



## MBR40100C

Preliminary

DIODE

### 40A SCHOTTKY BARRIER RECTIFIER

#### DESCRIPTION

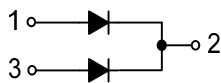
The UTC **MBR40100C** is a 40A schottky barrier rectifier, it uses UTC's advanced technology to provide the customers with high surge capability, high efficiency, high current capability, low power loss and low forward voltage drop, etc.

The UTC **MBR40100C** is suitable for free wheeling and polarity protection, etc.

#### FEATURES

- \* Low Reverse Current
- \* Low Stored Charge, Majority Carrier Conduction
- \* Low Power Loss/High Efficiency
- \* Highly Stable Oxide Passivated Junction

#### SYMBOL



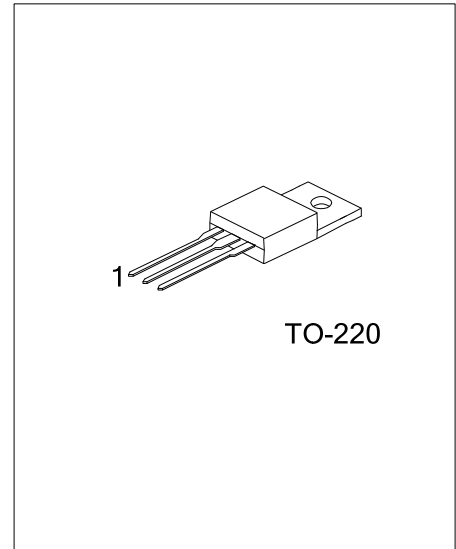
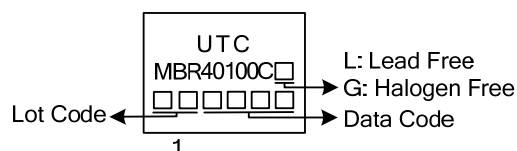
#### ORDERING INFORMATION

| Ordering Number  |                  | Package | Pin Assignment |   |   | Packing |
|------------------|------------------|---------|----------------|---|---|---------|
| Lead Free        | Halogen Free     |         | 1              | 2 | 3 |         |
| MBR40100CL-TA3-T | MBR40100CG-TA3-T | TO-220  | A              | K | A | Tube    |

Note: Pin Assignment: A: Anode K: Cathode

|                  |                                                        |                                                                                   |
|------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| MBR40100CL-TA3-T | (1)Packing Type<br>(2)Package Type<br>(3)Green Package | (1) T: Tube<br>(2) TA3: TO-220<br>(3) L: Lead Free, G: Halogen Free and Lead Free |
|------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------|

#### MARKING



### ■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

Ratings at  $25^{\circ}\text{C}$  ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| PARAMETER                                                                         |         | SYMBOL    | RATINGS       | UNIT               |
|-----------------------------------------------------------------------------------|---------|-----------|---------------|--------------------|
| Repetitive Peak Reverse Voltage                                                   |         | $V_{RRM}$ | 100           | V                  |
| Working Peak Reverse Voltage                                                      |         | $V_{RWM}$ | 100           | V                  |
| Maximum RMS Reverse Voltage                                                       |         | $V_{RMS}$ | 70            | V                  |
| DC Blocking Voltage                                                               |         | $V_R$     | 100           | V                  |
| Average Rectified Output Current<br>(Note 2) $T_C = 105^{\circ}\text{C}$          | Per Leg | $I_O$     | 20            | A                  |
|                                                                                   | Total   |           | 40            |                    |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load |         | $I_{FSM}$ | 170           | A                  |
| Junction Temperature                                                              |         | $T_J$     | $-55\sim+150$ | $^{\circ}\text{C}$ |
| Storage Temperature                                                               |         | $T_{STG}$ | $-55\sim+150$ | $^{\circ}\text{C}$ |

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 DATA

| PARAMETER           | SYMBOL        | RATINGS | UNIT                        |
|---------------------|---------------|---------|-----------------------------|
| Junction to Ambient | $\theta_{JA}$ | 62.5    | $^{\circ}\text{C}/\text{W}$ |
| Junction to Case    | $\theta_{JC}$ | 2       | $^{\circ}\text{C}/\text{W}$ |

### ■ ELECTRICAL CHARACTERISTICS (Per Leg) (Note 2) ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                          | SYMBOL | TEST CONDITIONS                              | MIN | TYP | MAX  | UNIT          |
|------------------------------------|--------|----------------------------------------------|-----|-----|------|---------------|
| Instantaneous Forward Voltage Drop | $V_F$  | $I_F=20\text{A}$ , $T_C=25^{\circ}\text{C}$  |     |     | 0.9  | V             |
|                                    |        | $I_F=20\text{A}$ , $T_C=125^{\circ}\text{C}$ |     |     | 0.8  | V             |
| Instantaneous Reverse Current      | $I_R$  | Rated DC Voltage, $T_C=25^{\circ}\text{C}$   |     |     | 1000 | $\mu\text{A}$ |
|                                    |        | Rated DC Voltage, $T_C=125^{\circ}\text{C}$  |     |     | 100  | mA            |

Notes: 1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC

2. Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

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