



**MGBR20V100**

Preliminary

**DIODE**

**MOS GATED BARRIER RECTIFIER**

■ DESCRIPTION

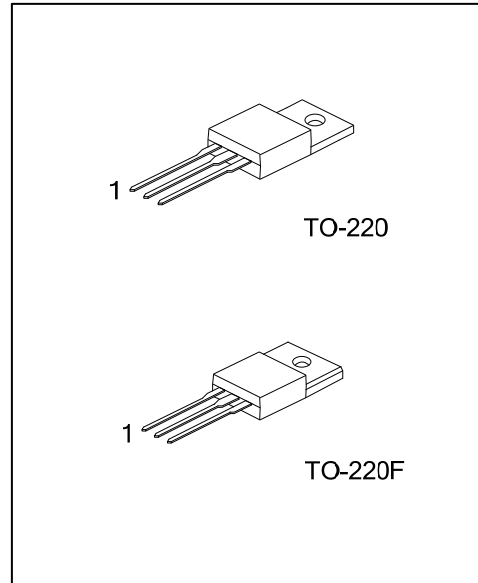
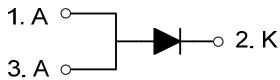
The UTC **MGBR20V100** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high current capability, etc.

The UTC **MGBR20V100** suitable for free wheeling, high frequency inverters, polarity protection, and low voltage.

■ FEATURES

- \* Very low forward voltage drop
- \* High current capability
- \* High surge capability
- \* High efficiency

■ SYMBOL



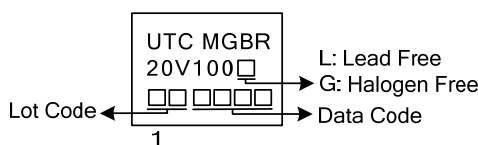
■ ORDERING INFORMATION

| Ordering Number   |                   | Package | Pin Assignment |   |   | Packing |
|-------------------|-------------------|---------|----------------|---|---|---------|
| Lead Free         | Halogen Free      |         | 1              | 2 | 3 |         |
| MGBR20V100L-TA3-T | MGBR20V100G-TA3-T | TO-220  | A              | K | A | Tube    |
| MGBR20V100L-TF3-T | MGBR20V100G-TF3-T | TO-220F | A              | K | A | Tube    |

Note: Pin Assignment: A: Anode K: Cathode

|                          |  |
|--------------------------|--|
| <p>MGBR20V100L-TA3-T</p> | <p>(1) T: Tube</p> <p>(2) TA3: TO-220, TF3: TO-220F</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p> |
|--------------------------|--|

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

| PARAMETER  | SYMBOL    | RATINGS    | UNIT             |
|--|-----------|------------|------------------|
| DC Blocking Voltage (Note 1)   | $V_{RM}$  | 100        | V                |
| Working Peak Reverse Voltage   | $V_{RWM}$ | 100        | V                |
| Peak Repetitive Reverse Voltage  | $V_{RRM}$ | 100        | V                |
| Average Rectified Output Current   | $I_O$     | 20         | A                |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 250        | A                |
| Operating Junction Temperature   | $T_J$     | -65 ~ +150 | $^\circ\text{C}$ |
| Storage Temperature  | $T_{STG}$ | -65 ~ +150 | $^\circ\text{C}$ |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL CHARACTERISTICS (PER LEG)

| PARAMETER                  | SYMBOL  | RATINGS | UNIT                      |
|----------------------------|---------|---------|---------------------------|
| Typical Thermal Resistance | TO-220  | 2       | $^\circ\text{C}/\text{W}$ |
|                            | TO-220F | 4       |                           |

■ ELECTRICAL CHARACTERISTICS (PER LEG) ( $T_A=25^\circ\text{C}$  unless otherwise specified.)

| PARAMETER                 | SYMBOL      | TEST CONDITIONS                          | MIN | TYP | MAX  | UNIT          |
|---------------------------|-------------|--|-----|-----|------|---------------|
| Reverse Breakdown Voltage | $V_{(BR)R}$ | $I_R=0.50\text{mA}$                      | 100 |     |      | V             |
| Forward Voltage Drop      | $V_{FM}$    | $I_F=20\text{A}, T_C=25^\circ\text{C}$   |     |     | 0.85 | V             |
|                           |             | $I_F=20\text{A}, T_C=125^\circ\text{C}$  |     |     | 0.80 | V             |
| Leakage Current           | $I_{RM}$    | $V_R=100\text{V}, T_C=25^\circ\text{C}$  |     |     | 300  | $\mu\text{A}$ |
|                           |             | $V_R=100\text{V}, T_C=125^\circ\text{C}$ |     |     | 30   | mA            |

Note: Pulse Test: Pulse width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$ .

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