.65	0.132	0.144
b	0.68	0.83	0.027	0.033
b1	2.06	2.26	0.081	0.089
b2	1.92	2.08	0.076	0.082
c	0.82	0.98	0.032	0.039
D	24.20	24.60	0.953	0.969
D1	9.80	10.20	0.386	0.402
D2	1.85	2.25	0.073	0.089
D3	4.35	4.65	0.171	0.183
D4	6.70	7.10	0.264	0.280
D5	22.75	23.25	0.896	0.915
e	5.45 BSC		0.215 BSC	
E	15.15	15.55	0.596	0.612
E1	9.75	10.25	0.384	0.404
E2	3.85	4.15	0.152	0.163
L	18.70	19.10	0.736	0.752
L1	4.40	4.70	0.173	0.185
ΦP	3.57	3.77	0.141	0.148