

TO-220-3L Plastic-Encapsulate Diode

MUR16H60CT HYPERFAST RECTIFIER, FRED

MAIN CHARACTERISTICS

I_o	16(8×2)A
V_{RRM}	600V
T_{rr}	23ns
T_j	175°C
$V_{F(typ)}$	1.0V(@$T_j=150°C$)

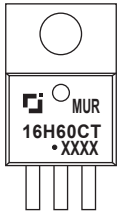
FEATURES

- Ultrafast Recovery Times and Low Recovery Loss
- Low Forward Voltage
- Low Reverse Leakage Current

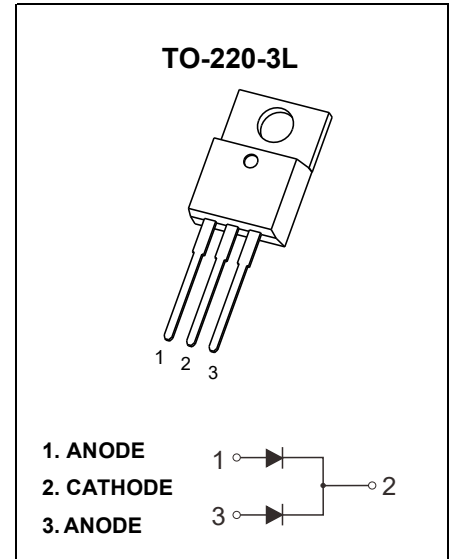
APPLICATIONS

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



MUR16H60CT = Device code
 Solid dot = Green molding compound device
 if none, the normal device
 XXXX = Code



MAXIMUM RATINGS ($T_c=25°C$ unless otherwise noted)

Symbol	Parameter	MUR16H60CT	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	600	V
V_R	DC Blocking Voltage		
$I_{F(AV)}$	Average rectified output current@ Per leg($T_c=147°C$)	8	A
	Average rectified output current@ Total device($T_c=147°C$)	16	
$I_{F(RMS)}$	RMS Forward Current($T_c=147°C$)	11	A
I_{FSM}	Non-Repetitive Surge Forward Current (8.3ms)	120	A
P_D	Power dissipation	43	W
$R_{\theta JC}$	Thermal Resistance From Junction to Case	3.5	°C/W
T_j	Operating Junction Temperature Range	-55 ~ +175	°C
T_{stg}	Storage Temperature Range	-55 ~ +175	°C

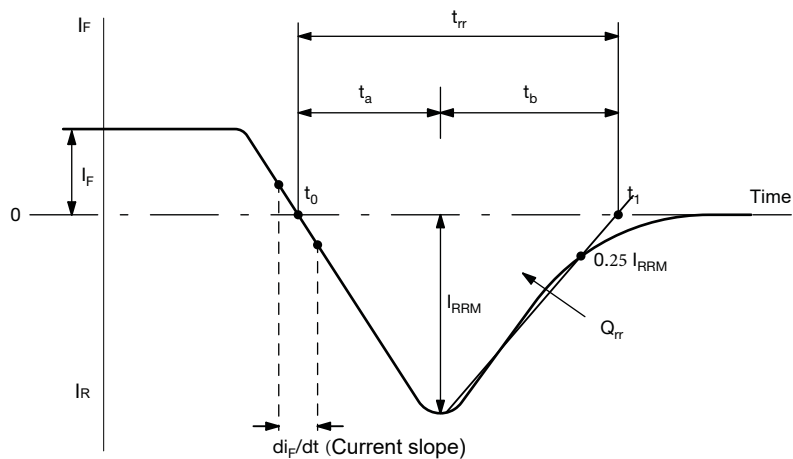
Typical Characteristics

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)}$	Reverse Voltage	$I_R=100\mu\text{A}$	600			V
I_R	Reverse Current	$V_R=600\text{V}$	$T_j=25^\circ\text{C}$		10	μA
			$T_j=150^\circ\text{C}$		500	μA
V_F	Forward Voltage	$I_F=8\text{A}$	$T_j=25^\circ\text{C}$	1.2	1.6	V
			$T_j=150^\circ\text{C}$	1.0		V
C_{tot}	Total Capacitance	$V_R=200\text{V}, f=1\text{MHz}$		6.8		pF
t_{rr}	Reverse Recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$		19		ns
		$I_F=1\text{A}, V_R=30\text{V}, di_F/dt = 200\text{A}/\mu\text{s}$		23		ns

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

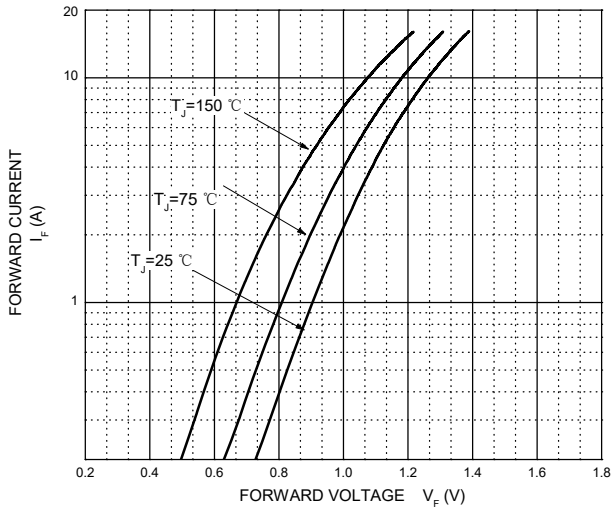
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=600\text{V}, di_F/dt=200\text{A}/\mu\text{s}$		86		ns
I_{RRM}	Max. Reverse Recovery Current			5.4		A
Q_{rr}	Reverse Recovery Charge			281		nC
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=600\text{V}, di_F/dt=200\text{A}/\mu\text{s}, T_j=125^\circ\text{C}$		117		ns
I_{RRM}	Max. Reverse Recovery Current			8.3		A
Q_{rr}	Reverse Recovery Charge			585		nC
t_{rr}	Reverse Recovery Time	$I_F=10\text{A}, V_R=600\text{V}, di_F/dt=500\text{A}/\mu\text{s}, T_j=125^\circ\text{C}$		76		ns
I_{RRM}	Max. Reverse Recovery Current			17		A
Q_{rr}	Reverse Recovery Charge			758		nC



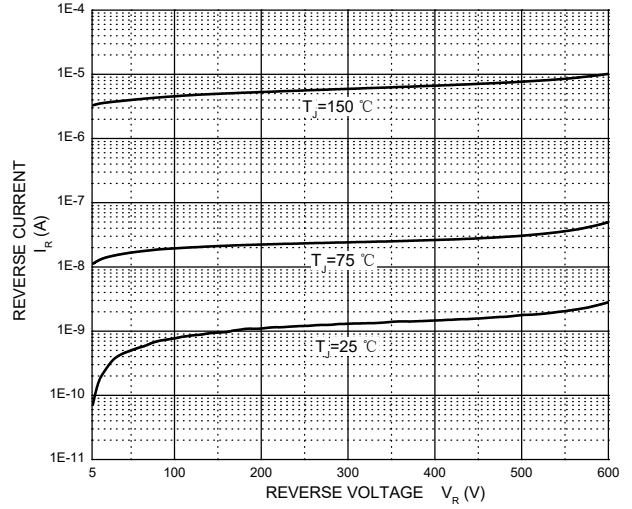
Reverse Recovery Waveform and Definitions

Typical Characteristics

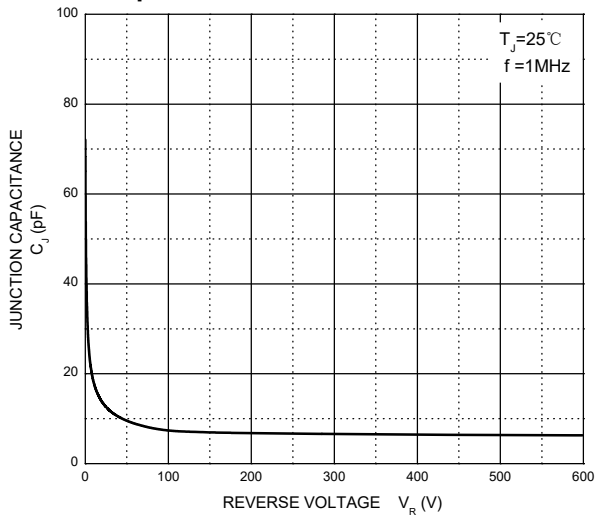
Forward Characteristics



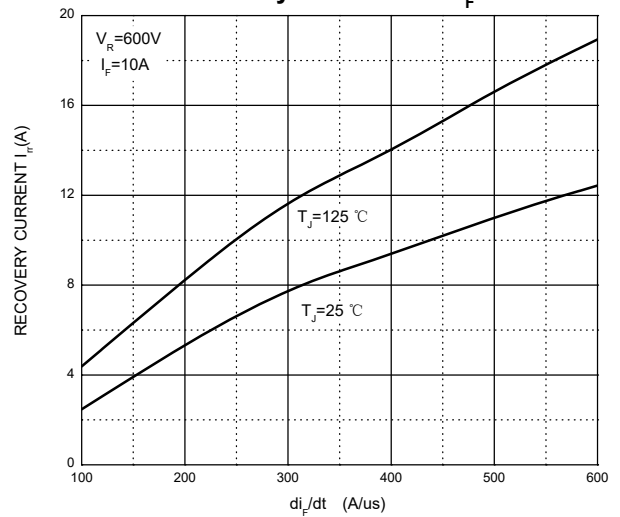
Reverse Characteristics



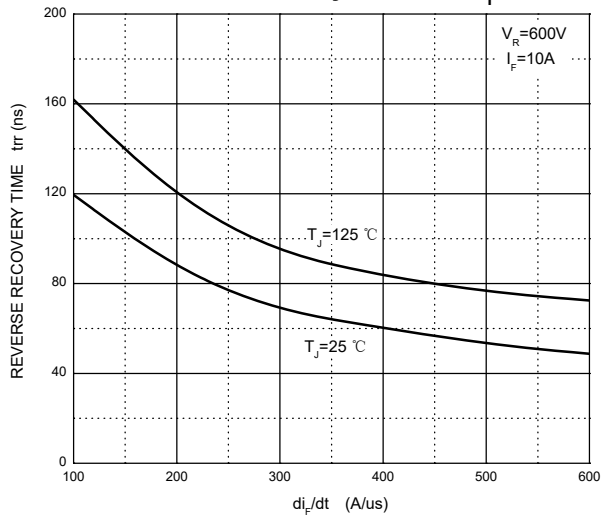
Capacitance Characteristics Per Diode



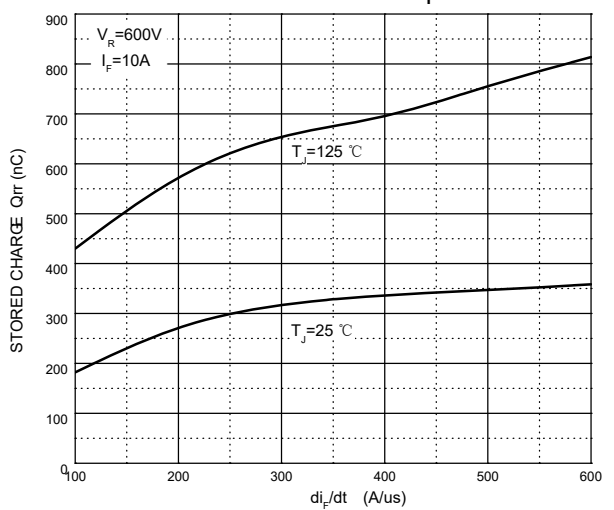
Recovery Current vs. di_F/dt



Reverse Recovery Time vs. di_F/dt

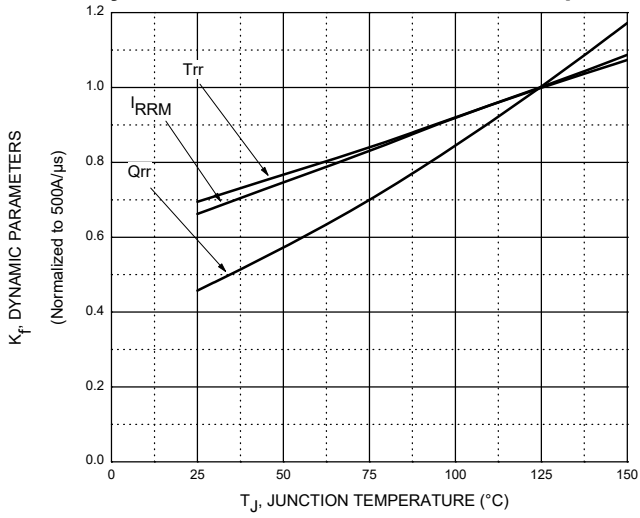


Stored Charge vs. di_F/dt

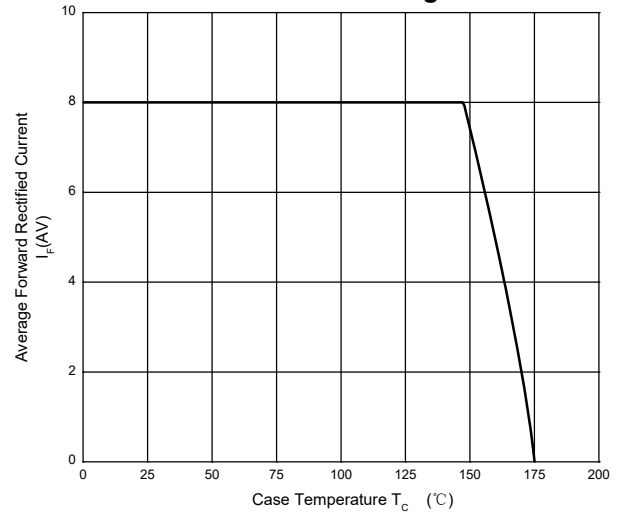


Typical Characteristics

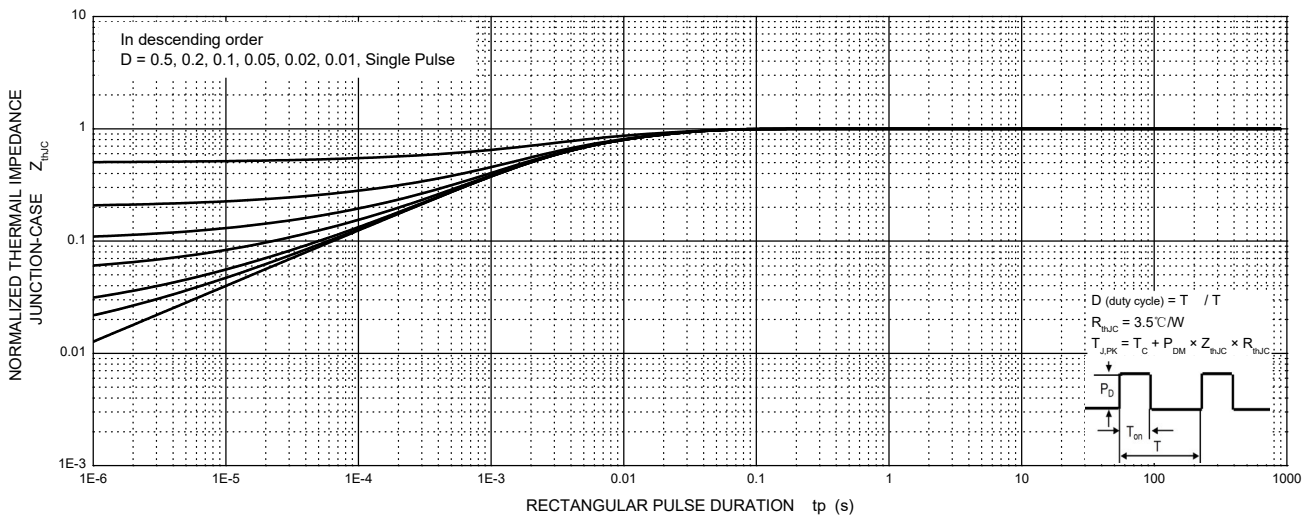
Dynamic Parameters vs. Junction Temperature



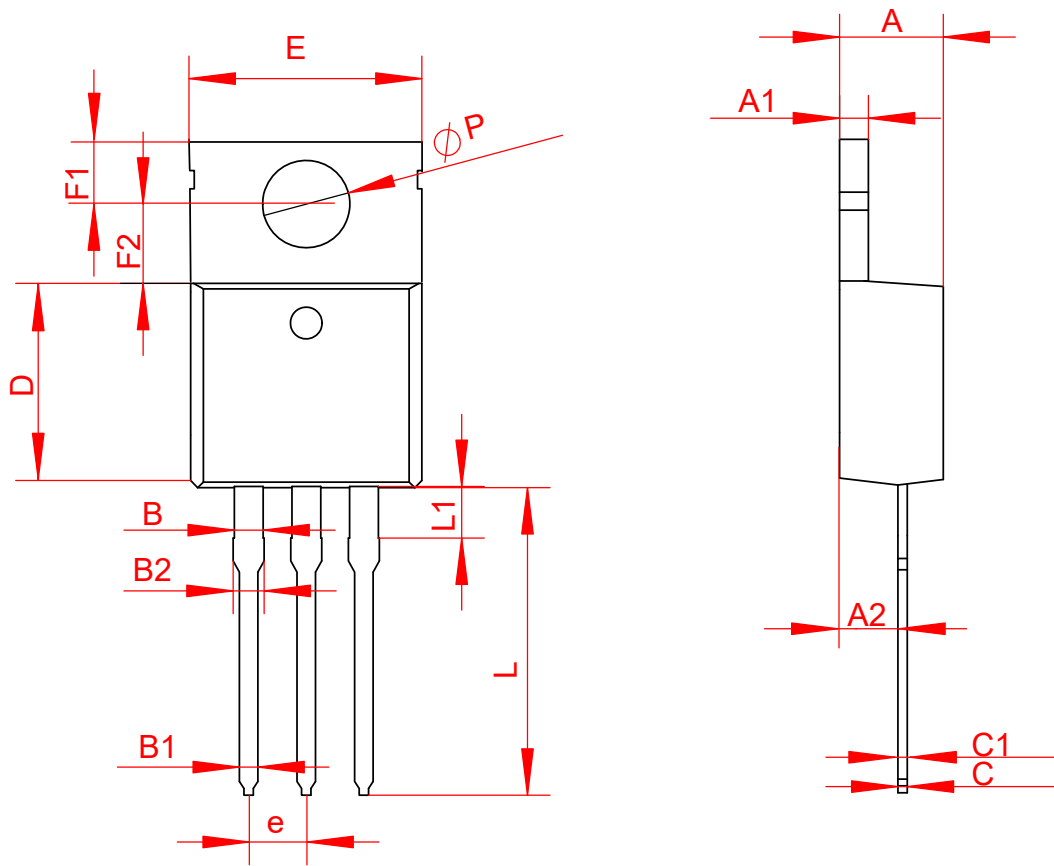
Current Derating



MUR16H60CT Transient Thermal Impedance, Junction-Case



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	1.220	1.320	0.048	0.052
A2	2.570	2.770	0.101	0.110
B	1.220	1.320	0.048	0.052
B1	0.710	0.910	0.028	0.036
B2	1.270	1.420	0.050	0.056
C	0.330	0.430	0.013	0.017
C1	0.420 TYP.		0.017 TYP.	
D	8.800	9.200	0.346	0.362
E	10.000	10.400	0.394	0.409
e	2.540 TYP.		0.100 TYP.	
F1	2.640	2.840	0.104	0.112
F2	3.400	3.600	0.134	0.142
L	13.360	13.760	0.526	0.542
L1	2.030	2.430	0.080	0.960
ΦP	3.750	3.950	0.148	0.156