



### Features

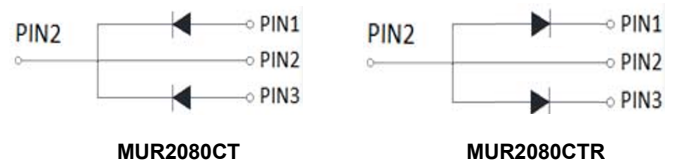
- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

### Typical Applications

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

### Mechanical Data

- **Package:** TO-220AB ITO-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



### ■Maximum Ratings (Ta=25°C Unless otherwise specified)

| TYPE       | V <sub>RSM</sub><br>V | V <sub>RRM</sub><br>V |
|------------|-----------------------|-----------------------|
| MUR2080CT  | 800                   | 800                   |
| MUR2080CTR | 800                   | 800                   |

| Symbol                            | Characteristics                                                                                                                                             | Maximum Ratings | Unit |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|
| I <sub>AV</sub>                   | Maximum Average Forward Rectified Current @T <sub>C</sub> =95°C                                                                                             | 20              | A    |
| I <sub>FSM</sub>                  | Peak Forward Surge Current 8.3ms Single Half-Sine-Wave Superimposed On Rated Load (JEDEC METHOD)                                                            | 200             | A    |
| V <sub>F</sub>                    | Maximum Forward Voltage At<br>Pulse Width=300us<br>2% Duty Cycle<br>I <sub>F</sub> =10A @T <sub>J</sub> =25°C<br>I <sub>F</sub> =10A @T <sub>J</sub> =125°C | 1.75<br>1.55    | V    |
| I <sub>R</sub>                    | Maximum DC Reverse Current<br>At Rated DC Blocking Voltage<br>@T <sub>J</sub> =25°C<br>@T <sub>J</sub> =100°C                                               | 3<br>100        | uA   |
| C <sub>J</sub>                    | Typical Junction Capacitance Per Element (Note 1)                                                                                                           | 150             | pF   |
| T <sub>RR</sub>                   | Maximum Reverse Recovery Time (Note 2)                                                                                                                      | 50              | ns   |
| R <sub>θJC</sub>                  | Typical Thermal Resistance (Note 3)                                                                                                                         | 1.5             | °C/W |
| T <sub>J</sub> , T <sub>STG</sub> | Operating And Storage Temperature Range                                                                                                                     | -55 to +175     | °C   |

NOTES: 1. Measured At 1.0MHz And Applied Reverse Voltage Of 4.0V DC.  
2. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.  
3. Thermal Resistance Junction To Case.

## ■ Characteristics (Typical)

FIG.1 - FORWARD CURRENT DERATING CURVE

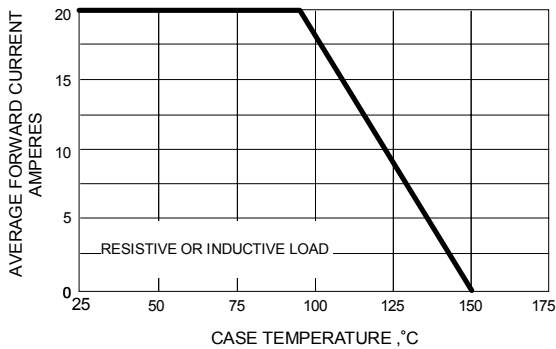


FIG.2 - MAXIMUM NON-REPETITIVE SURGE

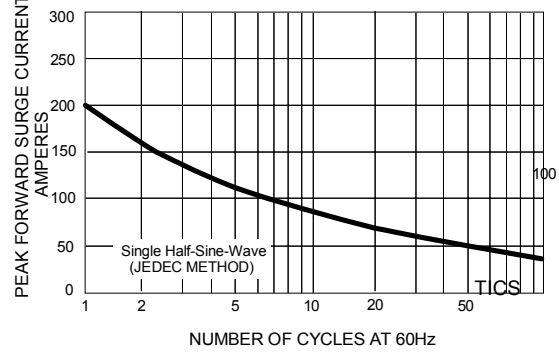


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

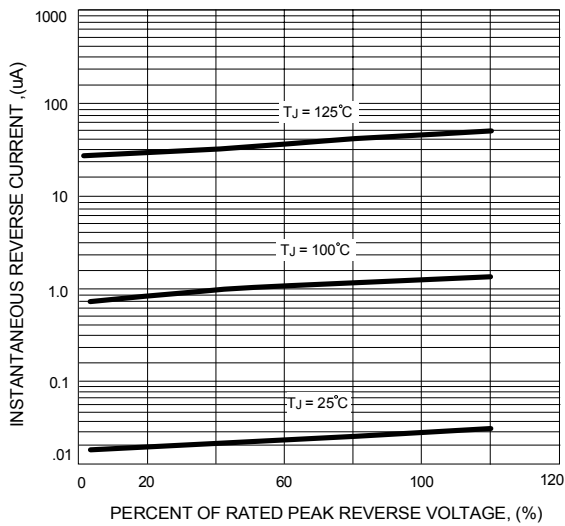


FIG.4 - TYPICAL FORWARD CHARACTERIS

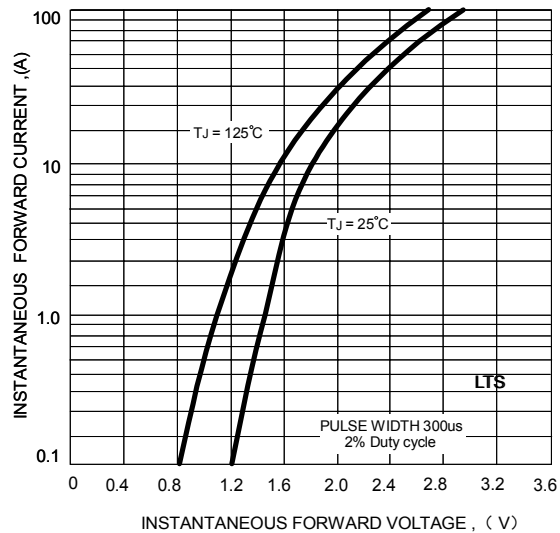


FIG.5 - TYPICAL JUNCTION CAPACITANCE

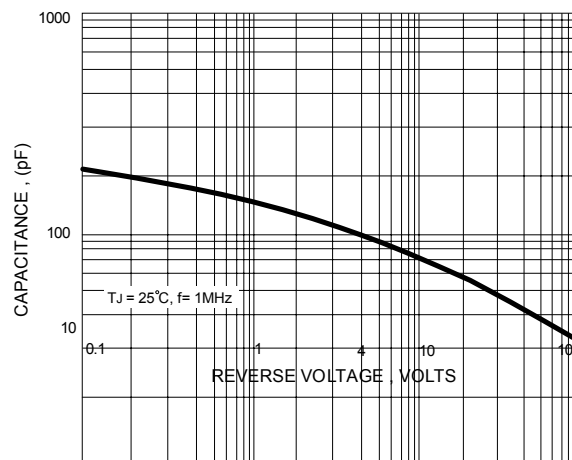
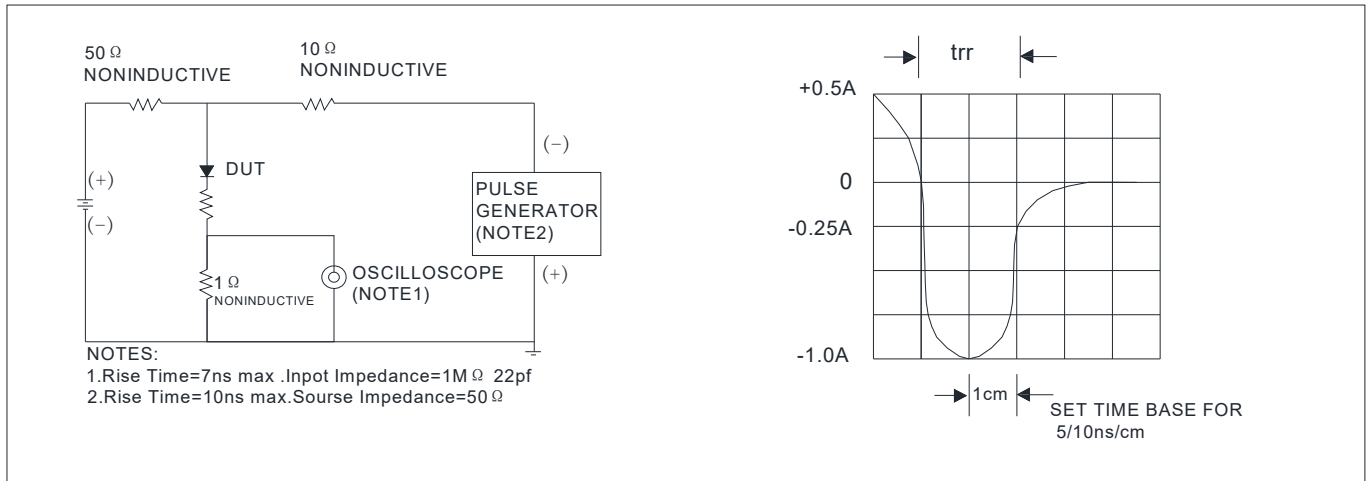


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



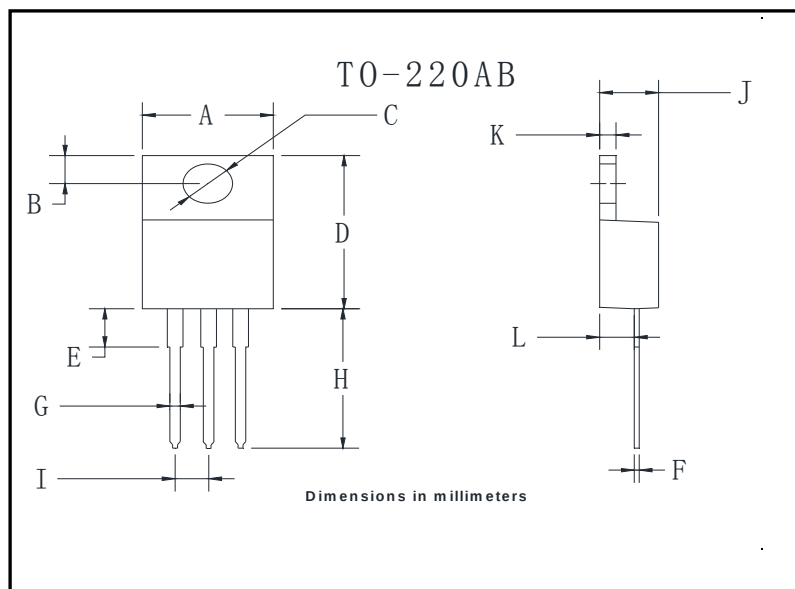
## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER          |                           | SYMBOL            | UNIT | MUR2080CT/MUR2080CTR |
|--------------------|---------------------------|-------------------|------|----------------------|
| Thermal Resistance | Between junction and case | R <sub>θJ-C</sub> | °C/W | 4.0                  |
|                    | Between junction and Air  | R <sub>θJ-A</sub> | °C/W | 50                   |

## ■ Ordering Information (Example)

| PREFERRED P/N        | UNIT WEIGHT(g)  | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|----------------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MUR2080CT/MUR2080CTR | Approximate 1.6 | 50                    | 1000                    | 5000                       | Tube          |

## ■Outline Dimensions



| TO-220AB |       |       |
|----------|-------|-------|
| Dim      | Min   | Max   |
| A        | 9.5   | 10.9  |
| B        | 2.22  | 3.27  |
| C        | 3.34  | 4.31  |
| D        | 14.5  | 15.5  |
| E        | 3.16  | 4.46  |
| F        | 0.28  | 0.64  |
| G        | 0.68  | 0.94  |
| H        | 13.06 | 14.62 |
| I        | 2.01  | 3.07  |
| J        | 4.04  | 5.1   |
| K        | 1.14  | 1.4   |
| L        | 2.14  | 3.19  |

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