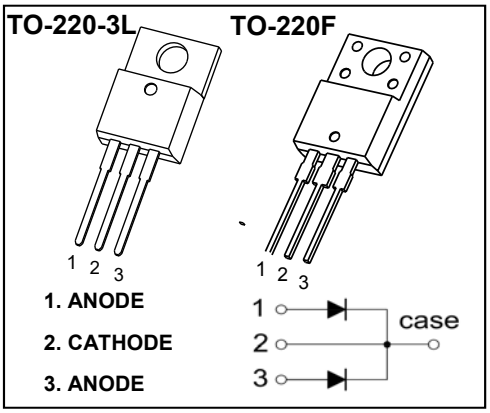
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

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

## MUR1640CT、MURF1640CT SUPER FAST RECOVER RECTIFIER

**MAIN CHARACTERISTICS**

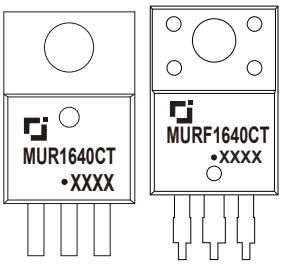
| | |
|---|---|
| $I_O$ | 16A |
| $V_{RRM}$ | 400 V |
| $T_j$ | 150 ℃ |
| $V_{F(typ)}$ | 1.1V （@Tj=125℃） |




**FEATURES**

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

**MARKING**




MUR(F)1640CT = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

**MAXIMUM RATINGS ( $T_a$=25℃ unless otherwise noted )**

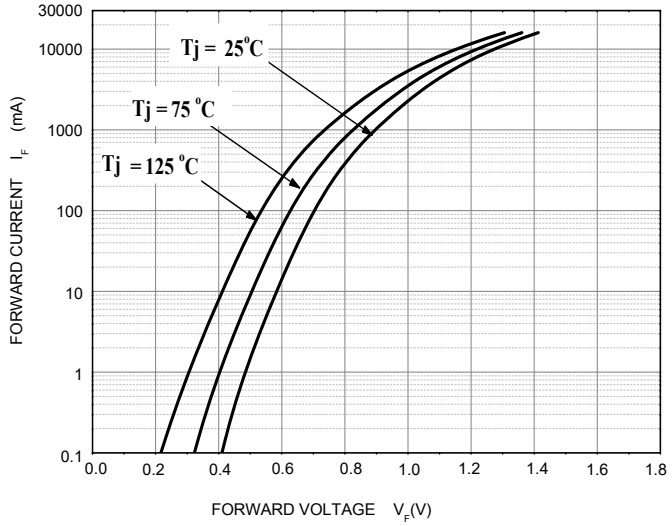
| Symbol | Parameter | MUR | | Unit |
|---|---|---|---|---|
| | | 1640CT | F1640CT | |
| $V_{RRM}$ | Peak repetitive reverse voltage | 400 | | V |
| $V_{RWM}$ | Working peak reverse voltage | | | |
| $V_R$ | DC blocking voltage | | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 280 | | V |
| $I_O$ | Average rectified output current@ Per leg | 8 | | A |
| | Average rectified output current@ Total device | 16 | | A |
| $I_{FSM}$ | Non-Repetitive peak forward surge current 8.3ms half sine wave | 120 | | A |
| $P_D$ | Power dissipation | 2.0 | | W |
| $R_{\Theta JA}$ | Thermal resistance from junction to ambient | 62.5 | | ℃/W |
| $T_j$ | Operating Junction Temperature Range | -55 ~ +150 | | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55 ~ +150 | | ℃ |

**ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)**

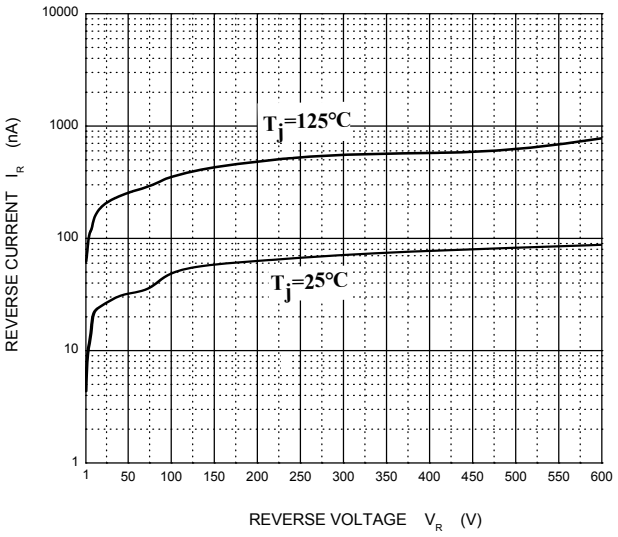
| Parameter | Symbol | Test conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Reverse voltage | $V_{(BR)}$ | $I_R$=100uA | | 400 | | | V |
| Reverse current | $I_R$ | $V_R$=400V | Tj =25℃ | | 0.1 | 1 | uA |
| | | | Tj =125℃ | | 1.0 | | uA |
| Forward voltage | $V_F$ | $I_F$=8.0A | Tj =25℃ | | 1.22 | 1.4 | V |
| | | | Tj =125℃ | | 1.10 | | V |
| Typical total capacitance | $C_{tot}$ | $V_R$=4.0V,f=1MHz | | | 28 | | pF |
| Reverse recovery time | $t_{rr}$ | $I_F$= 0.5A, $I_R$=1A,$I_{rr}$=0.25A | | | | 35 | ns |

# Typical Characteristics

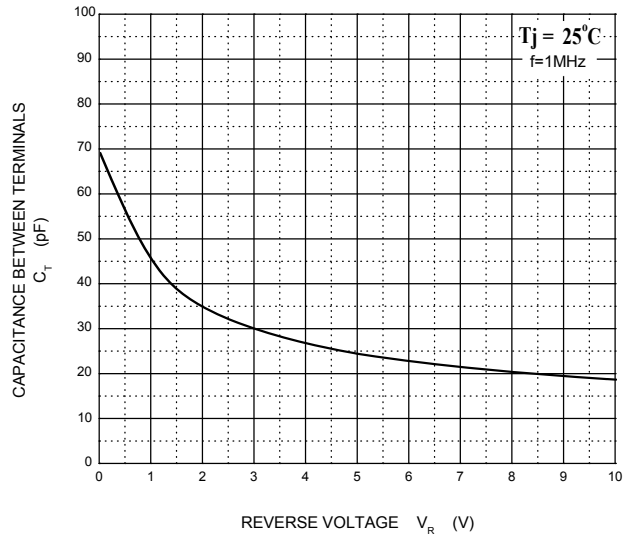
**Forward Characteristics**




**Reverse Characteristics**




**Capacitance Characteristics**




**Power Derating Curve**

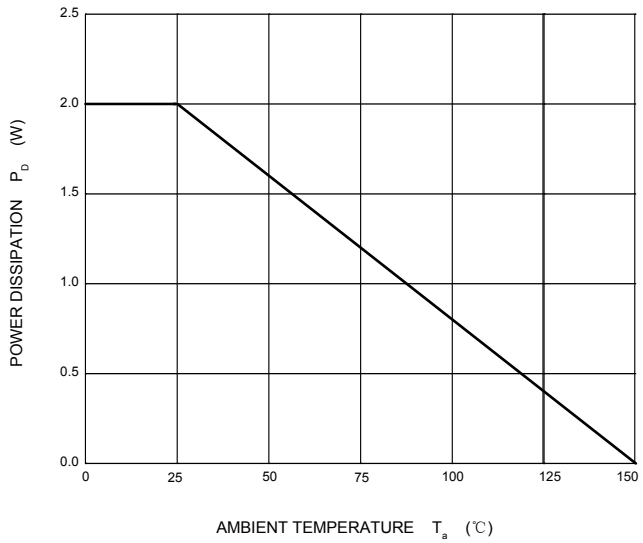
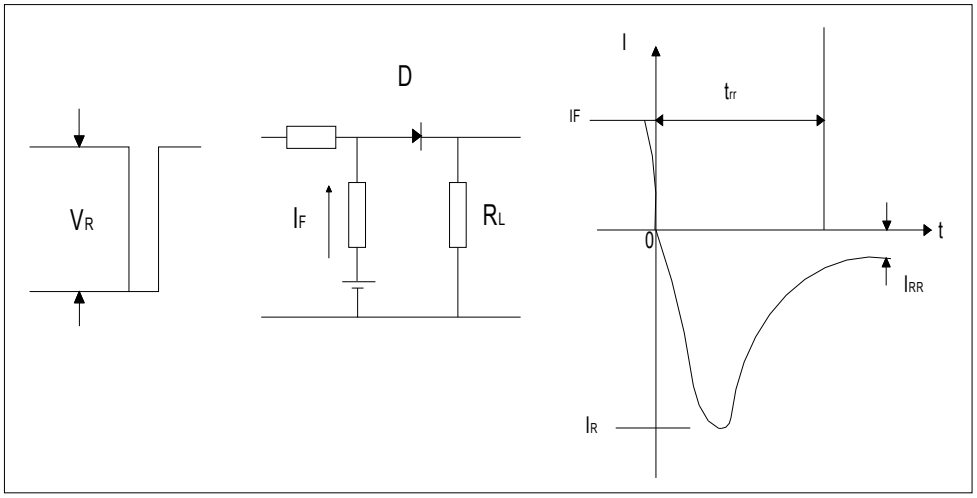
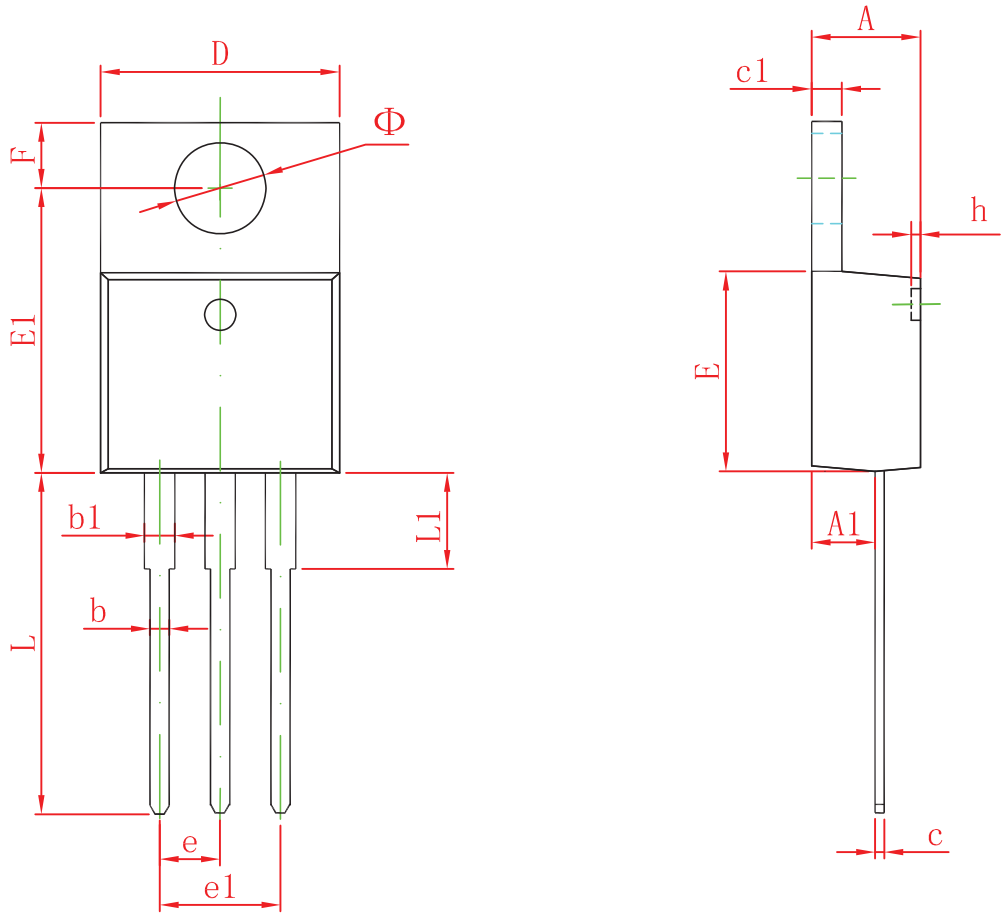



Diagram of circuit and Testing wave form of reverse recovery time

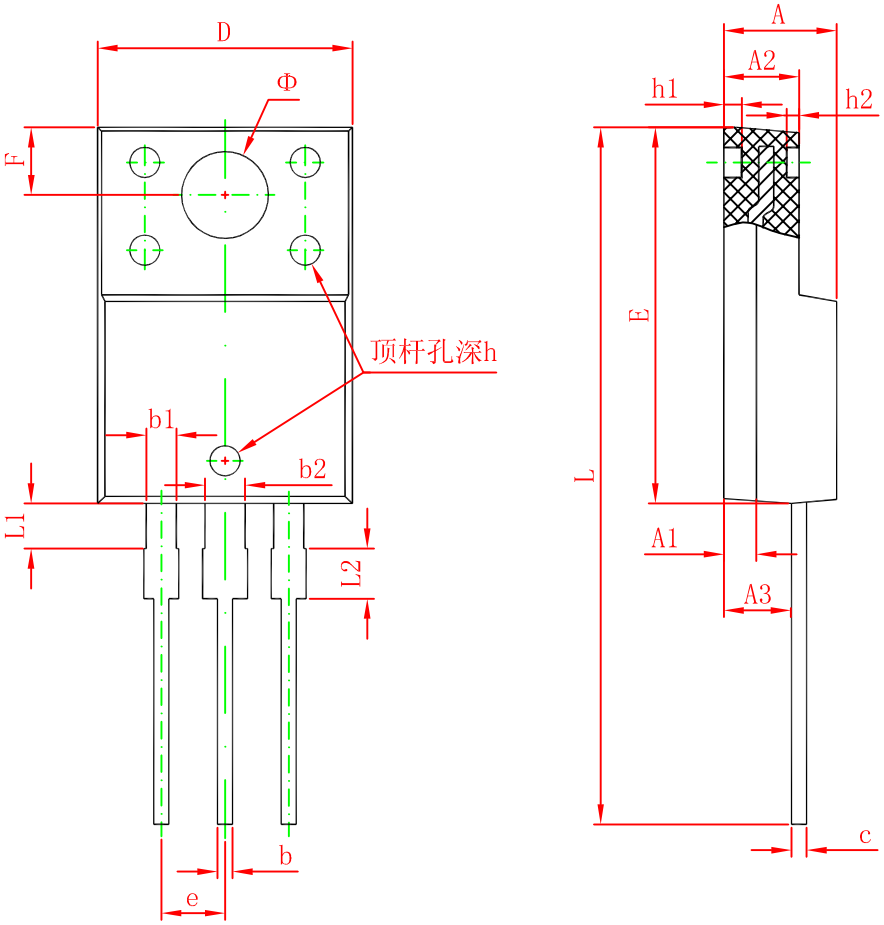


## TO-220-3L Package Outline Dimensions




| 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 |
| Φ | 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 |

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