

TO-263-2L Plastic-Encapsulate Diodes

HYPERFAST RECTIFIER,FRED

MAIN CHARACTERISTICS

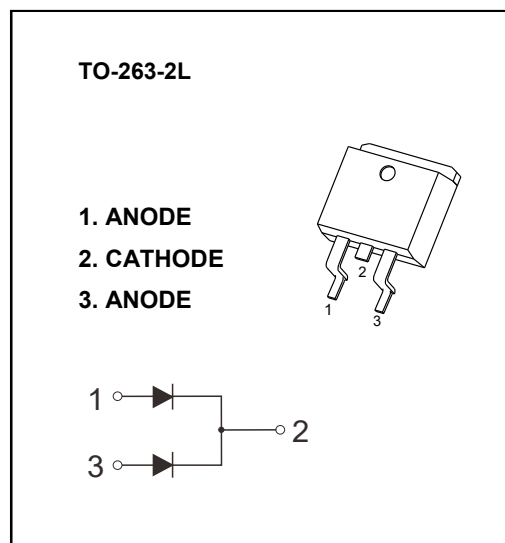
I_o	16(8×2)A
V_{RRM}	200V
T_{rr}	14ns
T_j	175℃
$V_{F(typ)}$	0.8V(@ $T_j=150℃$)

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.



MAXIMUM RATINGS ($T_c=25℃$ unless otherwise noted)

Symbol	Parameter	MURB16H20CT	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current@ Per leg($T_c=153℃$)	8	A
	Average rectified output current@ Total device($T_c=153℃$)	16	
$I_{F(RMS)}$	RMS Forward Current($T_c=153℃$)	11	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	130	A
P_D	Power dissipation	45	W
$R_{\theta JC}$	Thermal Resistance From Junction to Case@ Per leg	3.3	℃/W
T_j	Operating Junction Temperature Range	-55 ~ +175	℃
T_{stg}	Storage Temperature Range	-55 ~ +175	℃

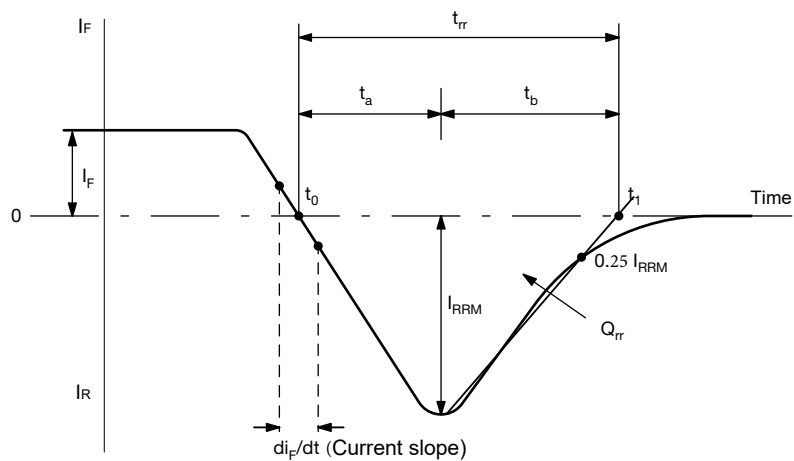
Typical Characteristics

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	$I_R=100\mu\text{A}$	200			V
I_R	Reverse Current	$V_R=200\text{V}$			1	μA
					250	μA
V_F	Forward Voltage	$I_F=8\text{A}$		0.9	1.1	V
				0.8		V
C_{tot}	Total Capacitance	$V_R=200\text{V}, f=1\text{MHz}$		80		pF
t_{rr}	Reverse Recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$		16		ns
		$I_F=1\text{A}, V_R=30\text{V}, di_F/dt = 200\text{A}/\mu\text{s}$		14		ns

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless otherwise specified)

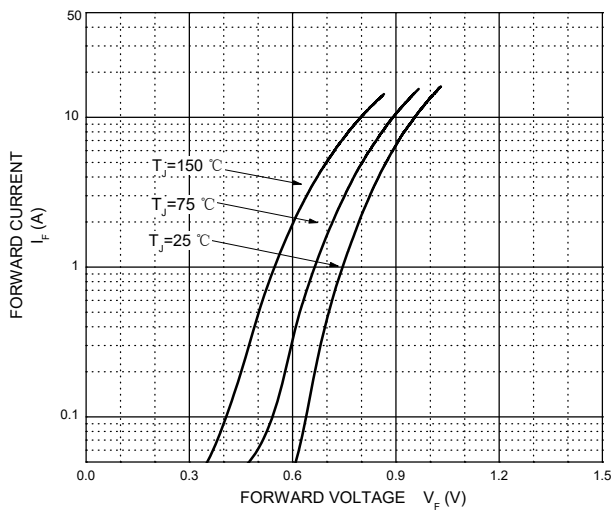
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=100\text{V}, di_F/dt=200\text{A}/\mu\text{s}$		17		ns
I_{RRM}	Max. Reverse Recovery Current			3.5		A
Q_{rr}	Reverse Recovery Charge			31		nC
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=100\text{V}, di_F/dt=200\text{A}/\mu\text{s}, T_J=125^\circ\text{C}$		32		ns
I_{RRM}	Max. Reverse Recovery Current			6		A
Q_{rr}	Reverse Recovery Charge			97		nC
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=100\text{V}, di_F/dt=500\text{A}/\mu\text{s}, T_J=125^\circ\text{C}$		27		ns
I_{RRM}	Max. Reverse Recovery Current			13		A
Q_{rr}	Reverse Recovery Charge			173		nC



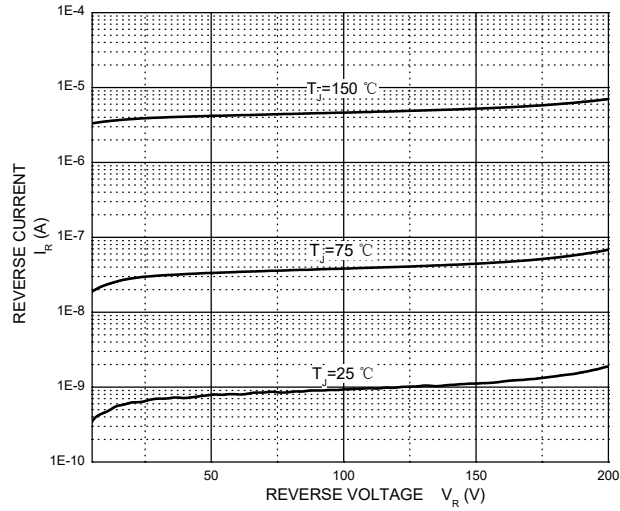
Reverse Recovery Waveform and Definitions

Typical Characteristics

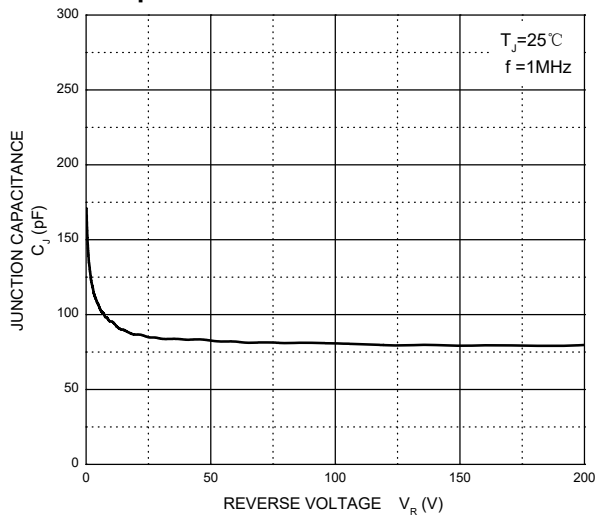
Forward Characteristics



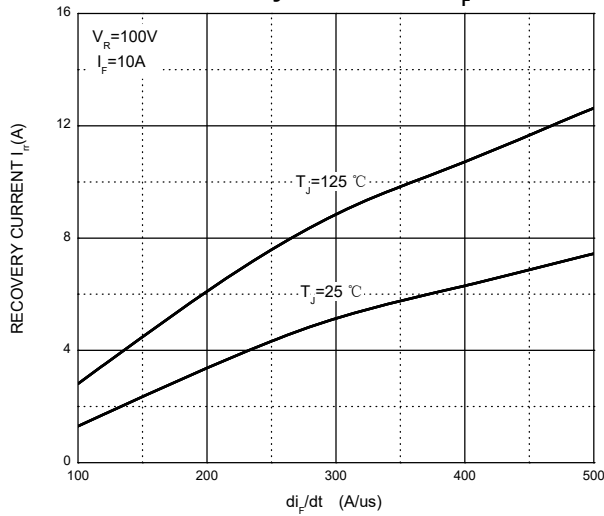
Reverse Characteristics



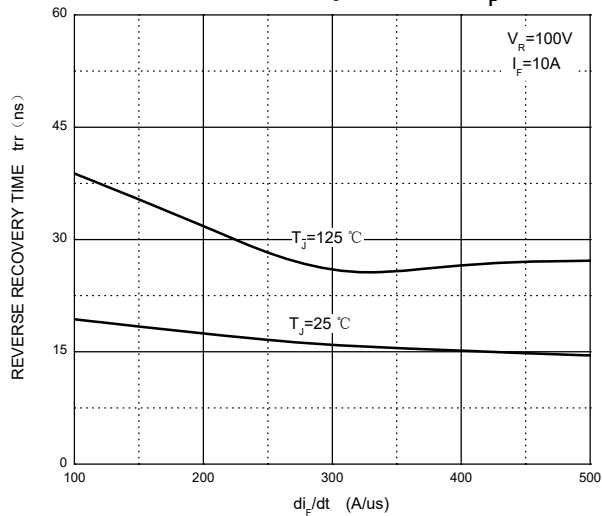
Capacitance Characteristics Per Diode



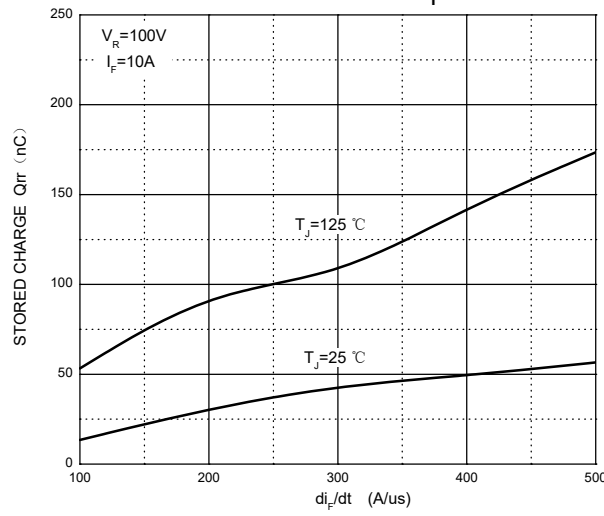
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

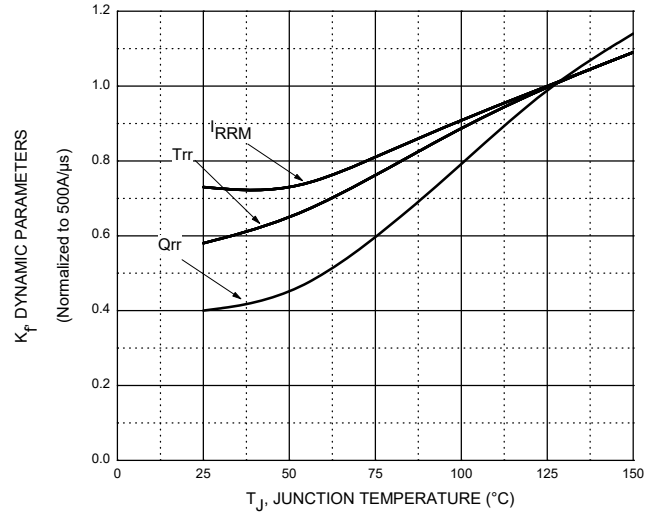


Stored Charge vs. di_F/dt

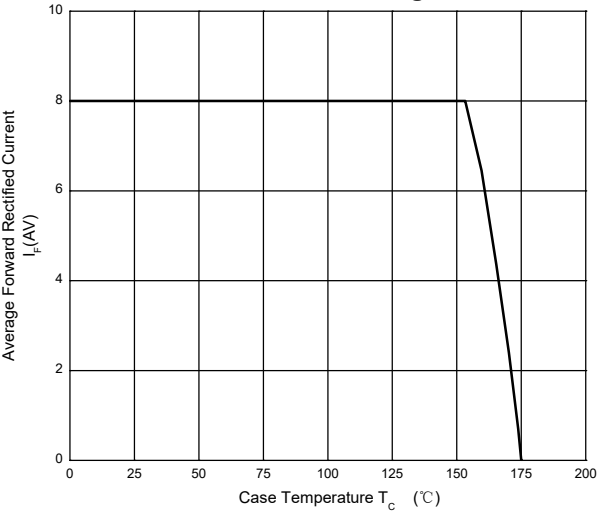


Typical Characteristics

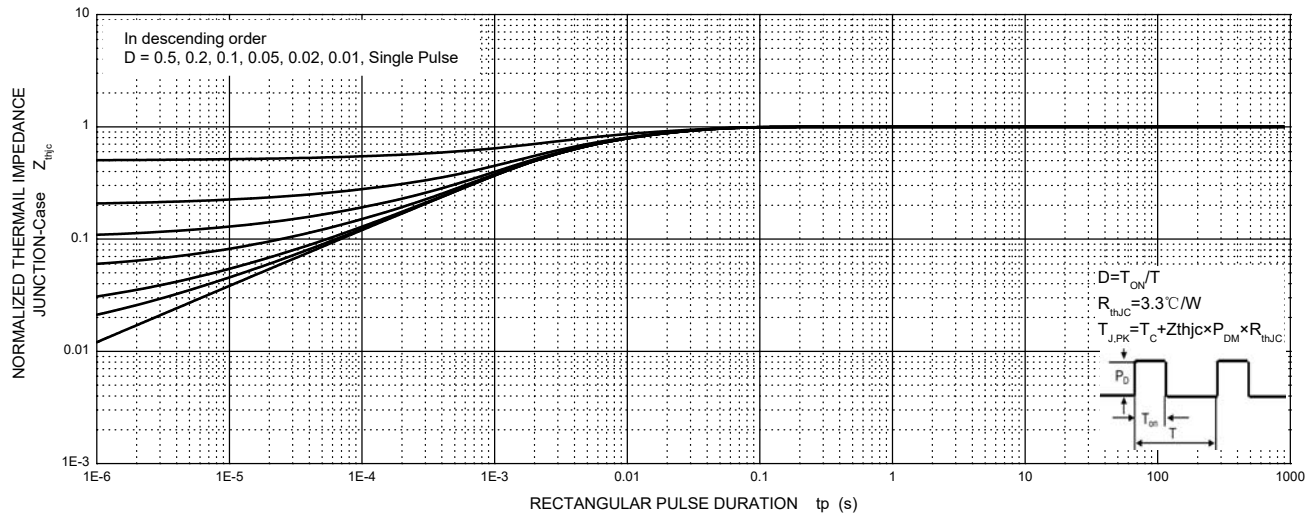
Dynamic Parameters vs. Junction Temperature



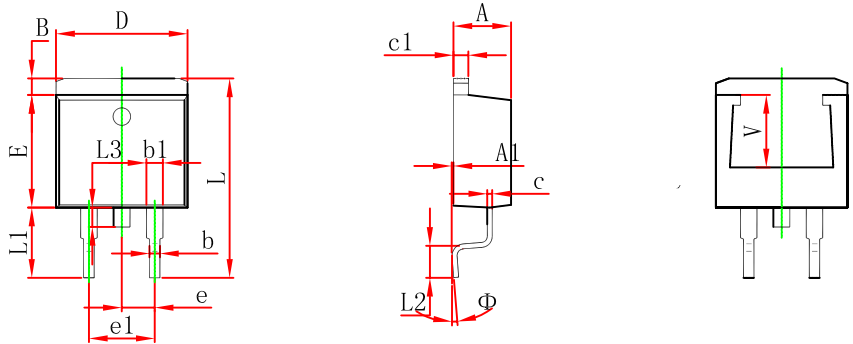
Current Derating



MURB16H20CT Transient Thermal Impedance, Junction-Case

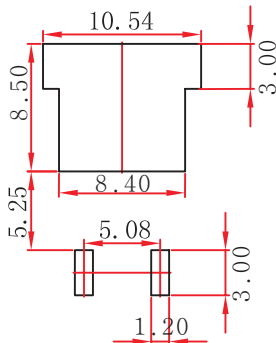


TO-263-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0° 8°		0° 8°	
V	5.600 REF.		0.220REF.	

TO-263-2L Suggested Pad Layout



- Note:
- 1.Controlling dimension:in millimeters.
 - 2.General tolerance:±0.05mm.
 - 3.The pad layout is for reference purposes only.

Ordering Information

Part Number	Package	Shipping Quantity
MURB16H20CT	TO-263-2L	800/tape&Reel

Marking Diagram

