



## MGBR20L120C

Preliminary

DIODE

### DUAL MOS GATED BARRIER RECTIFIER

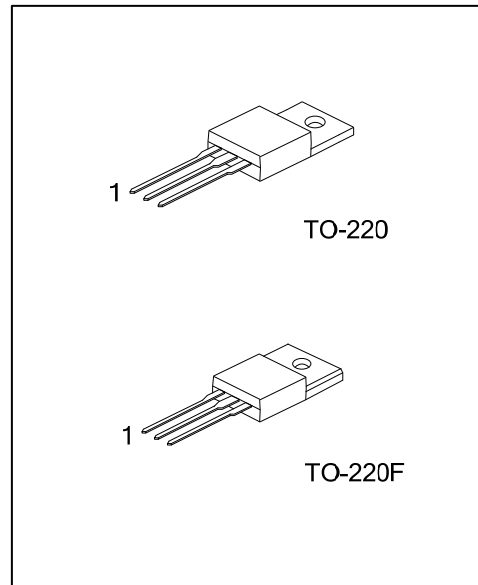
#### DESCRIPTION

The UTC **MGBR20L120C** 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



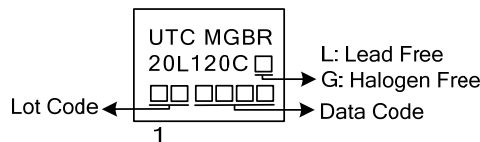
#### ORDERING INFORMATION

| Ordering Number    |                    | Package | Pin Assignment |   |   | Packing |
|--------------------|--------------------|---------|----------------|---|---|---------|
| Lead Free          | Halogen Free       |         | 1              | 2 | 3 |         |
| MGBR20L120CL-TA3-T | MGBR20L120CG-TA3-T | TO-220  | A              | K | A | Tube    |
| MGBR20L120CL-TF3-T | MGBR20L120CG-TF3-T | TO-220F | A              | K | A | Tube    |

Note: Pin Assignment: A: Anode K: Cathode

|                    |                  |   |
|--------------------|------------------|---|
| MGBR20L120CL-TA3-T | (1)Packing Type  | (1) T: Tube                                     |
|                    | (2)Package Type  | (2) TA3: TO-220, TF3: TO-220F                   |
|                    | (3)Green Package | (3) L: Lead Free, G: Halogen Free and Lead Free |

#### MARKING



■ 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  |         | $V_{RM}$  | 120      | V                |
| Working Peak Reverse Voltage   |         | $V_{RWM}$ | 120      | V                |
| Peak Repetitive Reverse Voltage  |         | $V_{RRM}$ | 120      | V                |
| Average Rectified Output Current Per Device  | Per Leg | $I_o$     | 10       | A                |
|  | Total   |           | 20       | A                |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load |         | $I_{FSM}$ | 120      | 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 |         | $\theta_{JA}$ | 62.5    | $^\circ\text{C/W}$ |
| Junction to Case    | TO-220  | $\theta_{JC}$ | 2       | $^\circ\text{C/W}$ |
|                     | TO-220F |               | 3.31    |                    |

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

| PARAMETER                          | SYMBOL      | TEST CONDITIONS                          | MIN | TYP  | MAX  | UNIT          |
|------------------------------------|-------------|--|-----|------|------|---------------|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | $I_R=0.50\text{mA}$                      | 120 |      |      | V             |
| Forward Voltage Drop               | $V_{FM}$    | $I_F=10\text{A}, T_J=25^\circ\text{C}$   |     | 0.81 | 0.90 | V             |
|                                    |             | $I_F=10\text{A}, T_J=125^\circ\text{C}$  |     | 0.64 | 0.72 | V             |
| Leakage Current (Note 1)           | $I_{RM}$    | $V_R=120\text{V}, T_J=25^\circ\text{C}$  |     |      | 200  | $\mu\text{A}$ |
|                                    |             | $V_R=120\text{V}, T_J=125^\circ\text{C}$ |     | 14   | 40   | 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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