

# TO-220-3L/TO-220F Plastic-Encapsulate Diodes

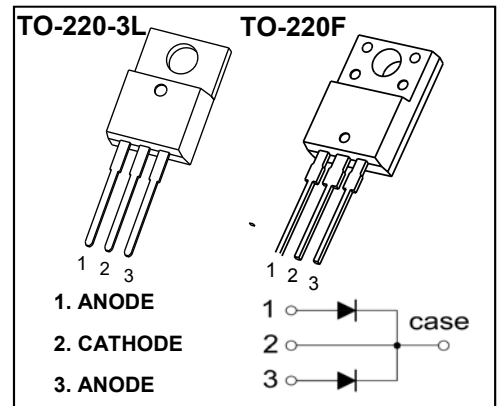
## MUR1040CT、MURF1040CT SUPER FAST RECOVER RECTIFIER

### FEATURES

- Ultrafast 35ns Recovery Times
- High Voltage Capability to 400V
- Low Reverse Leakage Current

### APPLICATIONS

- The state-of-the-art device are a series designed for use in switching power supplies, inverters and as free wheeling diodes.
- Use in the output rectification stage of SMPS, UPS, DC/DC converters as well as free wheeling diode in low voltage inverters and choppermotor drives.



### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted )

Symbol	Parameter	Value	Unit
$V_{RRM}$	Peak repetitive reverse voltage	400	V
$V_{RWM}$	Working peak reverse voltage		
$V_R$	DC blocking voltage		
$V_{R(RMS)}$	RMS reverse voltage	280	V
$I_o$	Average rectified output current@ Per leg	5	A
	Average rectified output current@ Total device	10	A
$I_{FSM}$	Non-Repetitive peak forward surge current 8.3ms half sine wave	70	A
$P_D$	Power dissipation	2	W
$R_{\theta JA}$	Thermal resistance from junction to ambient	50	$^{\circ}\text{C}/\text{W}$
$T_j$	Operating Junction Temperature Range	-55 ~ +150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse voltage	$V_{(BR)}$	$I_R=100\mu\text{A}$	400			V
Reverse current	$I_R$	$V_R=400\text{V}$			1	$\mu\text{A}$
Forward voltage	$V_F$	$I_F=5.0\text{A}$			1.4	V
Typical total capacitance	$C_{tot}$	$V_R=4.0\text{V}, f=1\text{MHz}$		45		pF
Reverse recovery time	$t_{rr}$	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$		24	35	ns

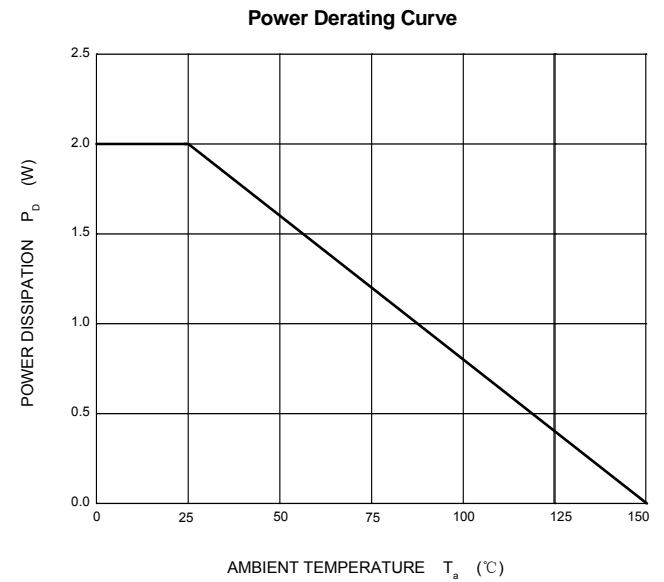
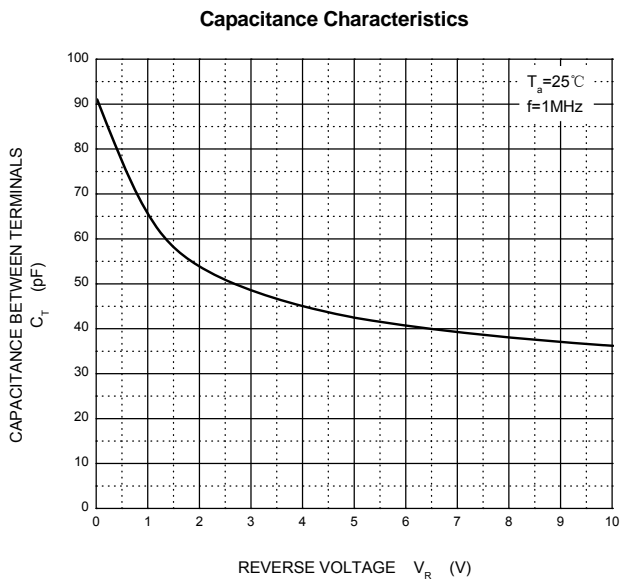
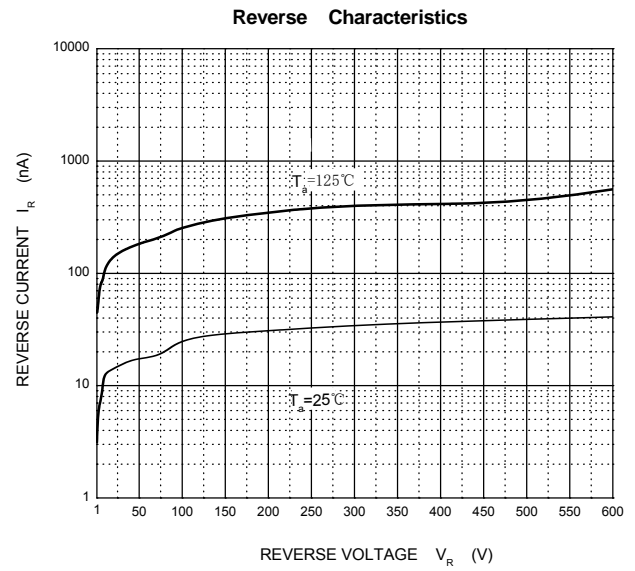
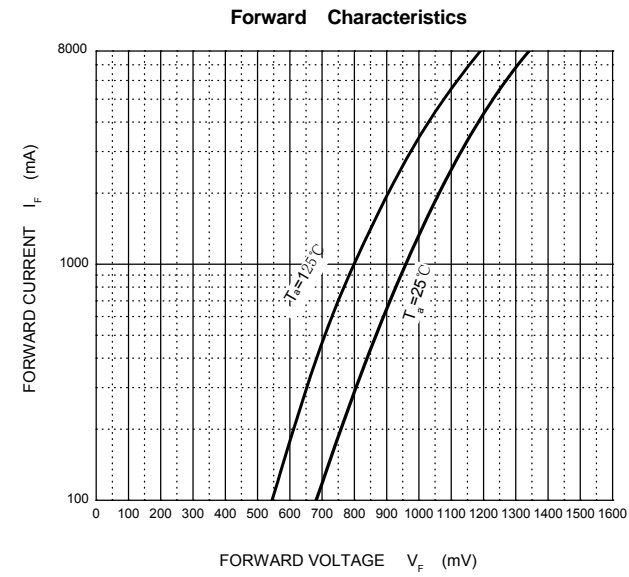
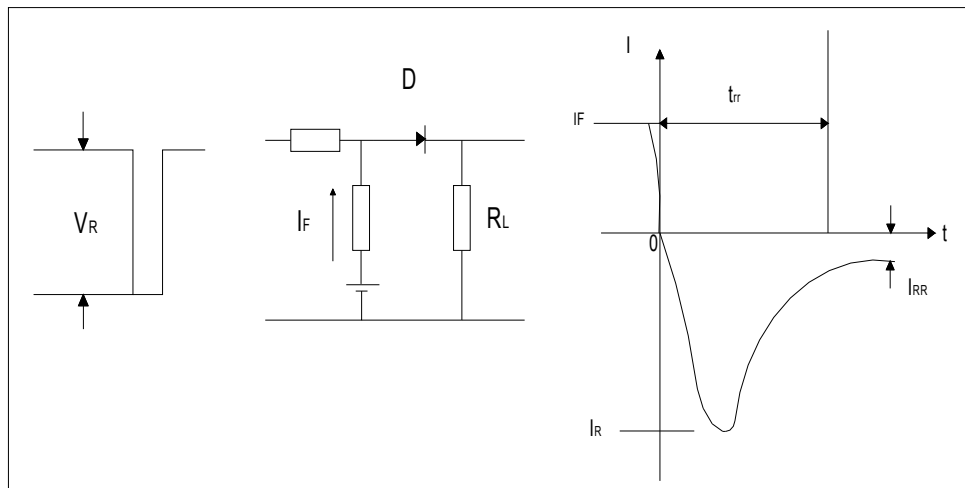
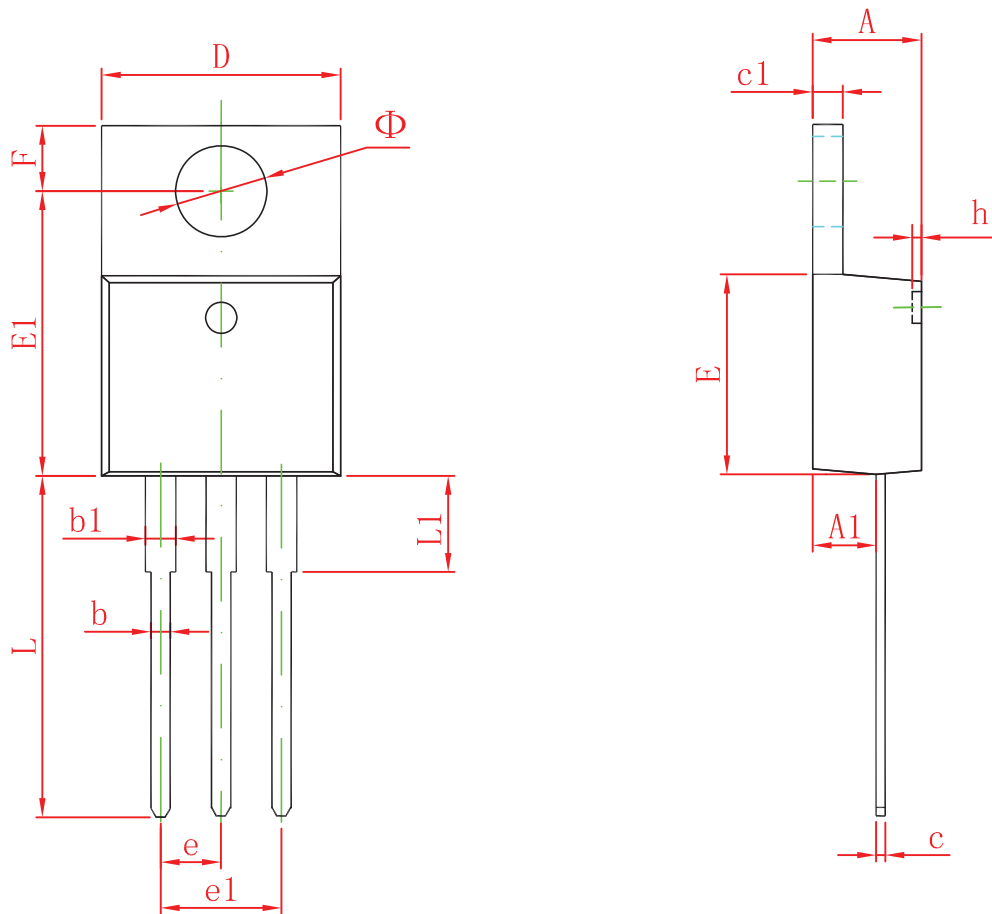


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

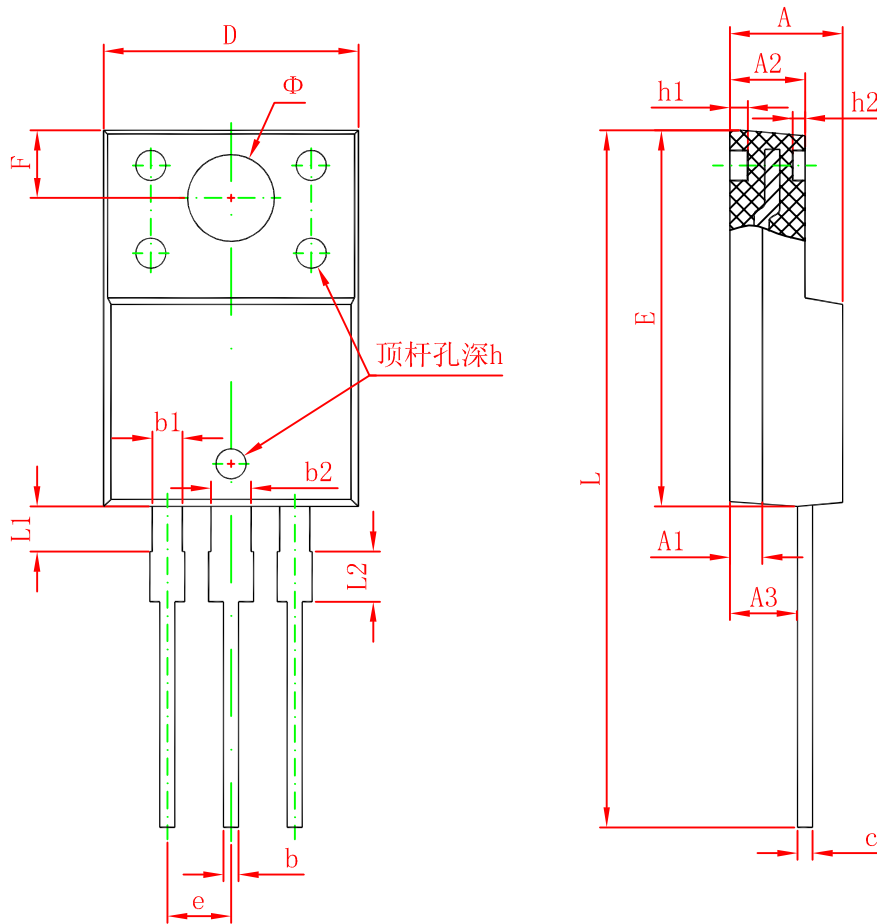


# TO-220-3L Package Outline Dimensions



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	2.540 TYP		0.100 TYP	
e1	4.900	5.200	0.192	0.205
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
$\Phi$	3.735	3.935	0.147	0.155

# TO-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	1.900	2.100	0.075	0.083