



MGBR15V45

Preliminary

DIODE

**MOS GATED BARRIER
RECTIFIER**

■ DESCRIPTION

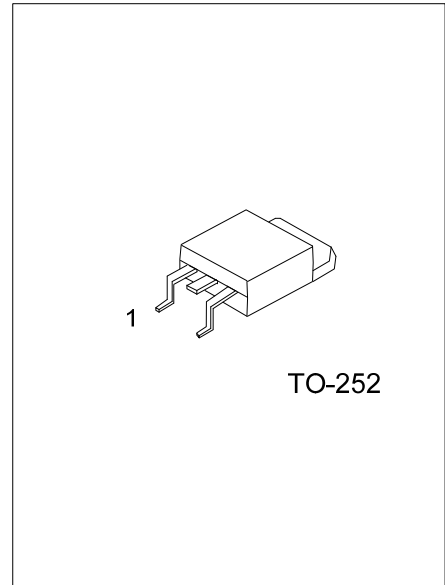
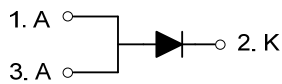
The UTC **MGBR15V45** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high current capability, etc.

The UTC **MGBR15V45** suitable for free wheeling, high frequency inverters, polarity protection, and low voltage.

■ FEATURES

- * Very low forward voltage drop
- * High current capability
- * High surge capability
- * High efficiency

■ SYMBOL



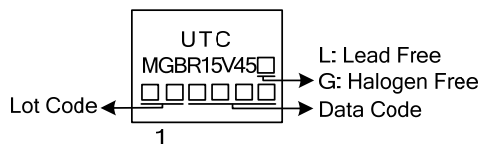
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|------------------|------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MGBR15V45L-TN3-R | MGBR15V45G-TN3-R | TO-252 | A | K | A | Tape Reel |

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

| | |
|--|---|
| <p>MGBR15V45L-TN3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p> | <p>(1) R: Tape Reel</p> <p>(2) TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free</p> |
|--|---|

■ MARKING



■ 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 (Note 1) | V_{RM} | 45 | V |
| Working Peak Reverse Voltage | V_{RWM} | 45 | V |
| Peak Repetitive Reverse Voltage | V_{RRM} | 45 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 32 | V |
| Average Rectified Output Current | I_O | 15 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 180 | 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

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|--------------------|
| Junction to Ambient | θ_{JA} | 110 | $^\circ\text{C/W}$ |
| Junction to Case | θ_{JC} | 2.5 | $^\circ\text{C/W}$ |

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

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|-------------|---|-----|-----|------|---------------|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | $I_R=0.50\text{mA}$ | 45 | | | V |
| Forward Voltage Drop | V_{FM} | $I_F=15\text{A}, T_C=25^\circ\text{C}$ | | | 0.55 | V |
| | | $I_F=15\text{A}, T_C=125^\circ\text{C}$ | | | 0.50 | V |
| Peak Reverse Current at Rated DC Blocking Voltage (Note 1) | I_{RM} | $V_R=45\text{V}, T_C=25^\circ\text{C}$ | | | 500 | μA |
| | | $V_R=45\text{V}, T_C=125^\circ\text{C}$ | | 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 100cm^2 copper pad area.

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