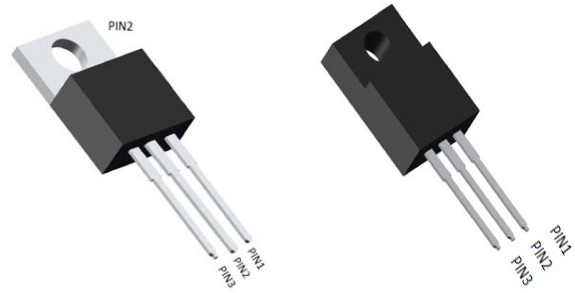


Features

- 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

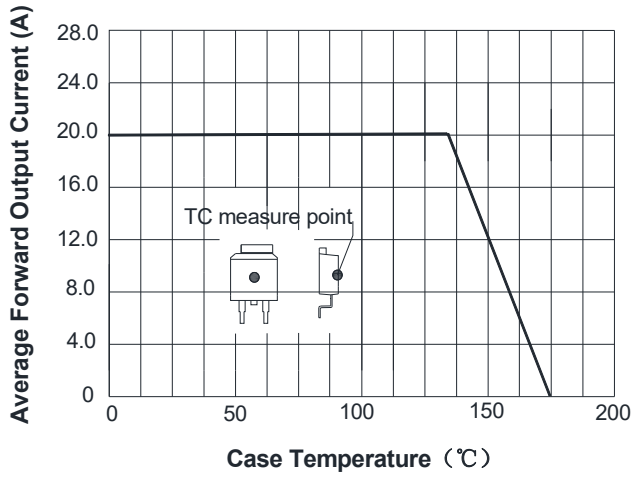
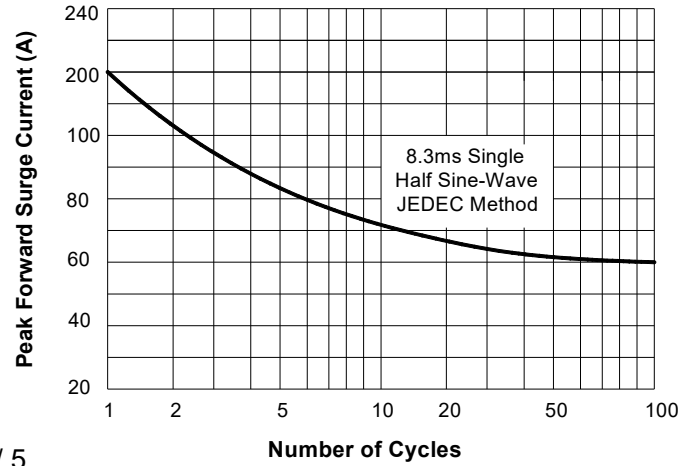


■Maximum Ratings (Ta=25°C Unless otherwise specified)

| | V _{RSM} V | V _{RRM} V |
|-------------------|-----------------------|-----------------------|
| MUR2020CT | 200 | 200 |
| MUR2020FCT | 200 | 200 |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|---|---|---------------------------------|------|
| I_{FRMS} I_{FAVM} | T _C =150°C; rectangular, d=0.5 | 38 2 x 10 | A |
| I_{FSM} | T _{VJ} =45°C; t _p =10ms (50Hz), sine | 200 | A |
| E_{AS} | T _{VJ} =25°C; non-repetitive; I _{AS} =2A; L=180uH | 0.5 | mJ |
| I_{AR} | V _A =1.5·V _R typ.; f=10kHz; repetitive | 0.2 | A |
| T_{VJ} T_{VJM} T_{stg} | | -55...+175 175 -55...+175 | °C |
| P_{tot} | T _C =25°C | 60 | W |
| M_d | mounting torque | 0.4...0.6 | Nm |
| Weight | typical | 2 | g |

| Symbol | Test Conditions | Characteristic Values | | Unit |
|--|---|-----------------------|------|------|
| | | typ. | max. | |
| I_R | T _{VJ} =25°C; V _R =V _{RRM} | | 50 | uA |
| V_F | I _F =8A; T _{VJ} =25°C | 0.98 | 1.15 | V |
| R_{thJC} R_{thCH} | | 0.5 | 2.5 | K/W |
| t_{rr} | I _F =1A; -di/dt=50A/us; V _R =30V; T _{VJ} =25°C | 30 | 35 | ns |
| I_{RM} | V _R =100V; I _F =10A; -di _F /dt=100A/us; T _{VJ} =100°C | | 4.1 | A |

■ Characteristics (Typical)
FIG1: I_o -T_c Curve

FIG2: Surge Forward Current Capability


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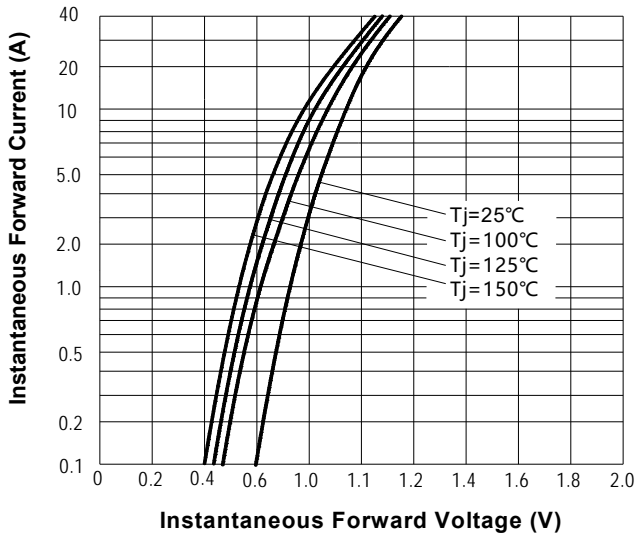
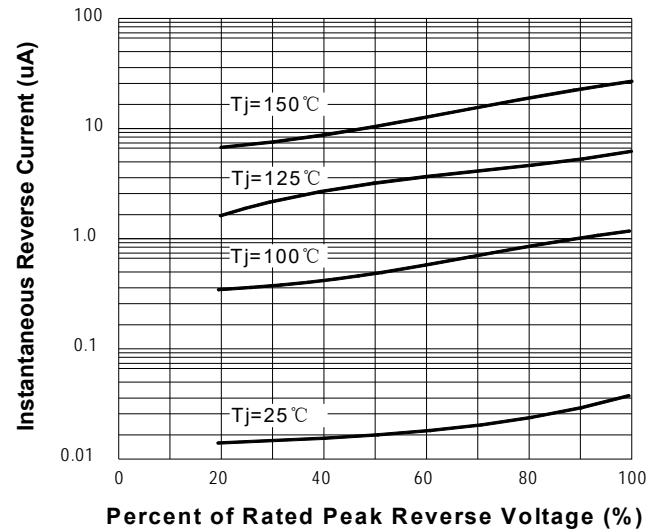
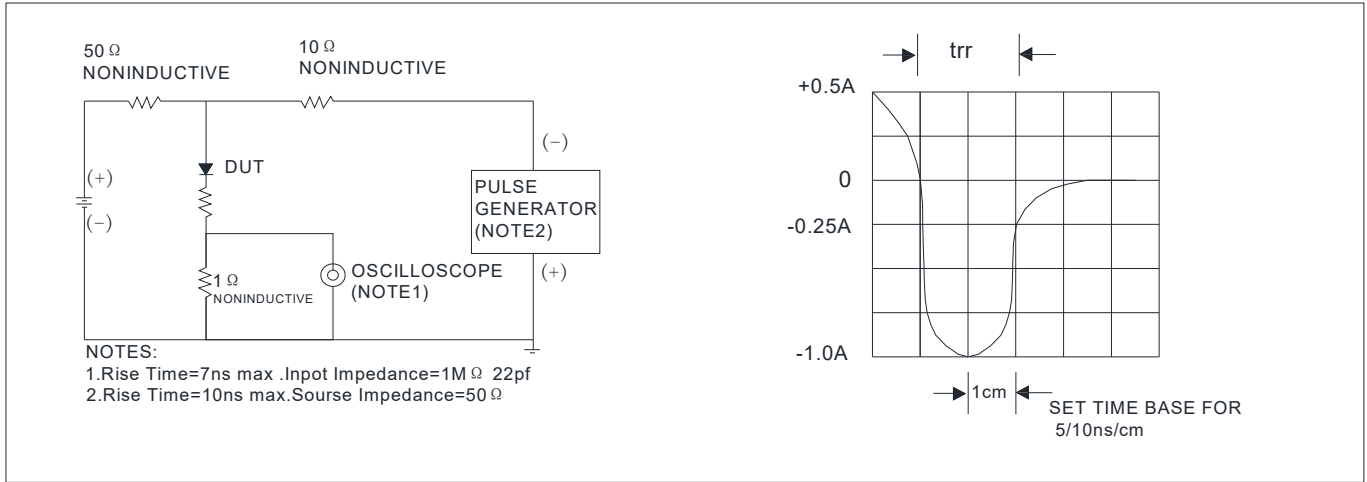
FIG3: Forward Voltage

FIG4: Instantaneous Reverse Characteristics


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



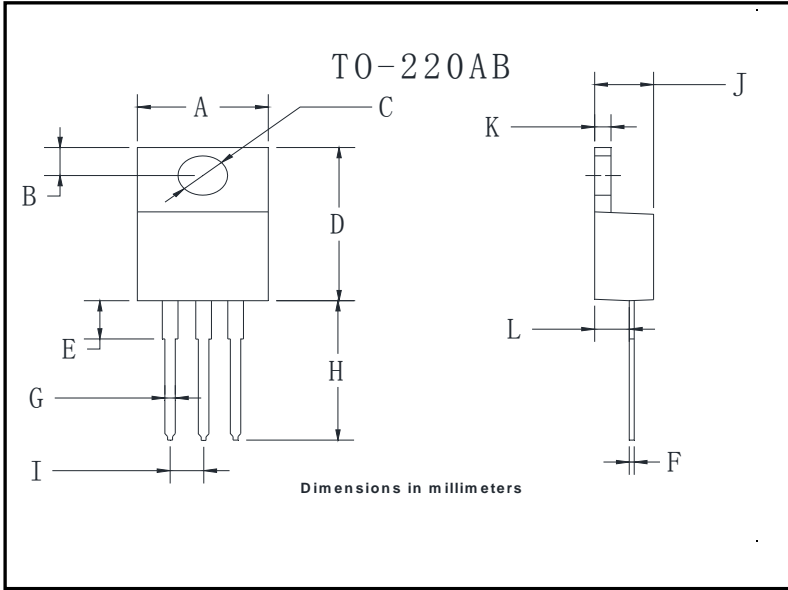
■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | | SYMBOL | UNIT | MUR2020CT/MUR2020FCT |
|--------------------|---------------------------|-------------------|------|----------------------|
| Thermal Resistance | Between junction and case | R _{θJ-C} | °C/W | 4.0 |
| | Between junction and Air | R _{θJ-A} | °C/W | 50 |

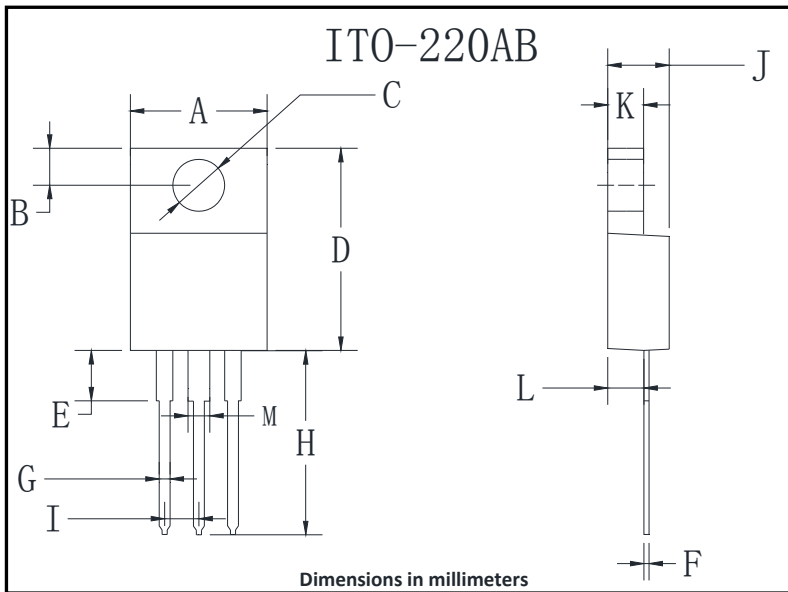
■ Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|----------------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MUR2020CT/MUR2020FCT | 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 |



| ITO-220AB | | |
|-----------|-------|-------|
| Dim | Min | Max |
| A | 9.8 | 10.2 |
| B | 2.25 | 2.75 |
| C | 2.95 | 3.45 |
| D | 14.75 | 15.25 |
| E | 3.05 | 3.95 |
| F | 0.45 | 0.75 |
| G | 0.45 | 0.75 |
| H | 13.4 | 14.2 |
| I | 2.35 | 2.75 |
| J | 4.3 | 4.8 |
| K | 2.58 | 2.82 |
| L | 2.58 | 2.82 |
| M | 1.47 | 1.77 |