



MGBR5S40

Preliminary

DIODE

MOS GATED BARRIER RECTIFIER

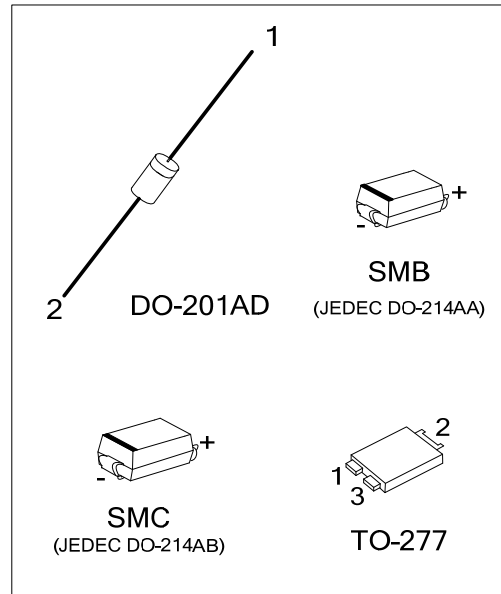
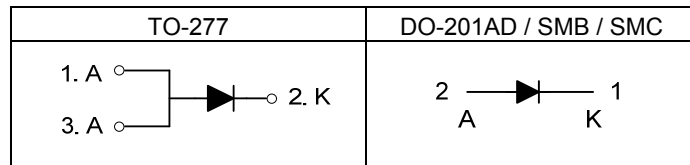
■ DESCRIPTION

The UTC **MGBR5S40** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed, etc.

■ FEATURES

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

■ SYMBOL



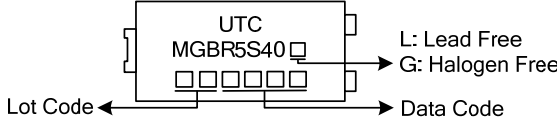
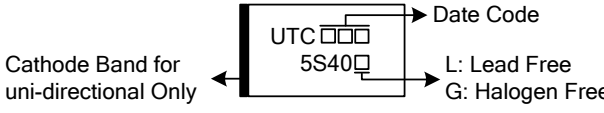
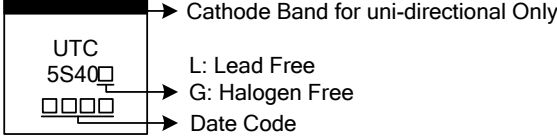
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|------------------|------------------|----------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MGBR5S40L-T27-R | MGBR5S40G-T27-R | TO-277 | A | K | A | Tape Reel |
| MGBR5S40L-SMB-R | MGBR5S40G-SMB-R | SMB | K | A | - | Tape Reel |
| MGBR5S40L-SMC-R | MGBR5S40G-SMC-R | SMC | K | A | - | Tape Reel |
| MGBR5S40L-Z21D-B | MGBR5S40G-Z21D-B | DO-201AD | K | A | - | Tape Box |

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

| | |
|--|---|
| <p>MGBR5S40L-T27-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package | <ul style="list-style-type: none"> (1) R: Tape Reel (2) T27: TO-277, SMB: SMB, SMC: SMC Z21D: DO-201AD (3) L: Lead Free, G: Halogen Free and Lead Free |
|--|---|

■ MARKING

| PACKAGE | MARKING |
|-----------|---|
| TO-277 |  <p>Diagram showing a TO-277 package with markings: UTC, MGBR5S40, Lot Code (four squares), and Data Code (four squares). Legend: L: Lead Free, G: Halogen Free.</p> |
| SMB / SMC |  <p>Diagram showing an SMB / SMC package with markings: UTC, 5S40, Cathode Band for uni-directional Only (black band), and Date Code (four squares). Legend: L: Lead Free, G: Halogen Free.</p> |
| DO-201AD |  <p>Diagram showing a DO-201AD package with markings: UTC, 5S40, Cathode Band for uni-directional Only (black band), L: Lead Free, G: Halogen Free, and Date Code (four squares).</p> |

■ ABSOLUTE MAXIMUM RATINGS (T_A=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 _{RM} | 40 | V |
| Working Peak Reverse Voltage | V _{RWM} | 40 | V |
| Peak Repetitive Reverse Voltage | V _{RRM} | 40 | V |
| Average Rectified Output Current | T _C =140°C I _O | 5 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 150 | A |
| Operating Junction Temperature | T _J | -65 ~ +150 | °C |
| Storage Temperature | T _{STG} | -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 (PER LEG)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------------|-----------------------------|-----------|------|
| Typical Thermal Resistance | TO-277 θ _{JA} | 72 (Note) | °C/W |
| | DO-201AD θ _{JC} | 20 | °C/W |
| | SMB/SMC θ _{JL} | 20 | °C/W |

Note: FR-4 PCB, 2 oz Copper. Minimum recommended pad layout.

■ ELECTRICAL CHARACTERISTICS (PER LEG) (T_A=25°C, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|-------------------------------|--------------------|--|-----|------|------|------|
| Reverse Breakdown Voltage | V _{(BR)R} | I _R =0.5mA | 40 | | | V |
| Instantaneous Forward Voltage | V _{FM} | I _F =5A, T _J =25°C | | 0.46 | 0.52 | V |
| | | I _F =5A, T _J =125°C | | 0.42 | 0.48 | V |
| Leakage Current | I _{RM} | V _R =40V, T _J =25°C | | | 500 | μA |
| | | V _R =40V, T _J =125°C | | | 50 | mA |

Note: Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

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