



**MGBR10V50**

Preliminary

**DIODE**

**MOS GATED BARRIER RECTIFIER**

■ DESCRIPTION

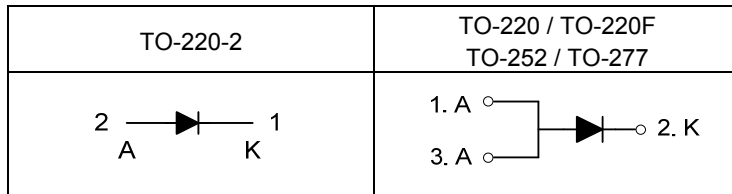
The UTC **MGBR10V50** is a mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high current capability, etc.

The UTC **MGBR10V50** 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

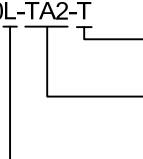
■ SYMBOL

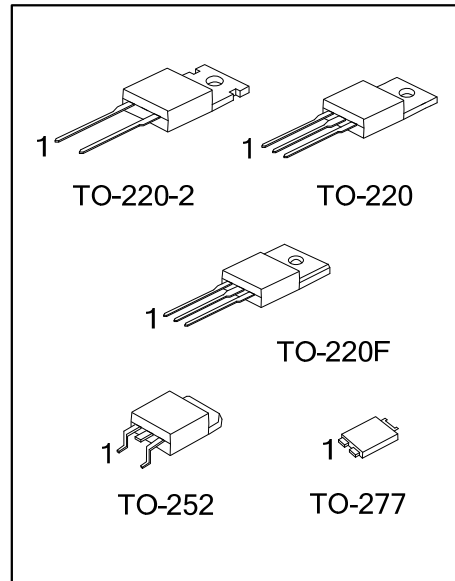


■ ORDERING INFORMATION

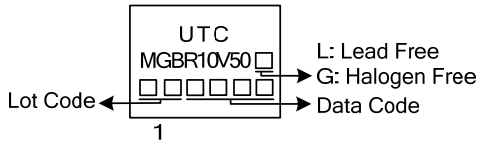
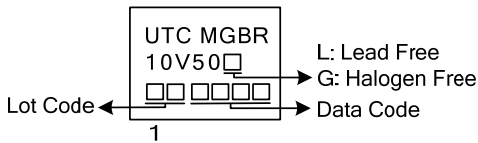
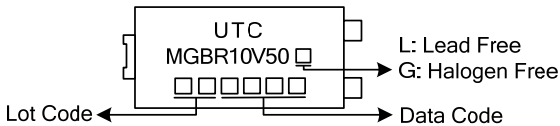
| Ordering Number  |                  | Package  | Pin Assignment |   |   | Packing   |
|------------------|------------------|----------|----------------|---|---|-----------|
| Lead Free        | Halogen Free     |          | 1              | 2 | 3 |           |
| MGBR10V50L-TA2-T | MGBR10V50G-TA2-T | TO-220-2 | K              | A | - | Tube      |
| MGBR10V50L-TA3-T | MGBR10V50G-TA3-T | TO-220   | A              | K | A | Tape Reel |
| MGBR10V50L-TF3-T | MGBR10V50G-TF3-T | TO-220F  | A              | K | A | Tape Reel |
| MGBR10V50L-TN3-R | MGBR10V50G-TN3-R | TO-252   | A              | K | A | Tape Reel |
| MGBR10V50L-T27-R | MGBR10V50G-T27-R | TO-277   | A              | K | A | Tape Reel |

Note: Pin Assignment: A: Anode K: Cathode

|  |  |
|--|--|
| <p>MGBR10V50L-TA2-T</p>  <ul style="list-style-type: none"> <li>(1)Packing Type</li> <li>(2)Package Type</li> <li>(3)Green Package</li> </ul> | <ul style="list-style-type: none"> <li>(1) T: Tube, R: Tape Reel</li> <li>(2) TA2: TO-220-2, TA3: TO-220, TF3: TO-220F, TN3: TO-252, T27: TO-277</li> <li>(3) L: Lead Free, G: Halogen Free and Lead Free</li> </ul> |
|--|--|



### MARKING

| PACKAGE                       | MARKING  |
|-------------------------------|--|
| TO-220-2<br>TO-220<br>TO-220F |  |
| TO252                         |  |
| TO-277                        |  |

■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°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 <sub>RM</sub>  | 50         | V    |
| Working Peak Reverse Voltage   | V <sub>RWM</sub> | 50         | V    |
| Peak Repetitive Reverse Voltage  | V <sub>RPM</sub> | 50         | V    |
| Average Rectified Output Current   | I <sub>O</sub>   | 10         | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 150        | A    |
| Operating Junction Temperature   | T <sub>J</sub>   | -65 ~ +150 | °C   |
| Storage Temperature  | T <sub>STG</sub> | -65 ~ +150 | °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   | θ <sub>JC</sub> | °C/W |
|                            | TO-220-2 |                 |      |
|                            | TO-220F  |                 |      |
|                            | TO-252   |                 |      |
|                            | TO-277   |                 |      |
|                            |          | 2               |      |
|                            |          | 4               |      |
|                            |          | 6               |      |
|                            |          | 72 (Note)       |      |

Note: FR-4 PCB, 2 oz Copper. Minimum recommended pad layout.

■ ELECTRICAL CHARACTERISTICS (PER LEG) (T<sub>A</sub>=25°C unless otherwise specified.)

| PARAMETER                     | SYMBOL             | TEST CONDITIONS                            | MIN | TYP | MAX  | UNIT |
|-------------------------------|--------------------|--|-----|-----|------|------|
| Reverse Breakdown Voltage     | V <sub>(BR)R</sub> | I <sub>R</sub> =0.50mA                     | 50  |     |      | V    |
| Instantaneous Forward Voltage | V <sub>FM</sub>    | I <sub>F</sub> =10A, T <sub>C</sub> =25°C  |     |     | 0.55 | V    |
|                               |                    | I <sub>F</sub> =10A, T <sub>C</sub> =125°C |     |     | 0.50 | V    |
| Leakage Current               | I <sub>RM</sub>    | V <sub>R</sub> =50V, T <sub>C</sub> =25°C  |     |     | 500  | μA   |
|                               |                    | V <sub>R</sub> =50V, T <sub>C</sub> =125°C |     |     | 25   | mA   |

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Mounted on an FR-4 PCB, 2 oz Copper. Minimum recommended pad layout.

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