



# MBR3045C-ST

## SCHOTTKY BARRIER DIODE

### APPLICATIONS

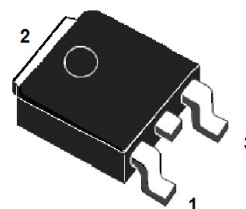
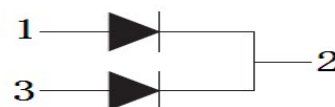
- High frequency switch power supply
- Free wheeling diodes, polarity protection applications

### FEATURES

- Common cathode structure
- Low power loss, high efficiency
- High Operating Junction Temperature
- Guard ring for overvoltage protection, High reliability
- RoHS product

### MAIN CHARACTERISTICS

|              |                               |
|--------------|-------------------------------|
| $I_{F(AV)}$  | 30 (2×15) A                   |
| $V_{RRM}$    | 45 V                          |
| $T_j$        | 150 °C                        |
| $V_{F(max)}$ | 0.54V (@ $T_j=125^{\circ}C$ ) |



TO-263

### ABSOLUTE RATINGS ( $T_c=25^{\circ}C$ )

| Parameter                                                                           |                    |            | Symbol      | Value    | Unit        |
|-------------------------------------------------------------------------------------|--------------------|------------|-------------|----------|-------------|
| Repetitive peak reverse voltage                                                     |                    |            | $V_{RRM}$   | 45       | V           |
| Maximum DC blocking voltage                                                         |                    |            | $V_{DC}$    | 45       | V           |
| Average forward current                                                             | $T_C=125^{\circ}C$ | per device | $I_{F(AV)}$ | 30       | A           |
|                                                                                     |                    | per diode  |             | 15       |             |
| Surge non repetitive forward current<br>8.3 ms single half-sine-wave (JEDEC Method) |                    |            | $I_{FSM}$   | 275      | A           |
| Maximum junction temperature                                                        |                    |            | $T_j$       | 150      | $^{\circ}C$ |
| Storage temperature range                                                           |                    |            | $T_{STG}$   | -40~+150 | $^{\circ}C$ |



## MBR3045C-ST

### ELECTRICAL CHARACTERISTICS

| Parameter | Tests conditions            |                    | Value(min) | Value(typ) | Value(max) | Unit          |
|-----------|-----------------------------|--------------------|------------|------------|------------|---------------|
| $I_R$     | $T_j = 25^{\circ}\text{C}$  | $V_R = V_{RRM}$    |            |            | 50         | $\mu\text{A}$ |
|           | $T_j = 125^{\circ}\text{C}$ |                    |            |            | 40         | $\text{mA}$   |
| $V_F$     | $T_j = 25^{\circ}\text{C}$  | $I_F = 15\text{A}$ |            |            | 0.58       | $\text{V}$    |
|           | $T_j = 125^{\circ}\text{C}$ |                    |            | 0.50       | 0.54       | $\text{V}$    |

### THERMAL CHARACTERISTICS

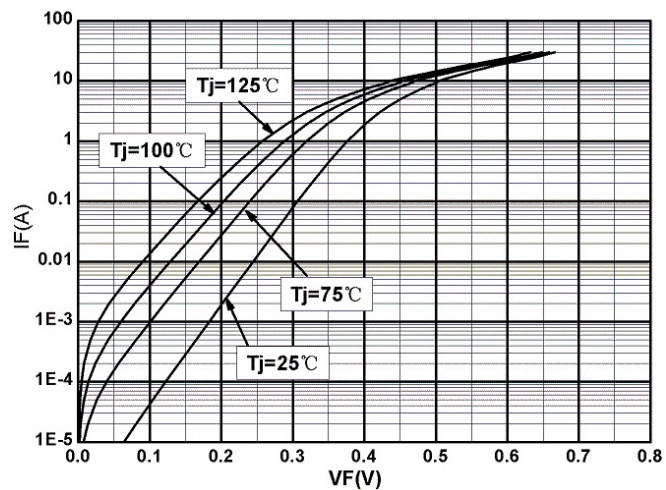
| Parameter                                |        | Symbol        | Value(min) | Value(max) | Unit                        |
|------------------------------------------|--------|---------------|------------|------------|-----------------------------|
| Thermal resistance from junction to case | TO-263 | $R_{th(j-c)}$ |            | 2.2        | $^{\circ}\text{C}/\text{W}$ |



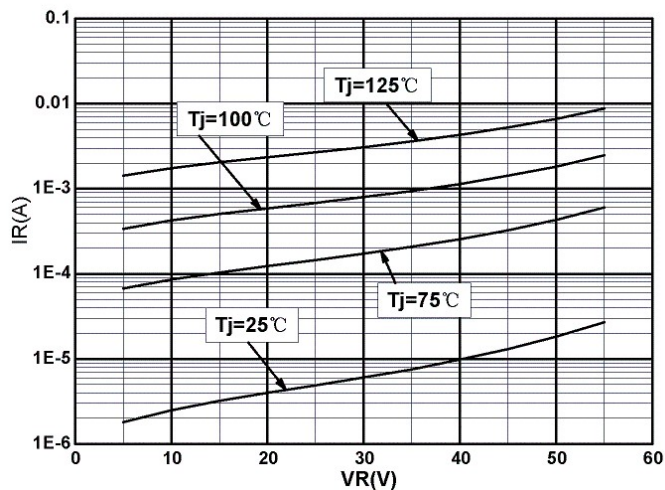
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## ELECTRICAL CHARACTERISTICS (curves)

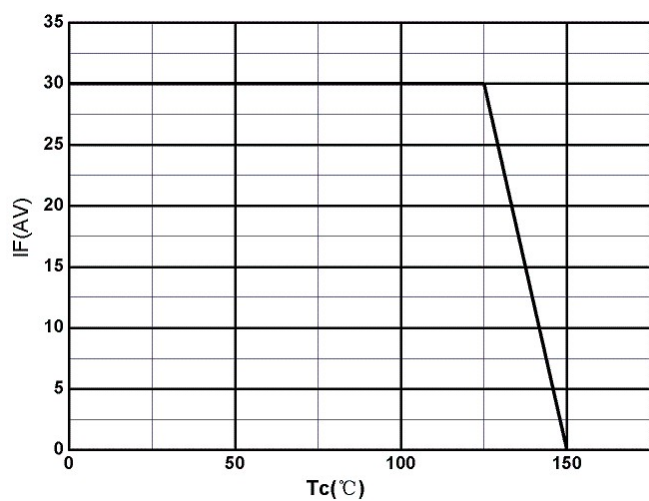
$I_F$  vs  $V_F$



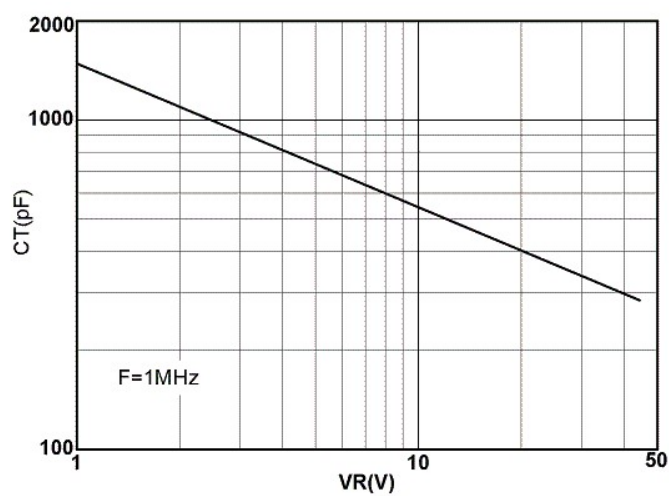
$I_R$  vs  $V_R$



$I_F(\text{AV})$  vs  $T_C$



$C_T$  vs  $V_R$



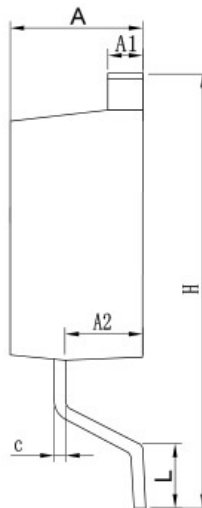
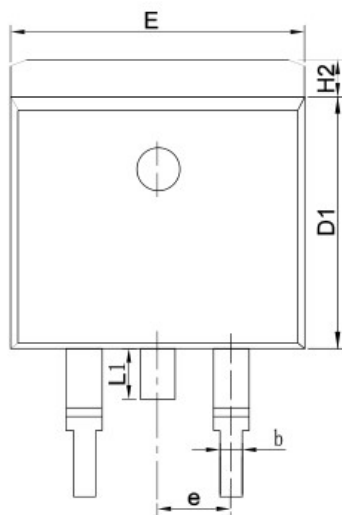


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## PACKAGE MECHANICAL DATA

Unit : mm

T0-263



| SYMBOL | MM      |       |
|--------|---------|-------|
|        | MIN     | MAX   |
| A      | 4.30    | 4.80  |
| A1     | 1.12    | 1.42  |
| A2     | 2.54    | 2.84  |
| b      | 0.67    | 1.00  |
| c      | 0.29    | 0.52  |
| D1     | 8.40    | 9.00  |
| E      | 9.80    | 10.46 |
| e      | 2.54BSC |       |
| H      | 14.00   | 16.00 |
| H2     | 1.12    | 1.45  |
| L      | 1.50    | 3.10  |
| L1     | 1.45    | 1.70  |