



## MBR3045CT

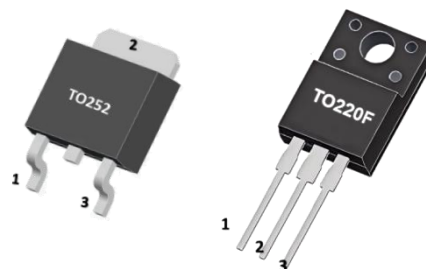
## SCHOTTKY BARRIER RECTIFIER

### APPLICATIONS

The MBR3045CT meet the ROHS and Green Product requirement with full function reliability approved.

### FEATURE

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



1. ANODE  
2. CATHODE  
3. ANODE

### MARKING

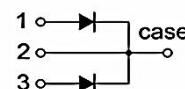


: HY LOGO

MBR3045CT=Device Code

XXXX=Date Code

Solid Dot=Green molding compound



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

| SYMBOL                                                                                                                                                                                                  | PARAMETER                                                        |         | VALUE    | UNIT |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------|----------|------|
| <b>V<sub>RRM</sub></b>                                                                                                                                                                                  | Peak repetitive reverse voltage                                  |         | 45       | V    |
| <b>V<sub>RWM</sub></b>                                                                                                                                                                                  | Working peak reverse voltage                                     |         |          |      |
| <b>V<sub>R</sub></b>                                                                                                                                                                                    | DC blocking voltage                                              |         |          |      |
| <b>V<sub>R(RMS)</sub></b>                                                                                                                                                                               | RMS reverse voltage                                              |         | 31.5     | V    |
| <b>I<sub>o</sub></b>                                                                                                                                                                                    | Average rectified output current                                 |         | 30(15*2) | A    |
| <b>I<sub>FSM</sub></b>                                                                                                                                                                                  | Non-Repetitive peak forward surge current (8.3ms half sine wave) |         | 200*2    | A    |
| <b>R<sub>θJc</sub></b>                                                                                                                                                                                  | Thermal resistance from junction to case , Tc=25 °C              | TO-252  | 2.0      | °C/W |
|                                                                                                                                                                                                         |                                                                  | TO-220F | 3.0      |      |
| <b>R<sub>θJA</sub></b>                                                                                                                                                                                  | Thermal resistance from junction to ambient                      | TO-252  | 62.5     | °C/W |
|                                                                                                                                                                                                         |                                                                  | TO-220F | 62.5     |      |
| <b>T<sub>j</sub></b>                                                                                                                                                                                    | Junction temperature                                             |         | 150      | °C   |
| <b>T<sub>stg</sub></b>                                                                                                                                                                                  | Storage temperature                                              |         | -55~+150 | °C   |
| 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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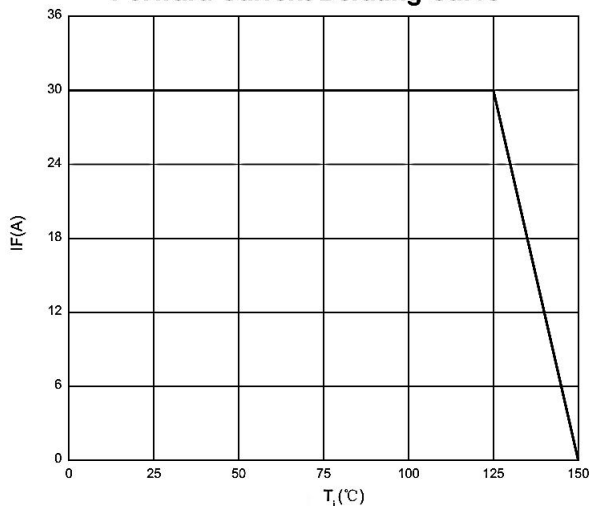
### ■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

| Parameter       | Symbol     | Test conditions    | Min                       | Typ   | Max  | Unit          |
|-----------------|------------|--------------------|---------------------------|-------|------|---------------|
| Reverse voltage | $V_{(BR)}$ | $I_R = \text{mA}$  | 45                        |       |      | V             |
| Reverse current | $I_R$      | $V_R = 45\text{V}$ | $T_J = 25^\circ\text{C}$  | 40    | 150  | $\mu\text{A}$ |
|                 |            |                    | $T_J = 125^\circ\text{C}$ | 23    |      | mA            |
| Forward voltage | $V_F$      | $I_F = 10\text{A}$ | $T_J = 25^\circ\text{C}$  | 0.556 | 0.58 | V             |
|                 |            |                    | $T_J = 125^\circ\text{C}$ | 0.37  |      | V             |
|                 |            | $I_F = 15\text{A}$ | $T_J = 25^\circ\text{C}$  | 0.48  | 0.55 | V             |
|                 |            |                    | $T_J = 125^\circ\text{C}$ | 0.44  |      | V             |

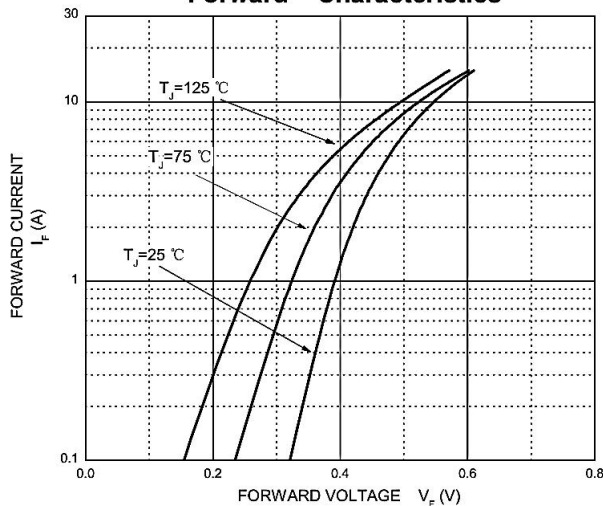
Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycles  $\leq 2.0\%$ .

### ■ TYPICAL CHARACTERISTICS

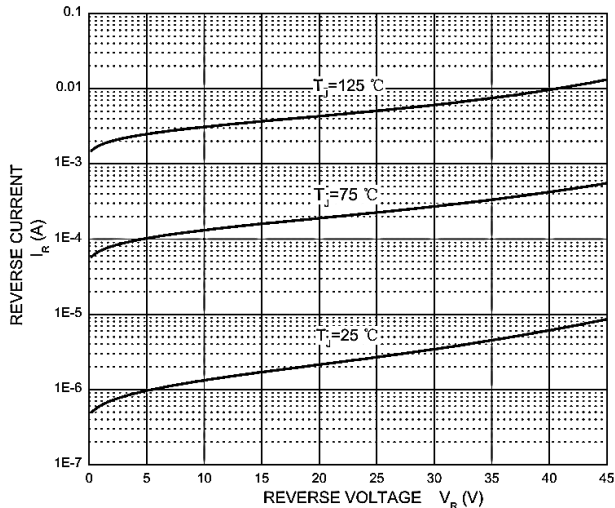
Forward Current Derating Curve



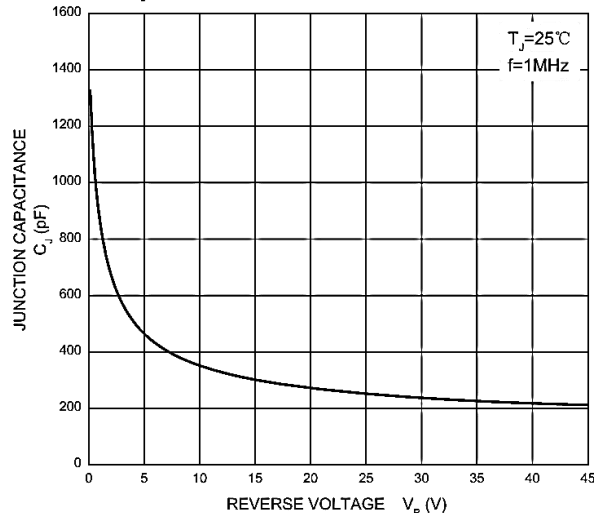
Forward Characteristics



Reverse Characteristics



Capacitance Characteristics Per Diode

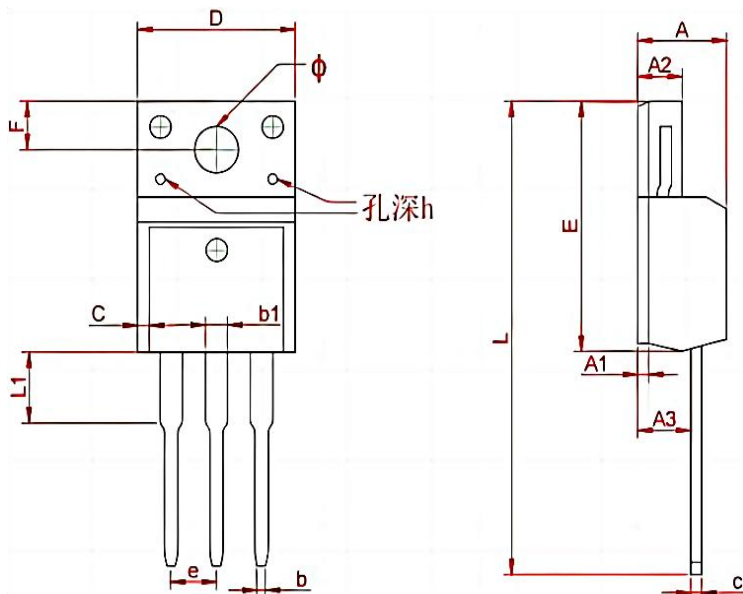




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## SCHOTTKY BARRIER RECTIFIER

### TO - 220F Package Outline Dimensions

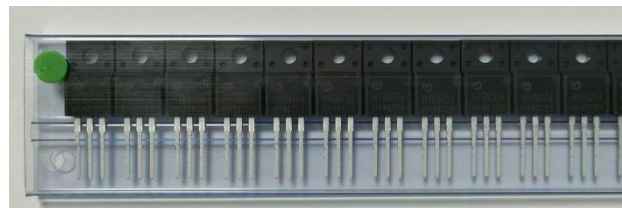


| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max    | Min                  | Max   |
| A      | 4.300                     | 4.750  | 0.169                | 0.185 |
| A1     | 1.830 REF                 |        | 0.072 REF            |       |
| A2     | 2.300                     | 2.850  | 0.090                | 0.112 |
| A3     | 2.500                     | 2.900  | 0.098                | 0.114 |
| b      | 0.400                     | 0.420  | 0.016                | 0.016 |
| b1     | 1.220                     | 1.280  | 0.048                | 0.050 |
| C      | 0.690                     | 0.720  | 0.027                | 0.028 |
| c      | 0.490                     | 0.510  | 0.019                | 0.020 |
| D      | 9.960                     | 10.200 | 0.392                | 0.400 |
| E      | 15.000                    | 15.950 | 0.588                | 0.625 |
| e      | 2.574 TYP                 |        | 0.101TYP             |       |
| F      | 3.470 REF                 |        | 0.136 REF            |       |
| y      | 3.200 REF                 |        | 0.125 REF            |       |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 28.780                    | 28.900 | 1.128                | 1.133 |
| L1     | 2.990                     | 3.100  | 0.117                | 0.122 |

### TO - 220F Packing Information



50PCS



20 Tube



Outer Box

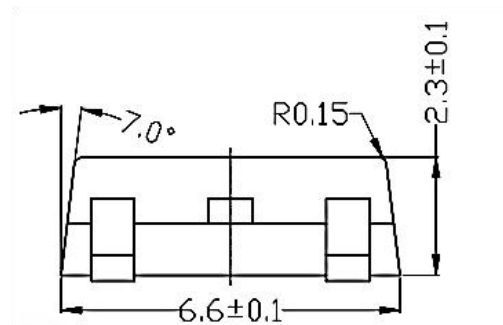
5 Inner  
Box



Inner Box

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

## SCHOTTKY BARRIER RECTIFIER



| Package version | Reel dimensions<br>$\Phi \times H$ (mm) | Per Reel (pcs) | Reels per box | Inner box dimensions<br>$L \times W \times H$ (mm) | Outer box (pcs) | Outer box dimensions<br>$L \times W \times H$ (mm) |
|-----------------|-----------------------------------------|----------------|---------------|----------------------------------------------------|-----------------|----------------------------------------------------|
| T0-252          | $\Phi 330 \times 20$                    | 2500           | 2             | 360*340*50                                         | 25000           | 375*375*280                                        |