

**MGBR12L30**

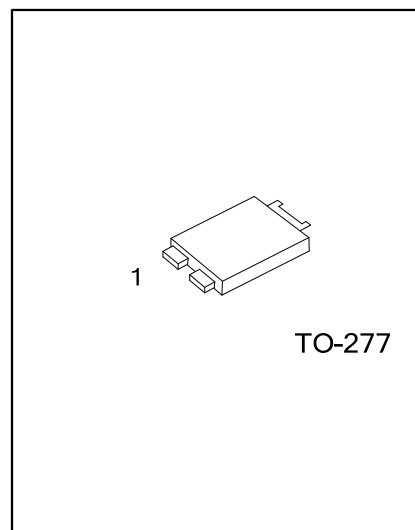
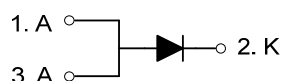
Preliminary

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

The UTC **MGBR12L30** is a surface mount mos gatedbarrier rectifier,it uses UTC's advanced technology to provide customers withlow 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 |           |
| MGBR12L30L-T27-R | MGBR12L30G-T27-R | TO-277  | A              | K | A | Tape Reel |

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

|                                                                                                                                      |                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <p>MGBR12L30L-T27-R</p> <ul style="list-style-type: none"><li>(1)Packing Type</li><li>(2)Package Type</li><li>(3)Lead Free</li></ul> | <ul style="list-style-type: none"><li>(1) R: Tape Reel</li><li>(2) T27: TO-227</li><li>(3) L: Lead Free, G: Halogen Free</li></ul> |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|

**MARKING INFORMATION**

| PACKAGE | MARKING                                                                                           |
|---------|---------------------------------------------------------------------------------------------------|
| TO-277  | <p>Lot Code</p> <p>UTC<br/>MGBR12L30</p> <p>L: Lead Free<br/>G: Halogen Free</p> <p>Data Code</p> |

### ■ 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                                                                                 | $V_{RM}$     | 30       | V                  |
| Working Peak Reverse Voltage                                                                        | $V_{RWM}$    | 30       | V                  |
| Peak Repetitive Reverse Voltage                                                                     | $V_{RRM}$    | 30       | V                  |
| RMS Reverse Voltage                                                                                 | $V_{R(RMS)}$ | 21       | V                  |
| Average Rectified Output Current $T_C=140^{\circ}\text{C}$                                          | $I_O$        | 12       | A                  |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$    | 200      | A                  |
| Repetitive Peak Avalanche Power (1 $\mu\text{s}$ , $25^{\circ}\text{C}$ )                           | $P_{ARM}$    | 5000     | W                  |
| 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 (Note 3)

| PARAMETER           | SYMBOL        | RATINGS | UNIT                 |
|---------------------|---------------|---------|----------------------|
| Junction to Ambient | $\theta_{JA}$ | 73      | $^{\circ}\text{C/W}$ |
| Junction to Case    | $\theta_{JC}$ | 13      | $^{\circ}\text{C/W}$ |

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

| PARAMETER                          | SYMBOL      | TEST CONDITIONS                              | MIN | TYP | MAX  | UNIT          |
|------------------------------------|-------------|----------------------------------------------|-----|-----|------|---------------|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | $I_R=1\text{mA}$                             | 30  |     |      | V             |
| Forward Voltage Drop               | $V_{FM}$    | $I_F=12\text{A}$ , $T_J=25^{\circ}\text{C}$  |     |     | 0.54 | V             |
|                                    |             | $I_F=12\text{A}$ , $T_J=125^{\circ}\text{C}$ |     |     | 0.49 | V             |
| Leakage Current (Note 1)           | $I_{RM}$    | $V_R=30\text{V}$ , $T_J=25^{\circ}\text{C}$  |     | 100 | 500  | $\mu\text{A}$ |
|                                    |             | $V_R=30\text{V}$ , $T_J=125^{\circ}\text{C}$ |     | 12  | 40   | 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 100  $\text{cm}^2$  copper pad area.

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