



MBR2040C

Preliminary

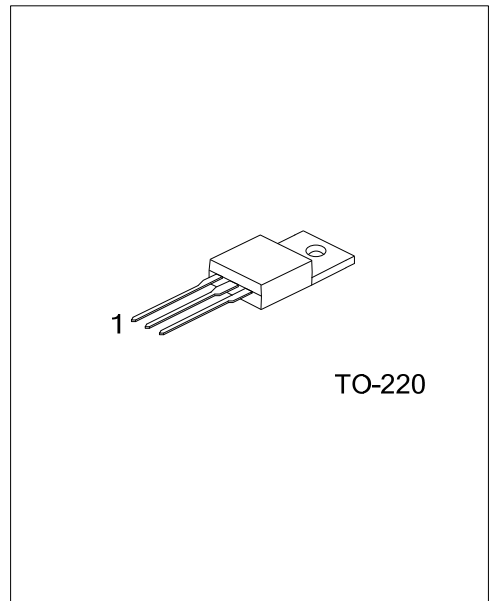
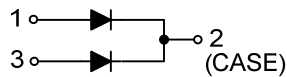
DIODE

**SCHOTTKY BARRIER
RECTIFIER DIODES**

■ **FEATURES**

- * Guard Ring for Transient Protection
- * Low Power Loss, High Efficiency
- * High Surge Capability
- * High Current Capability and Low Forward Voltage Drop

■ **SYMBOL**



■ **ORDERING INFORMATION**

| Order Number | | Package | Pin Assignment | | | Packing |
|-----------------|-----------------|---------|----------------|---|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MBR2040CL-TA3-T | MBR2040CG-TA3-T | TO-220 | A | K | A | Tube |

Note: Pin Assignment: A: Anode K: Cathode

| | |
|------------------------|--|
| <p>MBR2040CL-TA3-T</p> | <p>(1) T: Tube</p> <p>(2) TA3: TO-220</p> <p>(3) L: Lead Free, G: Halogen Free</p> |
|------------------------|--|

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

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|---|---------|--------------|------------|--------------------|
| Maximum Repetitive Peak Reverse Voltage | | V_{RRM} | 40 | V |
| Maximum non-repetitive Peak Reverse Voltage | | V_{RM} | 40 | V |
| Maximum DC Blocking Voltage | | V_R | 40 | V |
| Maximum PMS Reverse Voltage | | $V_{R(RMS)}$ | 28 | V |
| Average Rectified Output Current ($T_C=125^{\circ}\text{C}$) | Per Leg | I_O | 10 | A |
| | Total | | 20 | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half-Sine-Wave | | I_{FSM} | 150 | A |
| Typical Junction Capacitance (Note 2) | | C_J | 650 | pF |
| Operating Temperature | | T_J | -55 ~ +150 | $^{\circ}\text{C}$ |
| Storage Temperature | | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

Notes: 1. Thermal resistance junction to case mounted heat sink.
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|----------------------|
| Junction to Ambient | θ_{JA} | 60 | $^{\circ}\text{C/W}$ |
| Junction to Case | θ_{JC} | 2 | $^{\circ}\text{C/W}$ |

■ ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|--------|---|-----|-----|------|------|
| Instantaneous Forward Voltage Drop (Note 3) | V_F | $I_F=10\text{A}, T_C=25^{\circ}\text{C}$ | | | 0.70 | V |
| | | $I_F=10\text{A}, T_C=125^{\circ}\text{C}$ | | | 0.57 | |
| | | $I_F=20\text{A}, T_C=25^{\circ}\text{C}$ | | | 0.84 | |
| | | $I_F=20\text{A}, T_C=125^{\circ}\text{C}$ | | | 0.72 | |
| Instantaneous Reverse Current (Note 3) | I_R | Rated DC Voltage, $T_C=25^{\circ}\text{C}$ | | | 0.1 | mA |
| | | Rated DC Voltage, $T_C=125^{\circ}\text{C}$ | | | 15 | |

Notes: 1. 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.
 2. 2.0 μs Pulse Width, $f = 1.0\text{KHz}$.
 3. Pulse Test: Pulse Width=300 μs , Duty Cycle $\leq 2.0\%$.
 4. Applied $V_R = 4.0\text{V}$ and $f = 1.0\text{MHz}$.

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