

**MGBR10L50**

Preliminary

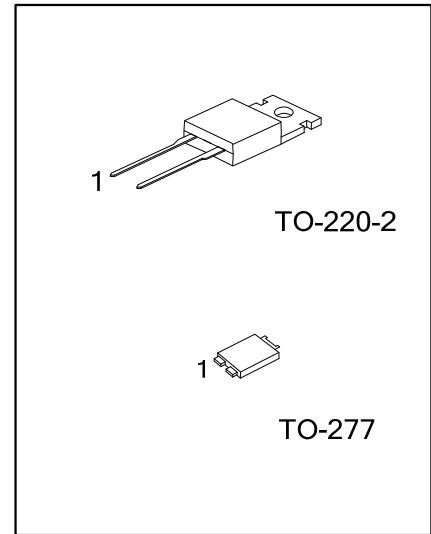
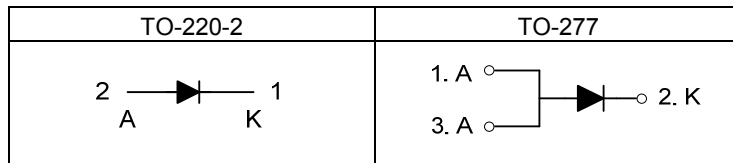
**DIODE****MOS GATED BARRIER  
RECTIFIER****■ DESCRIPTION**

The UTC **MGBR10L50** 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 **MGBR10L50** suitable for free wheeling, high frequency inverters, polarity protection, and low voltage.

**■ FEATURES**

- \* 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 |           |
| MGBR10L50L-TA2-T | MGBR10L50G-TA2-T | TO-220-2 | A              | K | - | Tube      |
| MGBR10L50L-T27-R | MGBR10L50G-T27-R | TO-277   | A              | K | A | Tape Reel |

Note: Pin Assignment: A: Anode, K: Cathode

|  |                                                                                                                 |
|--|-----------------------------------------------------------------------------------------------------------------|
|  | <p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA2: TO-220-2, T27: TO-277</p> <p>(3) L: Lead Free, G: Halogen Free</p> |
|--|-----------------------------------------------------------------------------------------------------------------|

**■ MARKING INFORMATION**

| PACKAGE  | MARKING |
|----------|---------|
| TO-220-2 |         |
| 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>RRM</sub>    | 50       | V    |
| RMS Reverse Voltage                                                                              | V <sub>R(RMS)</sub> | 35       | V    |
| Average Rectified Output Current T <sub>C</sub> =125°C                                           | 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    |
| Repetitive Peak Avalanche Power (1μs, 25°C)                                                      | P <sub>ARM</sub>    | 5000     | W    |
| 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

| PARAMETER           | SYMBOL          | RATINGS     | UNIT |
|---------------------|-----------------|-------------|------|
| Junction to Ambient | θ <sub>JA</sub> | 60          | °C/W |
|                     |                 | 73 (Note 3) |      |
| Junction to Case    | θ <sub>JC</sub> | 2.5         | °C/W |
|                     |                 | 13 (Note 3) |      |

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

| PARAMETER                                                  | SYMBOL             | TEST CONDITIONS                            | MIN | TYP | MAX  | UNIT |
|------------------------------------------------------------|--------------------|--------------------------------------------|-----|-----|------|------|
| Reverse Breakdown Voltage (Note 1)                         | V <sub>(BR)R</sub> | I <sub>R</sub> =0.50mA                     | 50  |     |      | V    |
| Forward Voltage Drop                                       | V <sub>FM</sub>    | I <sub>F</sub> =10A, T <sub>C</sub> =25°C  |     |     | 0.60 | V    |
|                                                            |                    | I <sub>F</sub> =10A, T <sub>C</sub> =125°C |     |     | 0.55 | V    |
| Peak Reverse Current at Rated DC Blocking Voltage (Note 1) | I <sub>RM</sub>    | V <sub>R</sub> =50V, T <sub>C</sub> =25°C  |     |     | 300  | μA   |
|                                                            |                    | V <sub>R</sub> =50V, T <sub>C</sub> =125°C |     |     | 25   | mA   |

Notes: 1. Short duration pulse test used to minimize self-heating effect.

2. Thermal resistance junction to case mounted on heatsink.

3. Mounted on an FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.

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