



LGE

# MUR1620CT/CTR

Ultra-Fast Recovery Diodes 16A Pt



## Features

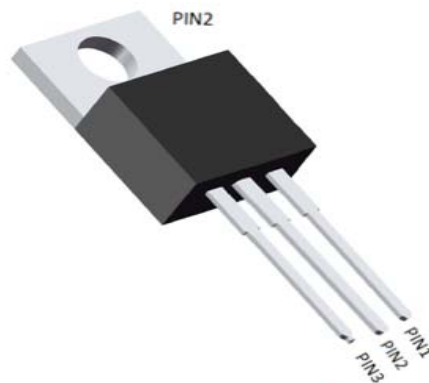
- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

## Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

## Mechanical Data

- **Package:** TO-220AB  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked



MUR1620CT



MUR1620CTR

| TYPE      | V <sub>RSM</sub><br>V | V <sub>RRM</sub><br>V |
|-----------|-----------------------|-----------------------|
| MUR1620CT | 200                   | 200                   |

## ■Maximum Ratings (T<sub>j</sub>=25°C Unless otherwise specified)

| Symbol                                                  | Test Conditions                                                     | Maximum Ratings                 | Unit |
|---------------------------------------------------------|---------------------------------------------------------------------|---------------------------------|------|
| I <sub>FRMS</sub><br>I <sub>FAVM</sub>                  | T <sub>C</sub> =150°C; rectangular, d=0.5                           | 35<br>2 x 8                     | A    |
| I <sub>FSM</sub>                                        | T <sub>VJ</sub> =45°C; t <sub>p</sub> =10ms (50Hz), sine            | 160                             | A    |
| E <sub>AS</sub>                                         | T <sub>VJ</sub> =25°C; non-repetitive; I <sub>AS</sub> =2A; L=180uH | 0.5                             | mJ   |
| I <sub>AR</sub>                                         | V <sub>A</sub> =1.5·V <sub>R</sub> typ.; f=10kHz; repetitive        | 0.2                             | A    |
| T <sub>VJ</sub><br>T <sub>VJM</sub><br>T <sub>stg</sub> |                                                                     | -55...+175<br>175<br>-55...+150 | °C   |
| P <sub>tot</sub>                                        | T <sub>C</sub> =25°C                                                | 60                              | W    |
| M <sub>d</sub>                                          | mounting torque                                                     | 0.4...0.6                       | Nm   |
| Weight                                                  | typical                                                             | 2                               | g    |

## ■Electrical Characteristics

| Symbol                   | Test Conditions                                                                                 | Characteristic Values<br>typ. | max. | Unit          |
|--------------------------|-------------------------------------------------------------------------------------------------|-------------------------------|------|---------------|
| $I_R$                    | $T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$                                                        |                               | 50   | $\mu\text{A}$ |
| $V_F$                    | $I_F=8\text{A}; T_{VJ}=25^{\circ}\text{C}$                                                      |                               | 1.05 | V             |
| $R_{thJC}$<br>$R_{thCH}$ |                                                                                                 | 0.5                           | 2.5  | K/W           |
| $t_{rr}$                 | $I_F=1\text{A}; -di/dt=50\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$       | 30                            | 50   | ns            |
| $I_{RM}$                 | $V_R=100\text{V}; I_F=10\text{A}; -di_F/dt=100\text{A}/\mu\text{s}; T_{VJ}=100^{\circ}\text{C}$ |                               | 4.1  | A             |

## ■Thermal Characteristics ( $T_j=25^{\circ}\text{C}$ Unless otherwise specified )

| PARAMETER          |                           | SYMBOL           | UNIT                        | MUR1620CT/CTR |
|--------------------|---------------------------|------------------|-----------------------------|---------------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | $^{\circ}\text{C}/\text{W}$ | 2.0           |
| Thermal Resistance | Between junction and Air  | $R_{\theta J-A}$ | $^{\circ}\text{C}/\text{W}$ | 50            |

## ■Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g)   | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| MUR1620CT/CTR | Approximate 1.88 | 50                   | 1000                    | 5000                       | Tube          |

## ■Characteristics (Typical)

FIG1: $I_o$  - $T_c$  Curve

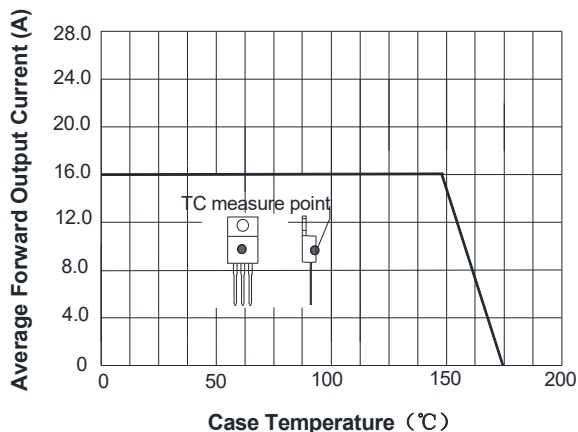


FIG2:Surge Forward Current Capability

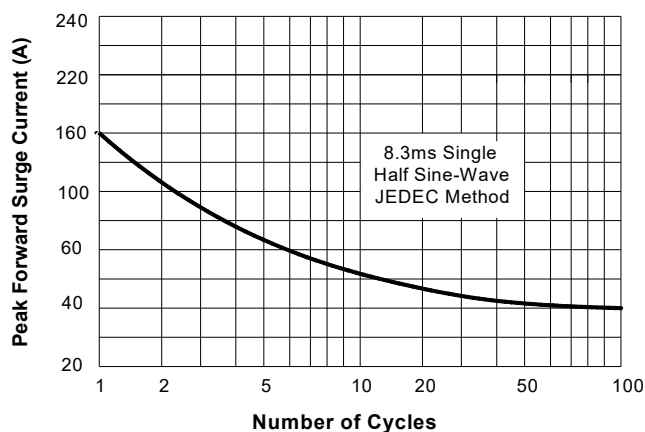


FIG3: Forward Voltage

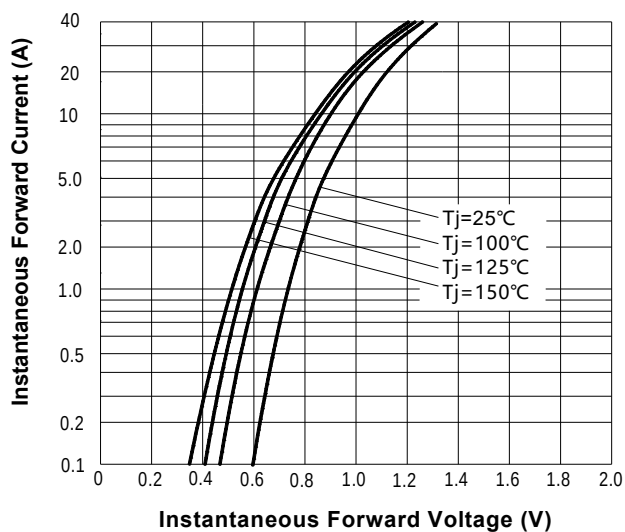


FIG.4: Instantaneous Reverse Characteristics

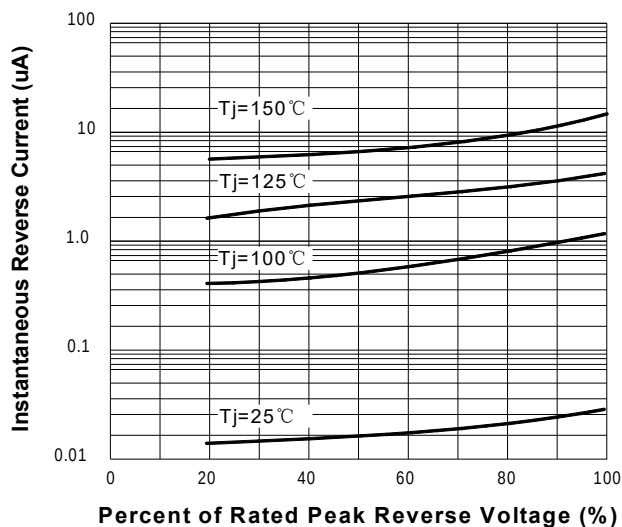
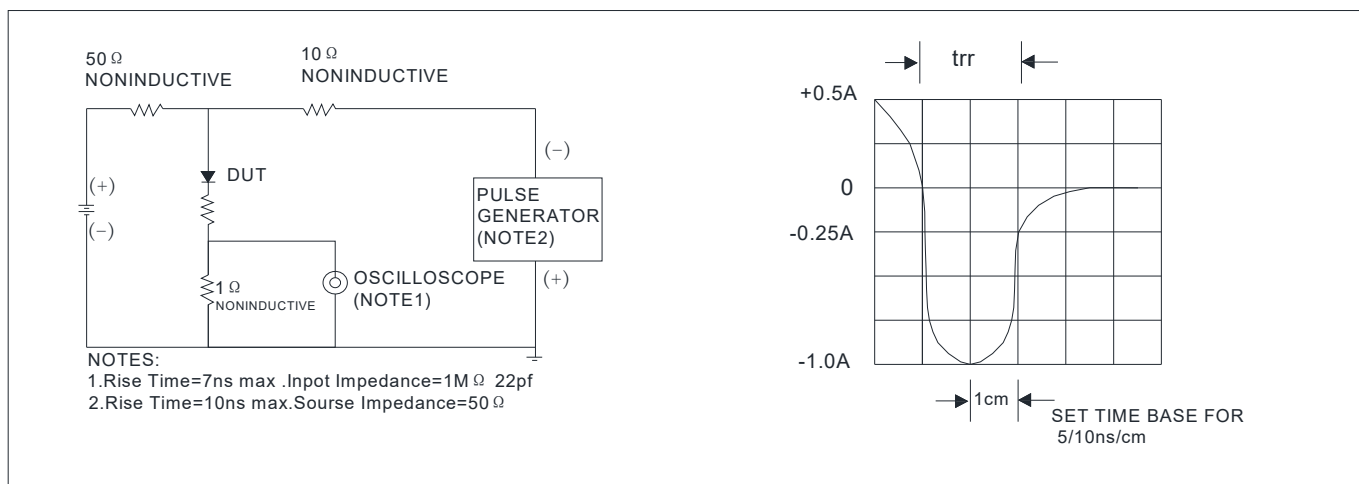
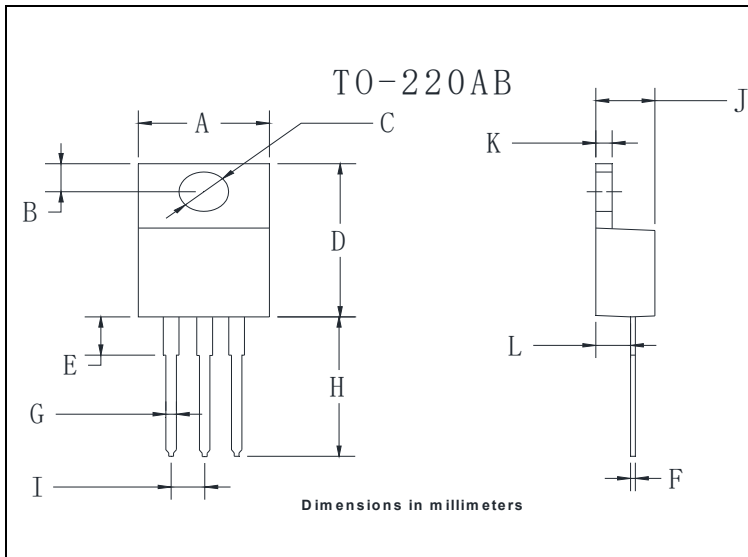


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■Outline Dimensions



| TO-220AB |       |       |
|----------|-------|-------|
| Dim      | Min   | Max   |
| A        | 9.95  | 10.35 |
| B        | 2.55  | 2.95  |
| C        | 3.8   | 4.0   |
| D        | 14.95 | 15.25 |
| E        | 3.75  | 4.25  |
| F        | 0.26  | 0.5   |
| G        | 0.68  | 0.94  |
| H        | 13.4  | 13.9  |
| I        | 2.35  | 2.65  |
| J        | 4.38  | 4.78  |
| K        | 1.14  | 1.4   |
| L        | 2.37  | 2.79  |

| Package  | Packing    | Box Size<br>L×W×H(mm) | Quantity(pcs/box) | Carton Size<br>L×W×H(mm) | Quantity(pcs/carton) |
|----------|------------|-----------------------|-------------------|--------------------------|----------------------|
| TO-220AB | 50pcs/Tube | 558×148×38            | 1000              | 565×225×175              | 5000                 |