



## MGBR20S50C

Preliminary

DIODE

### DUAL MOS GATED BARRIER RECTIFIER

#### DESCRIPTION

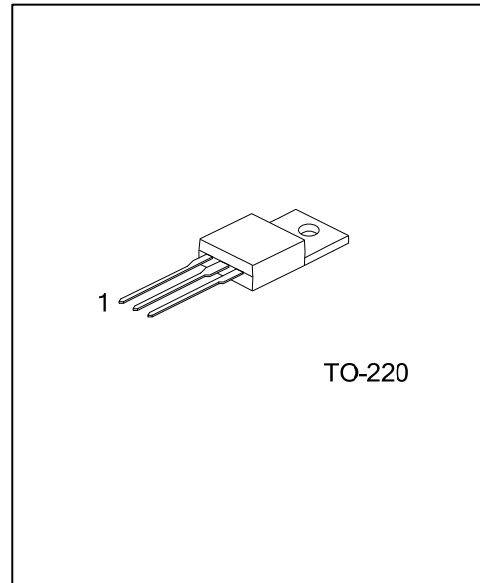
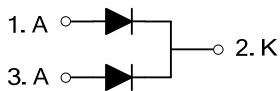
The UTC **MGBR20S50C** is a dual mos gated barrier rectifiers, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed, etc.

The UTC **MGBR20S50C** suitable for supply applications.

#### FEATURES

- \* Super low forward voltage drop
- \* High switching speed

#### SYMBOL



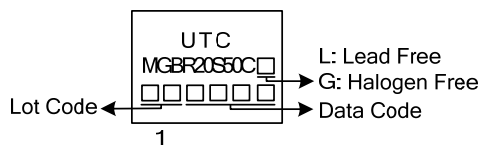
#### ORDERING INFORMATION

| Ordering Number   |                   | Package | Pin Assignment |   |   | Packing |
|-------------------|-------------------|---------|----------------|---|---|---------|
| Lead Free         | Halogen Free      |         | 1              | 2 | 3 |         |
| MGBR20S50CL-TA3-T | MGBR20S50CG-TA3-T | TO-220  | A              | K | A | Tube    |

Note: Pin Assignment: A: Anode K: Cathode

|                   |                  |   |
|-------------------|------------------|---|
| MGBR20S50CL-TA3-T | (1)Packing Type  | (1) T: Tube                                     |
|                   | (2)Package Type  | (2) TA3: TO-220                                 |
|                   | (3)Green Package | (3) L: Lead Free, G: Halogen Free and Lead Free |

#### MARKING



■ ABSOLUTE MAXIMUM RATINGS (PER LEG) (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   |         | 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 Forward Current<br>(Rated VR-20Khz Square Wave) - 50%<br>Duty Cycle | Per Leg | I <sub>O</sub>   | 10       | A    |
|   | Total   |                  | 20       | A    |
| Peak Forward Surge Current - 1/2 60hz   |         | I <sub>FSM</sub> | 180      | A    |
| Peak Repetitive Reverse Surge Current (2uS-1Khz)                                      |         | I <sub>RPM</sub> | 2        | A    |
| Maximum Rate of Voltage Change ( at Rated V <sub>R</sub> )                            |         | dv/dt            | 10000    | V/μS |
| Operating Junction Temperature  |         | T <sub>J</sub>   | -65~+150 | °C   |
| Storage Junction 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 Case | θ <sub>JC</sub> | 2       | °C/W |

■ ELECTRICAL CHARACTERISTICS (PER LEG) (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                    | V <sub>FM</sub>    | I <sub>F</sub> =10A, T <sub>J</sub> =25°C  |     |     | 0.50 | V    |
|                                    |                    | I <sub>F</sub> =10A, T <sub>J</sub> =125°C |     |     | 0.45 | V    |
| Reverse Current (Note 1)           | I <sub>RM</sub>    | V <sub>R</sub> =50V, T <sub>J</sub> =25°C  |     |     | 500  | μA   |
|                                    |                    | V <sub>R</sub> =50V, T <sub>J</sub> =125°C |     |     | 100  | mA   |

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. Thermal resistance junction to case mounted on heatsink.

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