

## TO-263-2L Plastic-Encapsulate Diode

SCHOTTKY BARRIER RECTIFIER

### Features:

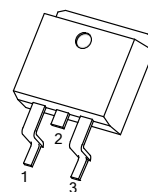
- Low Power Loss, High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop

### MAIN CHARACTERISTICS

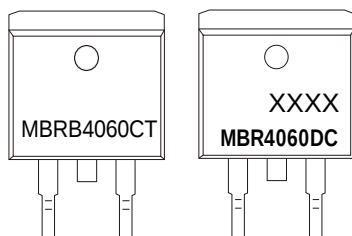
|              |                     |
|--------------|---------------------|
| $I_O$        | 40 ( 2×20 ) A       |
| $V_{RRM}$    | 60 V                |
| $T_j$        | 150 °C              |
| $V_{F(typ)}$ | 0.55V ( @Ta=125°C ) |

TO-263-2L

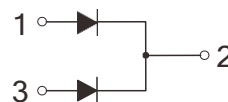
1. ANODE  
2. CATHODE  
3. ANODE



### MARKING



XXXX = Code  
MBR4060DC = Device code



### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )

| Symbol          | Parameter                                                         | Value    | Unit               |
|-----------------|-------------------------------------------------------------------|----------|--------------------|
| $V_{RRM}$       | Peak repetitive reverse voltage                                   | 60       | V                  |
| $V_{RWM}$       | Working peak reverse voltage                                      |          |                    |
| $V_R$           | DC blocking voltage                                               |          |                    |
| $V_{R(RMS)}$    | RMS reverse voltage                                               | 42       | V                  |
| $I_O$           | Average rectified output current                                  | 40       | A                  |
| $I_{FSM}$       | Non-Repetitive peak forward surge current (8.3ms half sine wave)  | 250      | A                  |
| $R_{\theta JC}$ | Thermal resistance from junction to case , $T_c=25^\circ\text{C}$ | 2.0      | $^\circ\text{C/W}$ |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient                       | 62.5     | $^\circ\text{C/W}$ |
| $T_j$           | Junction temperature                                              | 150      | $^\circ\text{C}$   |
| $T_{stg}$       | Storage temperature                                               | -55~+150 | $^\circ\text{C}$   |

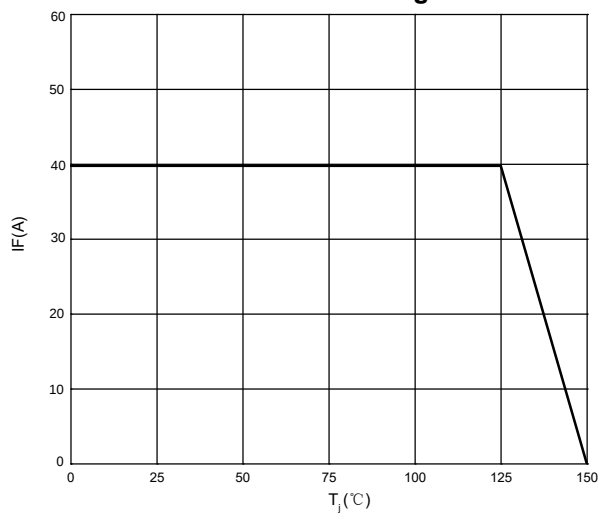
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified )

| Parameter       | Symbol     | Test conditions  | Min                     | Typ  | Max  | Unit          |
|-----------------|------------|------------------|-------------------------|------|------|---------------|
| Reverse voltage | $V_{(BR)}$ | $I_R=1\text{mA}$ | 60                      |      |      | V             |
| Reverse current | $I_R$      | $V_R=60\text{V}$ | $T_j=25^\circ\text{C}$  | 60   | 200  | $\mu\text{A}$ |
|                 |            |                  | $T_j=125^\circ\text{C}$ | 25   |      | mA            |
| Forward voltage | $V_F$      | $I_F=10\text{A}$ | $T_j=25^\circ\text{C}$  | 0.50 |      | V             |
|                 |            |                  | $T_j=125^\circ\text{C}$ | 0.43 |      | V             |
|                 |            | $I_F=20\text{A}$ | $T_j=25^\circ\text{C}$  | 0.62 | 0.70 | V             |
|                 |            |                  | $T_j=125^\circ\text{C}$ | 0.55 |      | V             |

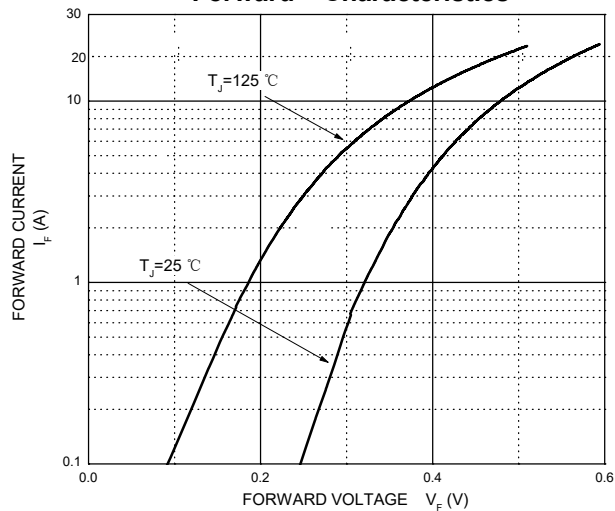
\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

## Typical Characteristics

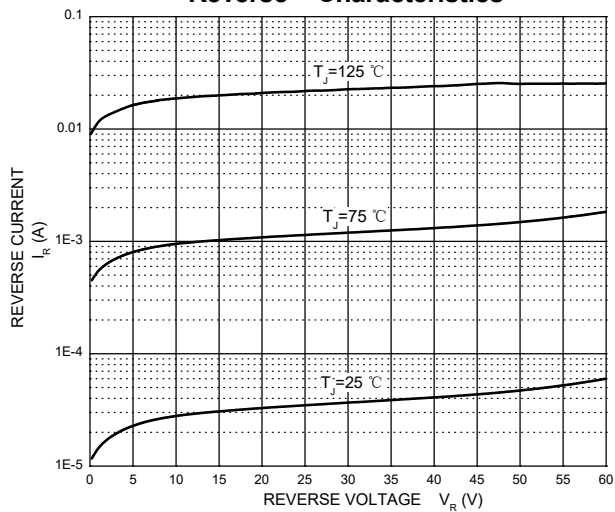
**Forward Current Derating Curve**



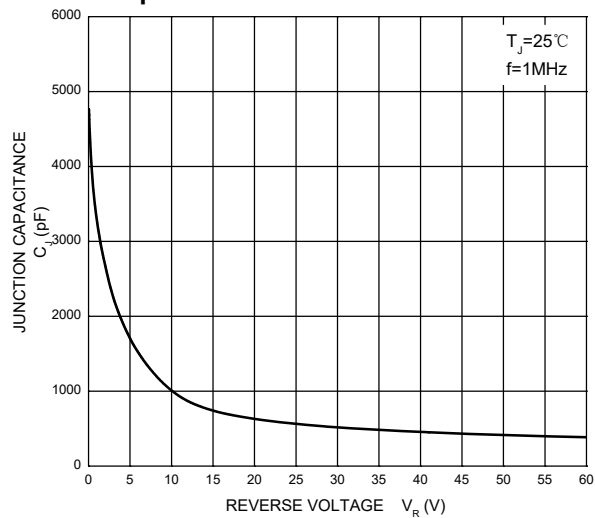
**Forward Characteristics**



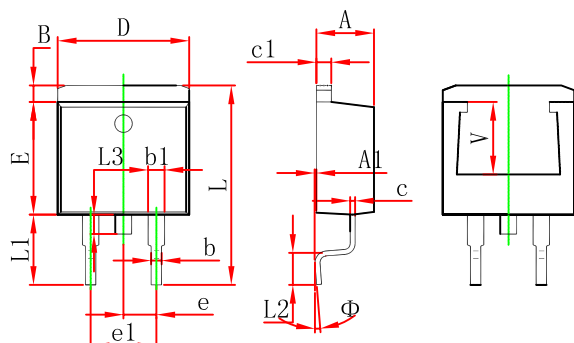
**Reverse Characteristics**



**Capacitance Characteristics Per Diode**

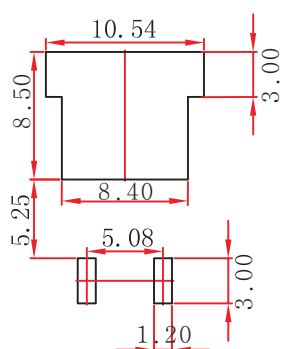


## TO-263-2L Package Outline Dimensions



| Symbol | Dimensions in Millimeters |        | Dimensions in Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 4.470                     | 4.670  | 0.176                | 0.184 |
| A1     | 0.000                     | 0.150  | 0.000                | 0.006 |
| B      | 1.120                     | 1.420  | 0.044                | 0.056 |
| b      | 0.710                     | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.310                     | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| D      | 10.010                    | 10.310 | 0.394                | 0.406 |
| E      | 8.500                     | 8.900  | 0.335                | 0.350 |
| e      | 2.540 TYP.                |        | 0.100 TYP.           |       |
| e1     | 4.980                     | 5.180  | 0.196                | 0.204 |
| L      | 14.940                    | 15.500 | 0.588                | 0.610 |
| L1     | 4.950                     | 5.450  | 0.195                | 0.215 |
| L2     | 2.340                     | 2.740  | 0.092                | 0.108 |
| L3     | 1.300                     | 1.700  | 0.051                | 0.067 |
| Φ      | 0°                        | 8°     | 0°                   | 8°    |
| V      | 5.600 REF.                |        | 0.220 REF.           |       |

## TO-263-2L Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.