



# MUR520/MUR520F

Ultrafast Recovery Rectifier  
Reverse Voltage 200 Volts Forward Current 5 Amperes

## Features

- FRED (Planar) wafer construction
- Ultrafast recovery time
- Low forward voltage drop, low power loss
- High efficiency
- Plastic package has underwriters Laboratory Flammability Classification 94V-0



**MUR520**  
Package: TO-220-AC



**MUR520F**  
Package: ITO-220-AC

## Mechanical Data

- Case: Epoxy, molded
- Weight: 1.9grams (approximately)
- Finish: all external surfaces corrosion resistant and terminal leads readily solderable
- Lead Temperature for soldering purposes: 260°C Max. for 10 sec
- 50 units per plastic tube



## Maximum Ratings & Electrical Characteristics

(T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER  | TEST CONDITIONS                                 |   | SYMBOL             | Y: o                 | UNIT        |
|--|---|---|--------------------|----------------------|-------------|
| Maximum Repetitive Peak Reverse Voltage  |   |   | V <sub>RRM</sub>   | 200                  | V           |
| Working Peak Reverse Voltage   |   |   | V <sub>RWM</sub>   | 200                  | V           |
| Maximum DC Blocking Voltage  |   |   | V <sub>DC</sub>    | 200                  | V           |
| Maximum Average Forward Rectified Current at T <sub>c</sub> =105°C Total Device per Diode                |   |   | I <sub>F(AV)</sub> | 5                    | A           |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load per Diode              |   |   | I <sub>FSM</sub>   | 90                   | A           |
| Voltage Rate of Change (Rated V <sub>R</sub> )   |   |   | DV/dt              | 10000                | V/us        |
| Operating Junction Temperature Range   |   |   | T <sub>J</sub>     | - 55 to+150          | °C          |
| Storage Temperature Range  |   |   | T <sub>STG</sub>   | - 55 to+150          | °C          |
| Maximum Reverse Recover Time (I <sub>F</sub> =0.5Amp, I <sub>R</sub> =1.0Amp, I <sub>rec</sub> =0.25Amp) |   |   | T <sub>rr</sub>    | 35                   | ns          |
| Maximum Instantaneous Forward Voltage per Leg  | I <sub>F</sub> =5A<br>I <sub>F</sub> =5A        | T <sub>c</sub> =25°C<br>T <sub>c</sub> =125°C | V <sub>F</sub>     | 0.96<br>0.88         | V           |
| Maximum Reverse Current per Leg at Working Peak Reverse voltage  | T <sub>J</sub> =25°C<br>T <sub>J</sub> =100°C   |   | I <sub>R</sub>     | 10<br>500            | uA          |
| <b>Thermal Characteristics T<sub>A</sub>=25°C unless otherwise noted</b>                                 |   |   |                    |                      |             |
| <b>Symbol</b>  | <b>Parameter</b>                                | <b>TYP.(MUR520)</b>                           |                    | <b>TYP.(MUR520F)</b> | <b>Unit</b> |
| R <sub>θJC</sub>   | Thermal Resistance, Junction to Case per Leg    | 2.0   |                    | 4.0                  | °C /W       |
| R <sub>θJA</sub>   | Thermal Resistance, Junction to Ambient per Leg | 62.5  |                    | 62.5                 | °C /W       |

**Note:** Pulse test:300us pulse width, duty cycle=2%



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## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

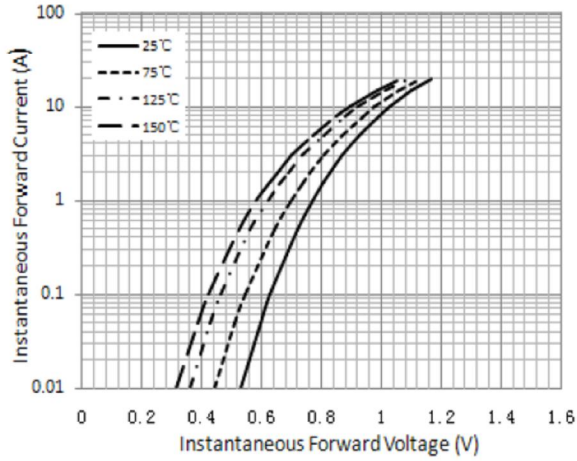


Figure 1. Typical Instantaneous Forward Characteristics

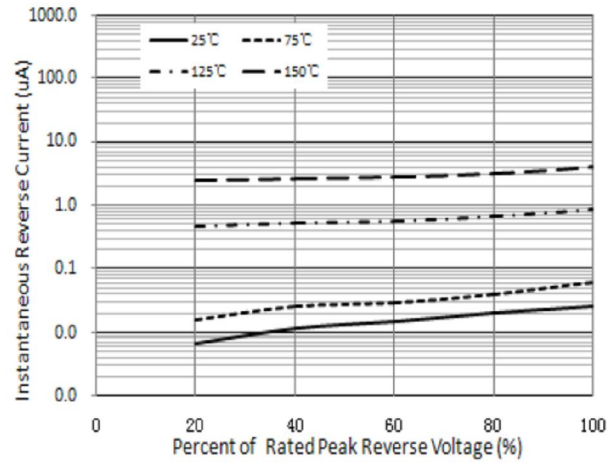


Figure 2. Typical Reverse Characteristics

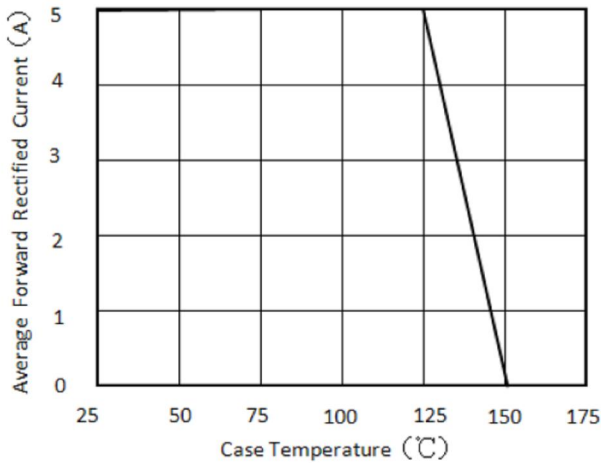


Figure 3. Forward Current Derating Curve

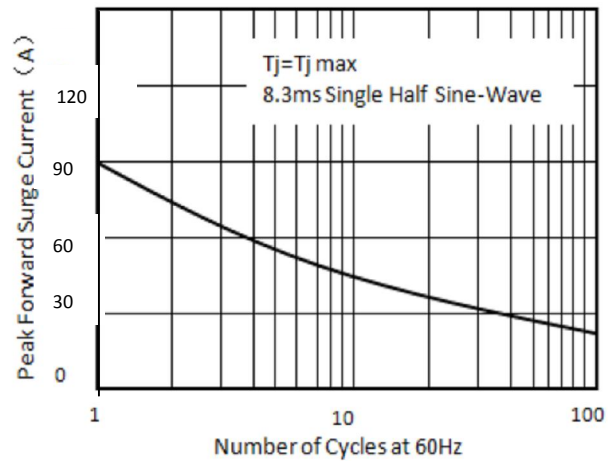


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current



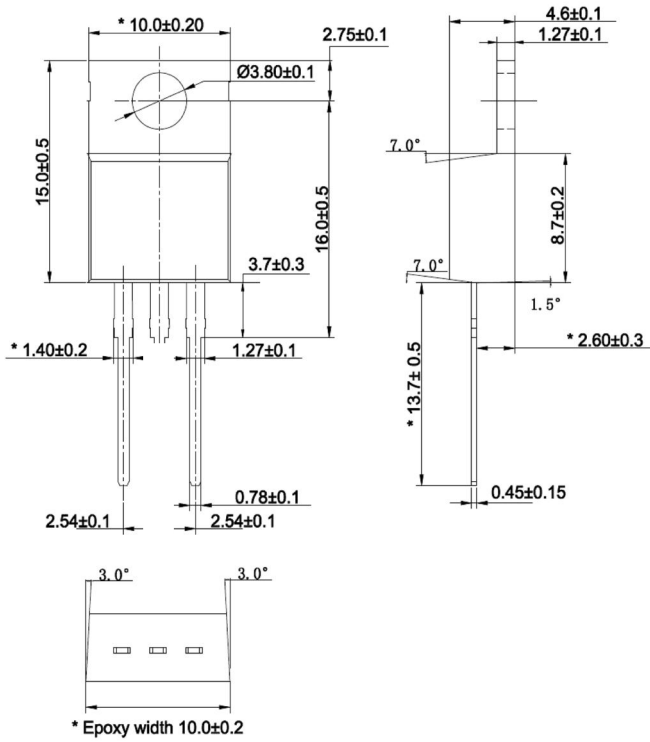
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## Package Outline Dimensions

Unit: millimeters

### TO-220-AC



### ITO-220-AC

