



## MGBR10L60C

DIODE

### DUAL MOS GATED BARRIER RECTIFIER

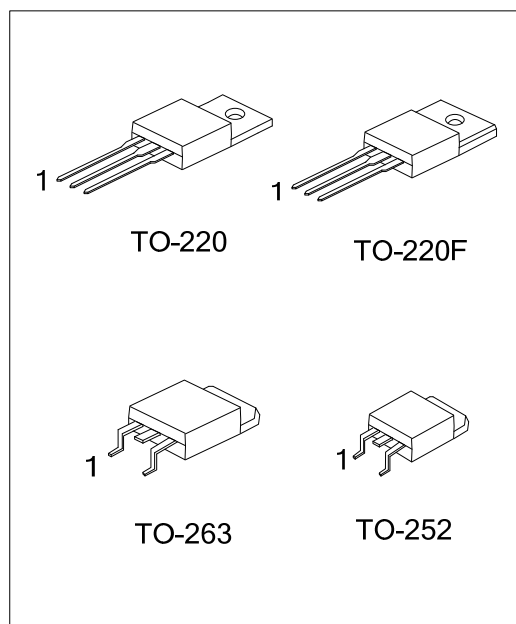
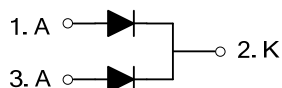
#### DESCRIPTION

The UTC **MGBR10L60C** is a dual mos gated barrier rectifiers, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed, etc.

#### FEATURES

- \* Low forward voltage drop
- \* High switching speed

#### SYMBOL



#### ORDERING INFORMATION

| Ordering Number   |                   | Package | Pin Assignment |   |   | Packing   |
|-------------------|-------------------|---------|----------------|---|---|-----------|
| Lead Free         | Halogen Free      |         | 1              | 2 | 3 |           |
| MGBR10L60CL-TA3-T | MGBR10L60CG-TA3-T | TO-220  | A              | K | A | Tube      |
| MGBR10L60CL-TF3-T | MGBR10L60CG-TF3-T | TO-220F | A              | K | A | Tube      |
| MGBR10L60CL-TN3-R | MGBR10L60CG-TN3-R | TO-252  | A              | K | A | Tape Reel |
| MGBR10L60CL-TQ2-T | MGBR10L60CG-TQ2-T | TO-263  | A              | K | A | Tube      |
| MGBR10L60CL-TQ2-R | MGBR10L60CG-TQ2-R | TO-263  | A              | K | A | Tape Reel |

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

|                                                                                                   |                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>MGBR10L60CL-TA3-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p> | <p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TF3: TO-220F, TN3: TO-252</p> <p>TQ2: TO-263</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p> |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### MARKING

| TO-220 / TO-220F                                                                                                  | TO-252 / TO-263                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <p>UTC</p> <p>MGBR10L60C</p> <p>Lot Code</p> <p>1</p> <p>L: Lead Free</p> <p>G: Halogen Free</p> <p>Data Code</p> | <p>UTC MGBR</p> <p>10L60C</p> <p>Lot Code</p> <p>1</p> <p>L: Lead Free</p> <p>G: Halogen Free</p> <p>Data Code</p> |

### ■ ABSOLUTE MAXIMUM RATINGS (PER LEG) ( $T_A=25^{\circ}\text{C}$ 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                                                                                 |         | $V_{RM}$  | 60       | V                  |
| Working Peak Reverse Voltage                                                                        |         | $V_{RWM}$ | 60       | V                  |
| Peak Repetitive Reverse Voltage                                                                     |         | $V_{RRM}$ | 60       | V                  |
| Average Rectified Forward Current<br>(Rated VR-20KHz Square Wave) – 50%<br>duty cycle               | Per Leg | $I_O$     | 5        | A                  |
|                                                                                                     | Total   |           | 10       | A                  |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single<br>Half Sine-Wave Superimposed on Rated Load |         | $I_{FSM}$ | 120      | A                  |
| Peak Repetitive Reverse Surge Current (2 $\mu$ S-1kHz)                                              |         | $I_{RRM}$ | 2        | 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                 |
|---------------------|----------------|---------------|---------|----------------------|
| Junction to Ambient | TO-220/TO-220F | $\theta_{JA}$ | 62.5    | $^{\circ}\text{C/W}$ |
|                     | TO-252         |               | 110     |                      |
|                     | TO-263         |               | 62.5    |                      |
| Junction to Case    | TO-220         | $\theta_{JC}$ | 2       | $^{\circ}\text{C/W}$ |
|                     | TO-220F        |               | 3.31    |                      |
|                     | TO-252         |               | 2.5     |                      |
|                     | TO-263         |               | 2       |                      |

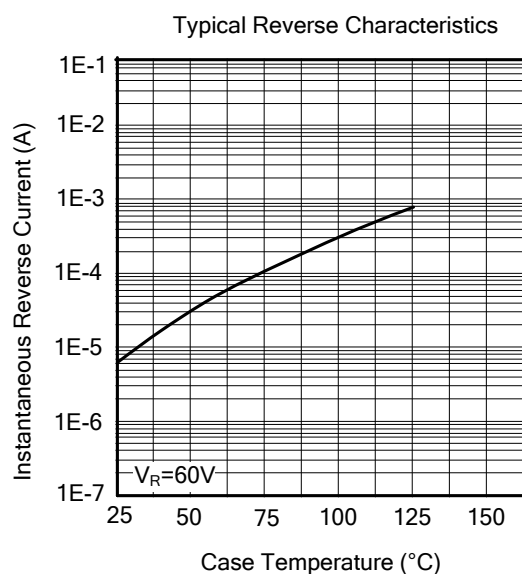
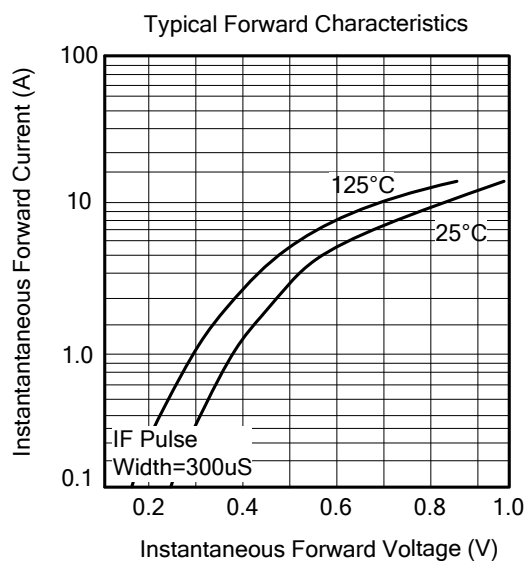
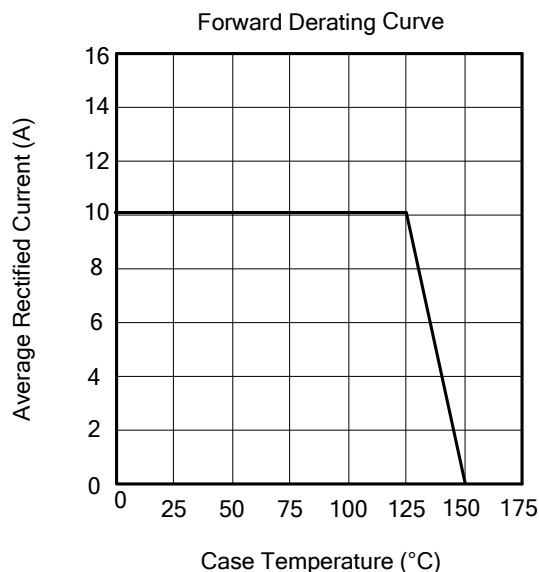
### ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified.)

| PARAMETER                          | SYMBOL      | TEST CONDITIONS                           | MIN | TYP | MAX  | UNIT          |
|------------------------------------|-------------|-------------------------------------------|-----|-----|------|---------------|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | $I_R=0.50\text{mA}$                       | 60  |     |      | V             |
| Forward Voltage Drop               | $V_{FM}$    | $I_F=5\text{A}, T_J=25^{\circ}\text{C}$   |     |     | 0.63 | V             |
|                                    |             | $I_F=5\text{A}, T_J=125^{\circ}\text{C}$  |     |     | 0.58 | V             |
| Leakage Current (Note 1)           | $I_{RM}$    | $V_R=60\text{V}, T_J=25^{\circ}\text{C}$  |     | 50  | 300  | $\mu\text{A}$ |
|                                    |             | $V_R=60\text{V}, T_J=125^{\circ}\text{C}$ |     | 15  | 50   | mA            |

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

2. Thermal resistance junction to case mounted on heatsink.

## ■ TYPICAL CHARACTERISTICS



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