

# MBRF4045CT

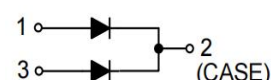
## SCHOTTKY BARRIER RECTIFIER

### DESCRIPTION

The MBRF4045CT is a 40A schottky barrier rectifier, it uses our advanced technology to provide the customers with high surge capability, high efficiency, high current capability, low power loss and low forward voltage drop, etc. The MBRF4045CT is suitable for free wheeling and polarity protection, etc.

### FEATURE

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



### ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

| SYMBOL  | PARAMETER                                                        |         | VALUE    | UNIT |
|---------|------------------------------------------------------------------|---------|----------|------|
| VRRM    | Peak repetitive reverse voltage                                  |         | 45       | V    |
| VRWM    | Working peak reverse voltage                                     |         |          | V    |
| VR      | DC blocking voltage                                              |         |          | V    |
| VR(RMS) | RMS reverse voltage                                              |         | 31.5     | V    |
| IO      | Average rectified output current@TC=105°C                        | Per Leg | 20       | A    |
|         |                                                                  | Total   | 40       |      |
| IFSM    | Non-Repetitive peak forward surge current( 8.3ms half sine wave) |         | 300*2    | A    |
| Tj      | Junction temperature                                             |         | 150      | °C   |
| Tstg    | Storage temperature                                              |         | -55~+150 | °C   |
| RθJA    | Thermal Resistance fromJunction to Ambient                       |         | 62.5     | °C/W |
| RθJC    | Thermal Resistance From Junction To Case                         |         | 2        | °C/W |

Notes: 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.



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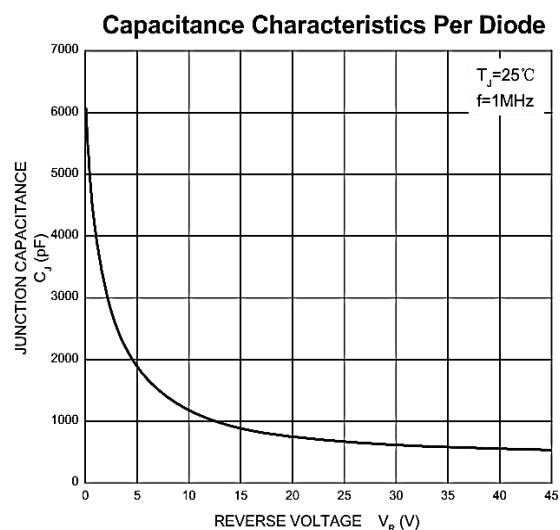
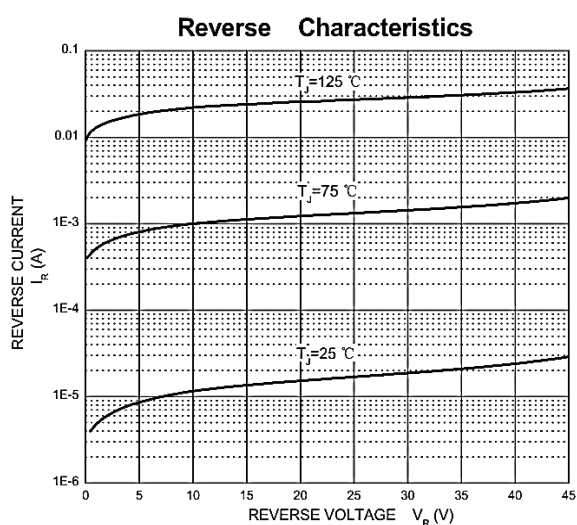
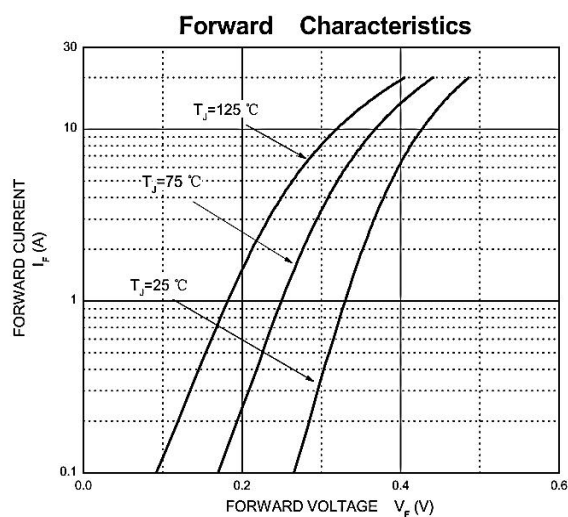
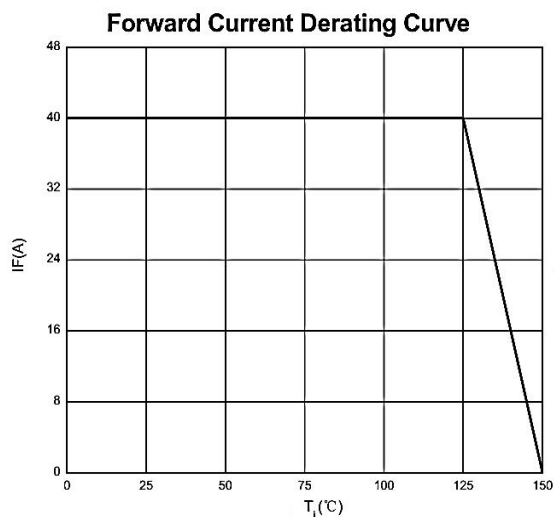
### ■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

| PARAMETER       | SYMBOL | TEST CONDITIONS |             | MIN | TYP | MAX  | UNIT |
|-----------------|--------|-----------------|-------------|-----|-----|------|------|
| Reverse voltage | V(BR)  | I R=0.2mA       |             | 45  |     |      | V    |
| Reverse current | I R    | V R=60V         | T j =25 °C  |     |     | 200  | uA   |
|                 |        |                 | T j =125 °C |     | 37  |      | mA   |
| Forward voltage | V F    | I F=20A         | T j =25 °C  |     |     | 0.75 | V    |

Notes: 1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC

2.Pulse test: pulse width ≤300μs, duty cycles≤ 2.0%.

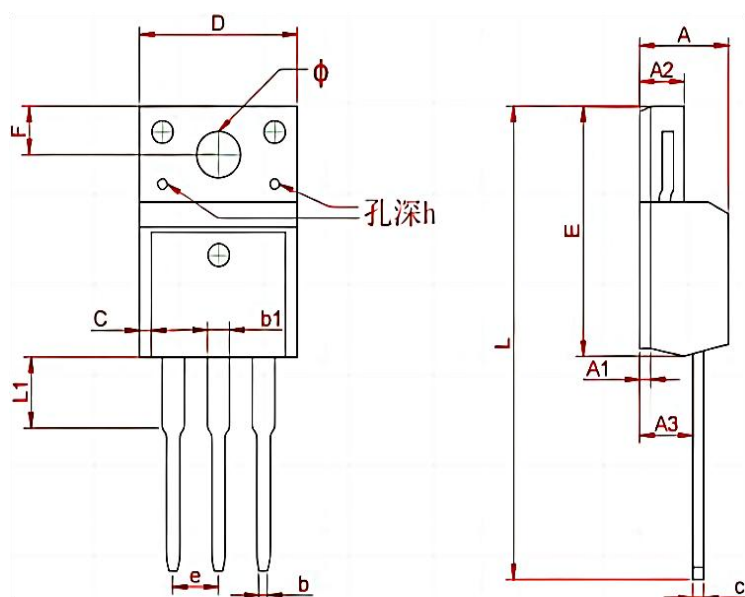
### ■ TYPICAL CHARACTERISTICS



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### TO - 220F Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        |
|--------|---------------------------|--------|
|        | Min                       | Max    |
| A      | 4.300                     | 4.750  |
| A1     | 0.7 REF                   |        |
| A2     | 2.300                     | 2.850  |
| A3     | 2.500                     | 2.900  |
| b      | 0.380                     | 0.420  |
| b1     | 1.220                     | 1.280  |
| C      | 1.08                      | 1.200  |
| c      | 0.480                     | 0.520  |
| D      | 10.15                     | 10.450 |
| E      | 15.700                    | 15.950 |
| e      | 2.574 TYP                 |        |
| F      | 3.470 REF                 |        |
| y      | 3.200 REF                 |        |
| h      | 0.000                     | 0.800  |
| L      | 28.780                    | 28.900 |
| L1     | 2.990                     | 3.100  |

### TO-220F Packing information

| Package version | Tube dimensions<br>LxWxH<br>(mm) | Per Tube<br>(pcs) | Tube per box | Inner box dimensions<br>LxWxH<br>(mm) | PCS/<br>Inner box | Outer box dimensions<br>LxWxH(mm) | PCS/<br>Outer box |
|-----------------|----------------------------------|-------------------|--------------|---------------------------------------|-------------------|-----------------------------------|-------------------|
| TO-220F         | 530*32*7                         | 50                | 20           | 580*155*50                            | 1000              | 602*277*188                       | 5000              |