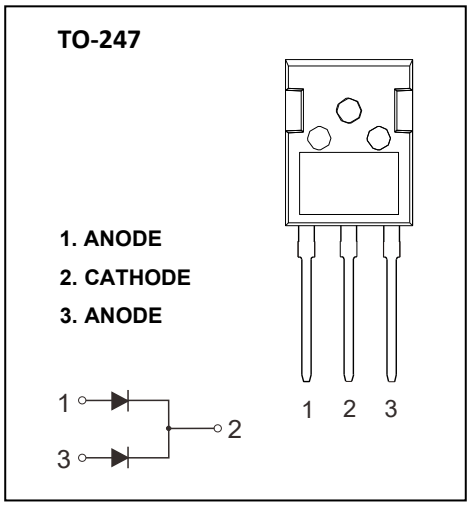
SZCJ Shenzhen Changji Semiconductor Co., LTD.

TO-247 Plastic-Encapsulate Diode

MURW30H40CTB HYPERFAST RECTIFIER,FRED

MAIN CHARACTERISTICS

I_O	30(15×2)A
V_{RRM}	400V
T_{rr}	24ns
T_j	175℃
$V_{F(typ)}$	0.9V(@T_j=150℃)



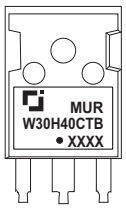
FEATURES

- 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



MURW30H40CTB = 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	MURW30H40CTB	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=167℃)	15	A
	Average rectified output current@ Total device(T_C=167℃)	30	
$I_{F(RMS)}$	RMS Forward Current(T_C=167℃)	21	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	270	A
P_D	Power dissipation	250	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case	0.6	℃/W
T_j	Operating Junction Temperature Range	-55 ~ +175	℃
T_{stg}	Storage Temperature Range	-55 ~ +175	℃

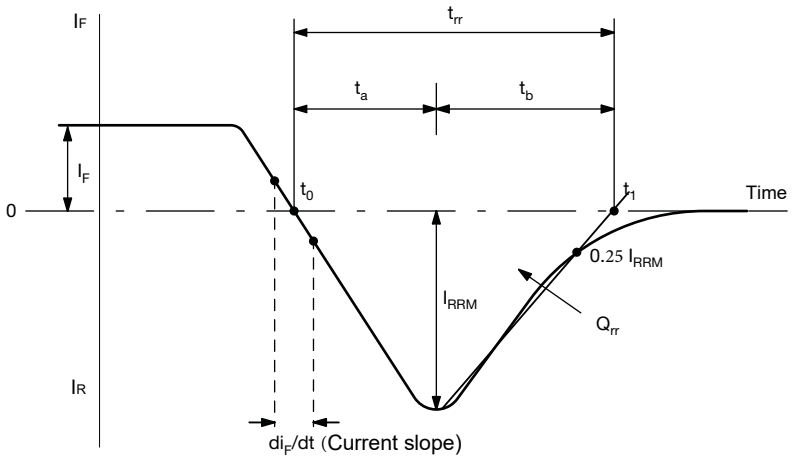
Typical Characteristics

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	IR=100uA		400			V
I_R	Reverse Current	VR=400V	T_j=25℃			1.0	μA
			T_j=150℃			500	μA
V_F	Forward Voltage	IF=15A	T_j=25℃		1.1	1.4	V
			T_j=150℃		0.9		V
C_{tot}	Total Capacitance	VR=200V, f=1MHz			31		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)

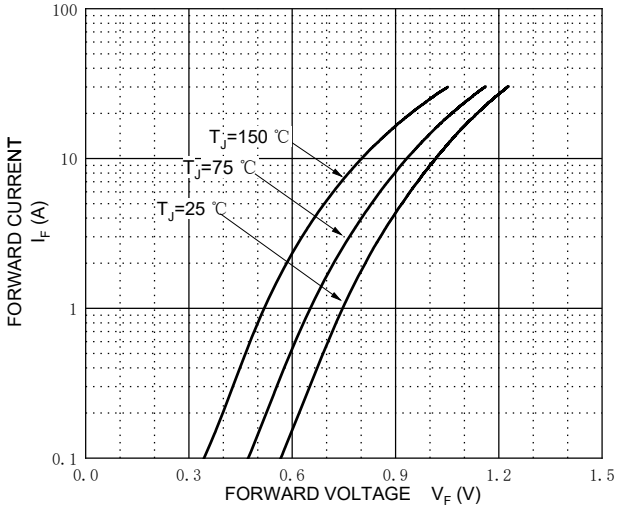
Symbol	Parameter	Test Comditions	Min.	Typ.	Max.	Unit
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=200A/μs		54		ns
I_{RRM}	Max. Reverse Recovery Current			5		A
Qrr	Reverse Recovery Charge			148		nC
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=200A/μs, T_j=125℃		88		ns
I_{RRM}	Max. Reverse Recovery Current			9		A
Qrr	Reverse Recovery Charge			440		nC
trr	Reverse Recovery Time	IF=15A, VR=200V, di_F/dt=600A/μs, T_j=125℃		50		ns
I_{RRM}	Max. Reverse Recovery Current			23		A
Qrr	Reverse Recovery Charge			612		nC



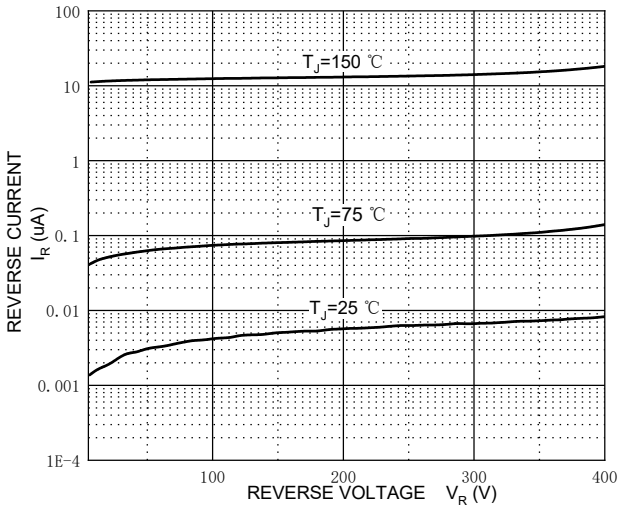
Reverse Recovery Waveform and Definitions

Typical Characteristics

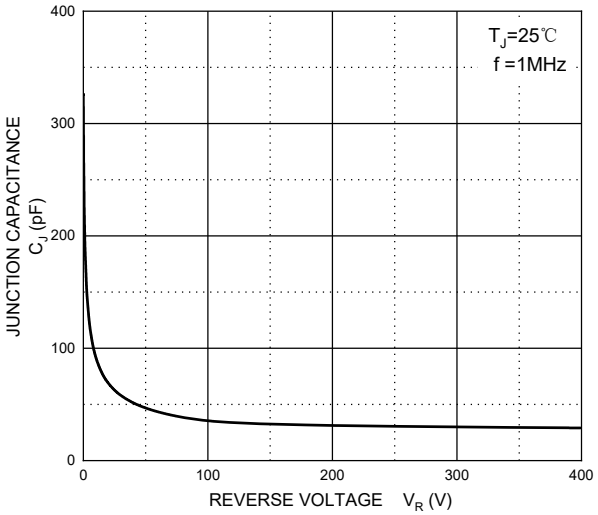
Forward Characteristics



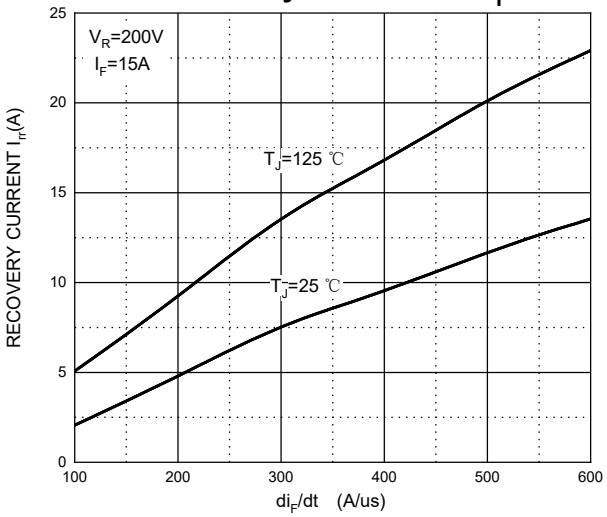
Reverse Characteristics



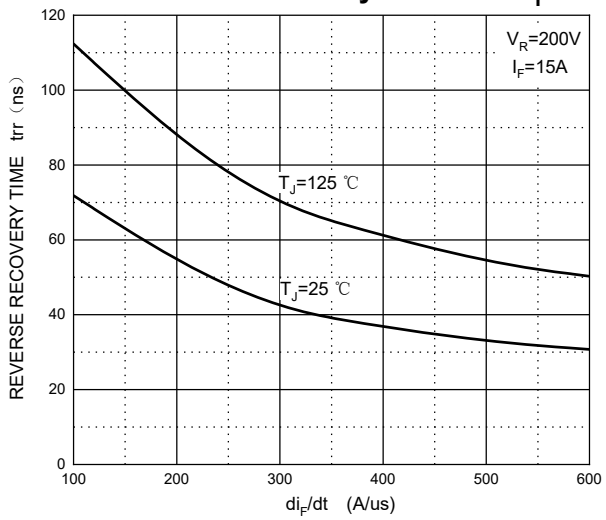
Capacitance Characteristics Per Diode



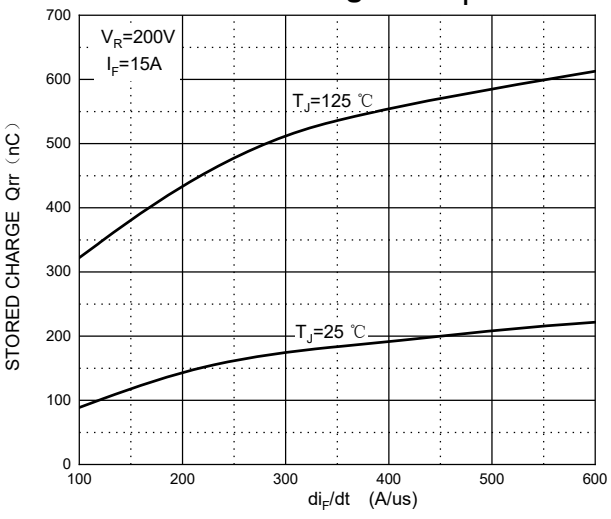
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

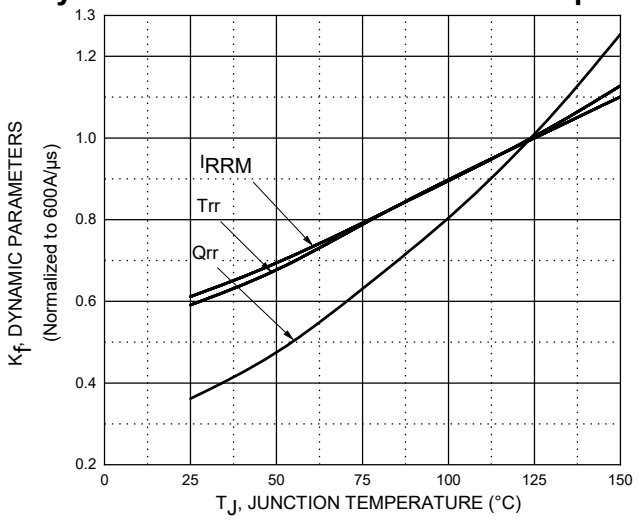


Stored Charge vs. di_F/dt

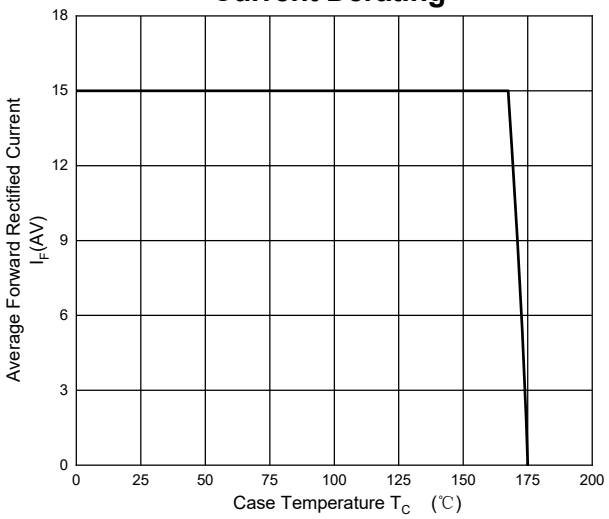


Typical Characteristics

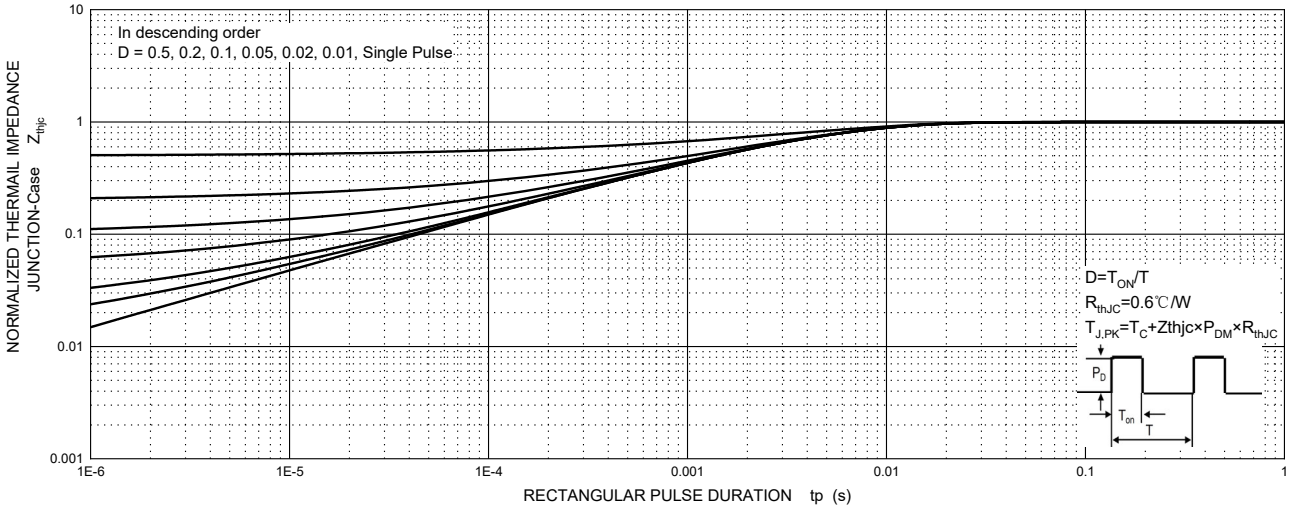
Dynamic Parameters vs. Junction Temperature



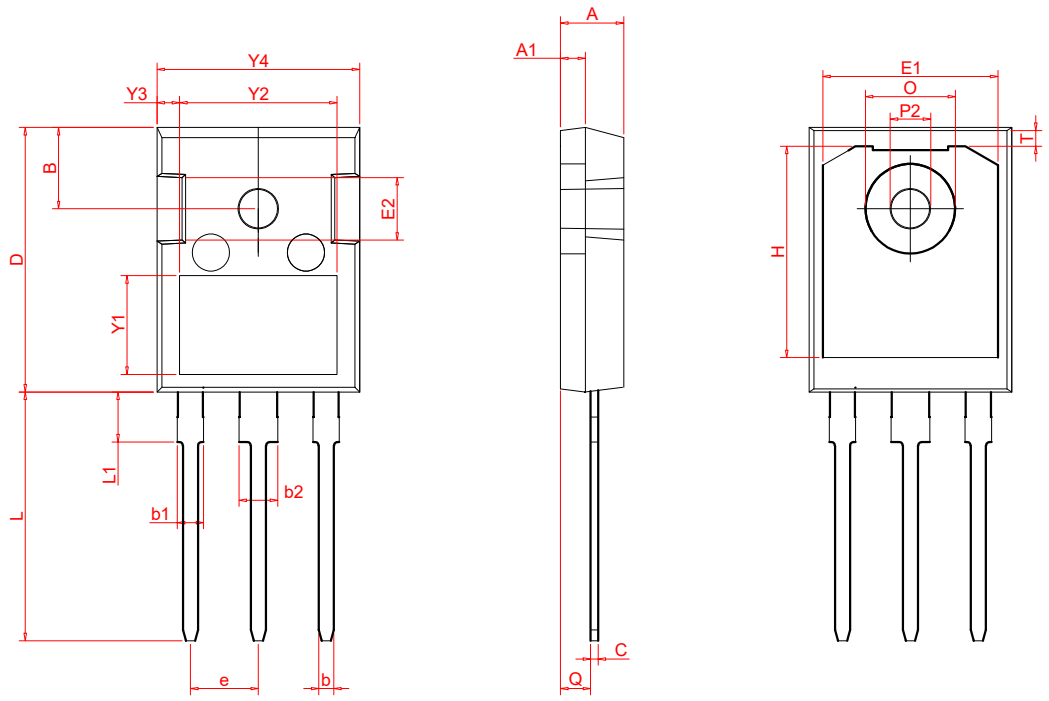
Current Derating



MURW30H40CTB Transient Thermal Impedance, Junction-Case



TO-247 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.700	5.300	0.185	0.209
A1	1.700	2.300	0.067	0.091
C	0.450	0.750	0.018	0.030
Q	2.200	2.600	0.087	0.102
O	7.100	7.400	0.280	0.291
P2	3.450	3.750	0.136	0.148
L	19.000	21.000	0.748	0.827
L1	4.2	4.5	0.165	0.177
b	1.000	1.400	0.039	0.055
b1	1.800	2.250	0.071	0.089
b2	3.000	3.300	0.118	0.130
e	5.250	5.550	0.207	0.219
D	20.950	21.350	0.825	0.841
Y1	7.600	8.100	0.299	0.319
Y2	11.000	13.000	0.433	0.512
Y3	1.750	2.250	0.069	0.089
Y4	16.000	16.400	0.630	0.646
E2	4.600	4.900	0.181	0.193
T	1.35REF		0.053REF	
H	16.25REF		0.639REF	
E1	14REF		0.551REF	
B	6.55REF		0.257REF	