

## SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 45 V

Forward Current - 10 A

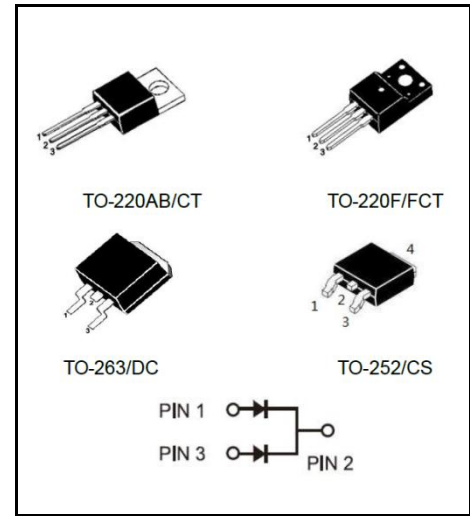


### FEATURES

- ◆ Low forward voltage
- ◆ High current capability
- ◆ High forward surge capability
- ◆ Low power losses, High efficiency
- ◆ Guarding for over voltage protection
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- ◆ Case: TO-220AB/CT TO-220F/FCT TO-263/DC TO-252/CS
- ◆ Solder bath temperature 275°C maximum, 10s per JESD22-106



### Primary Characteristic

|           |       |
|-----------|-------|
| $I_o$     | 2*5A  |
| $V_{RRM}$ | 45V   |
| $I_{FSM}$ | 230A  |
| $V_F$     | 0.48V |
| $T_J$ Max | 150°C |

### Maximum Ratings (Per Leg) at $T_a=25^\circ\text{C}$ unless otherwise specified

| Parameter  | Symbols                         | Value      | Units |
|--|---------------------------------|------------|-------|
| Maximum Repetitive Peak Reverse Voltage                                      | $V_{RRM}$                       | 45         | V     |
| Maximum RMS voltage  | $V_{RMS}$                       | 45         | V     |
| Maximum DC Blocking Voltage  | $V_{DC}$                        | 45         | V     |
| Maximum Average Forward Rectified Current                                    | Per Leg                         | 5          | A     |
|  | Total                           | 10         |       |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave                      | $I_{FSM}$                       | 230        | A     |
| Operating Temperature Range  | $T_J$                           | -55 ~ +150 | °C    |
| Storage Temperature Range  | $T_{STG}$                       | -55 ~ +150 | °C    |
| Typical Thermal Resistance <sup>(Note1)</sup> TO-220AB, TO-263 TO-220F TO252 | $R_{\theta JA}$ $R_{\theta JC}$ | 2/4        | °C/W  |

Note1: Thermal resistance from Junction to case per leg mounted on heatsink.

### Electrical Characteristics (Per Leg) unless otherwise specified

| Characteristics  | Symbols | Value    |      | Units |    |
|--|---------|----------|------|-------|----|
|  |         | Typ      | Max  |       |    |
| Forward Voltage Drop(Note2)<br>at $I_F=2A$<br>at $I_F=3A$<br>at $I_F=5A$ | $V_F$   | TA=25°C  | 0.43 | -     | V  |
|  |         | TA=125°C | 0.34 | -     |    |
|  |         | TA=25°C  | 0.46 | -     |    |
|  |         | TA=125°C | 0.39 | -     |    |
|  |         | TA=25°C  | 0.52 | 0.59  |    |
|  |         | TA=125°C | 0.48 | -     |    |
| Maximum Reverse Current at $V_R=45V$                                     | $I_R$   | TA=25°C  | 20   | 100   | uA |
|  |         | TA=125°C | 7    | -     | mA |

Note2: Pulse test: 300 μs pulse width, 1 % duty cycle

**RATINGS AND CHARACTERISTIC CURVES**

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

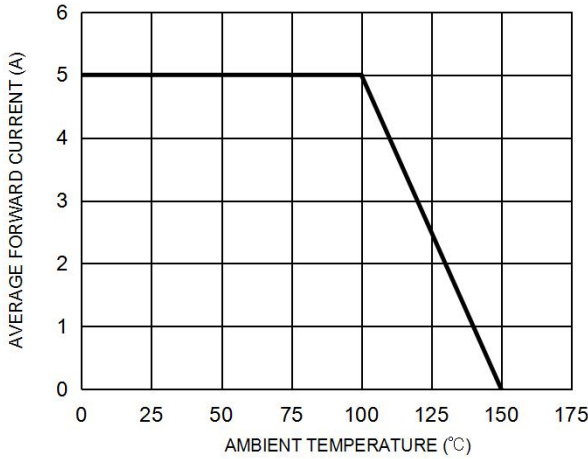


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

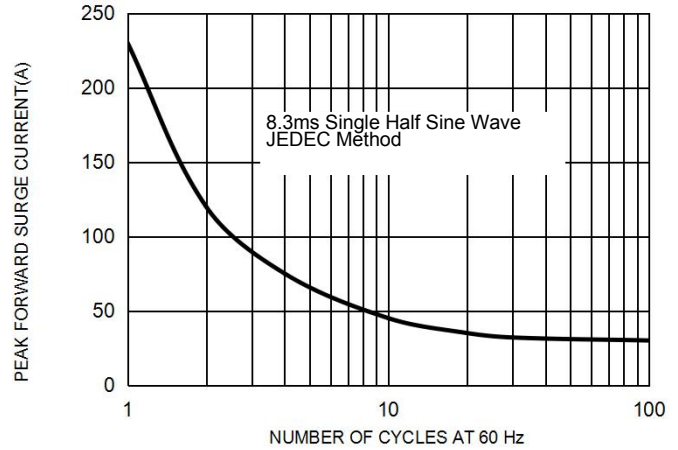


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

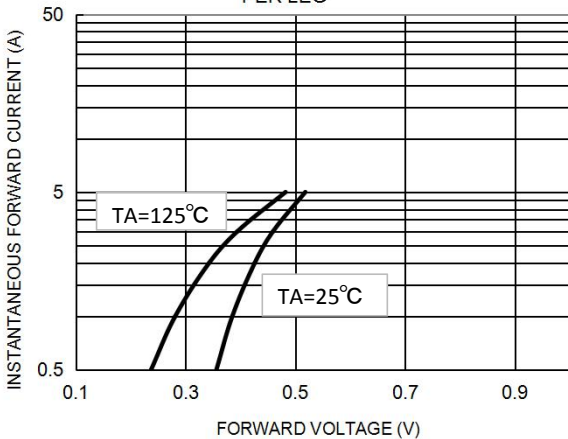
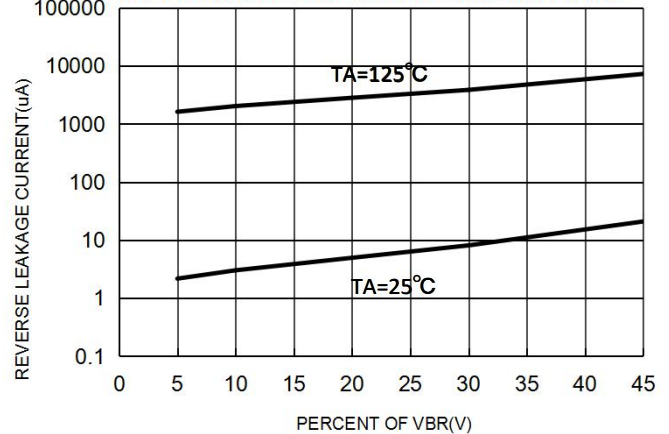
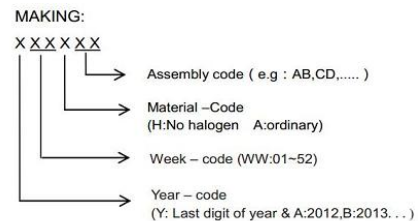
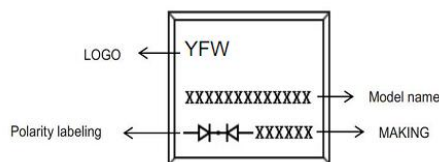


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG



**Marking on the body**



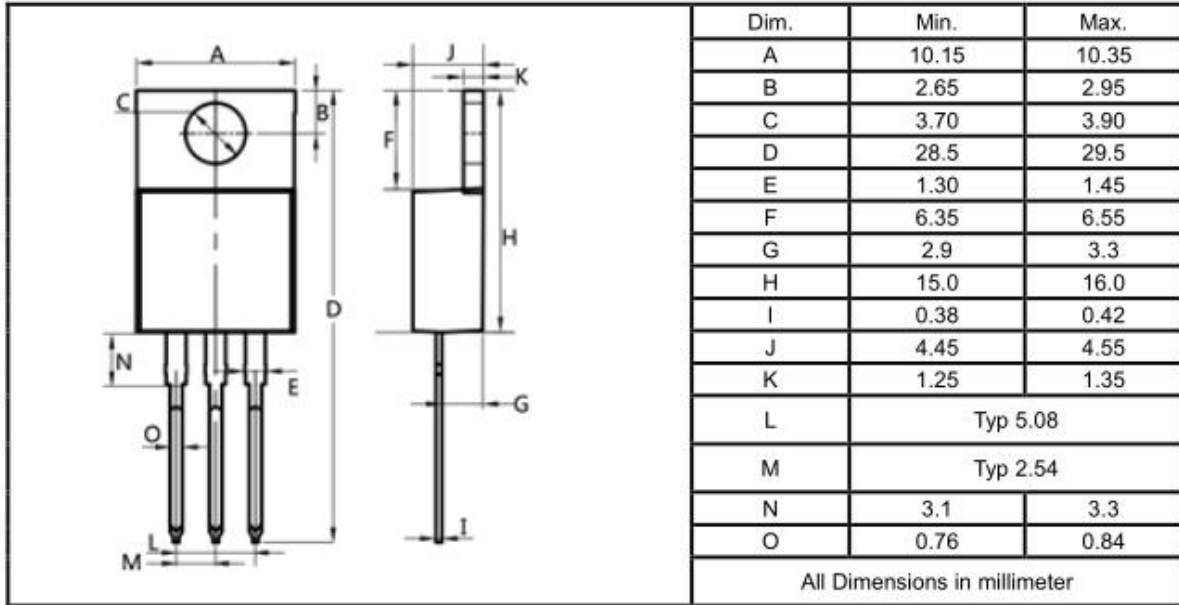
**Ordering information**

| Part Number | Package  | Unit Weight    | Base Quantity   | Delivery mode               |
|-------------|----------|----------------|-----------------|-----------------------------|
| MBR1045CT   | TO-220AB | 0.07oz(1.96g)  | 50 pcs / tube   | 1000pcs/box 5000pcs/carton  |
| MBR1045FCT  | TO-220F  | 0.06oz(1.74g)  | 50 pcs / tube   | 1000pcs/box 5000pcs/carton  |
| MBR1045DC   | TO-263   | 0.04oz(1.16g)  | 50 pcs / tube   | 1000pcs/box 5000pcs/carton  |
| MBR1045DC-R | O-263    | 0.04oz(1.16g)  | 800 pcs / reel  | 800pcs/box4000pcs/carton    |
| MBR1045CS   | TO-252   | 0.011oz(0.32g) | 2500 pcs / reel | 2500pcs/box 12500pcs/carton |

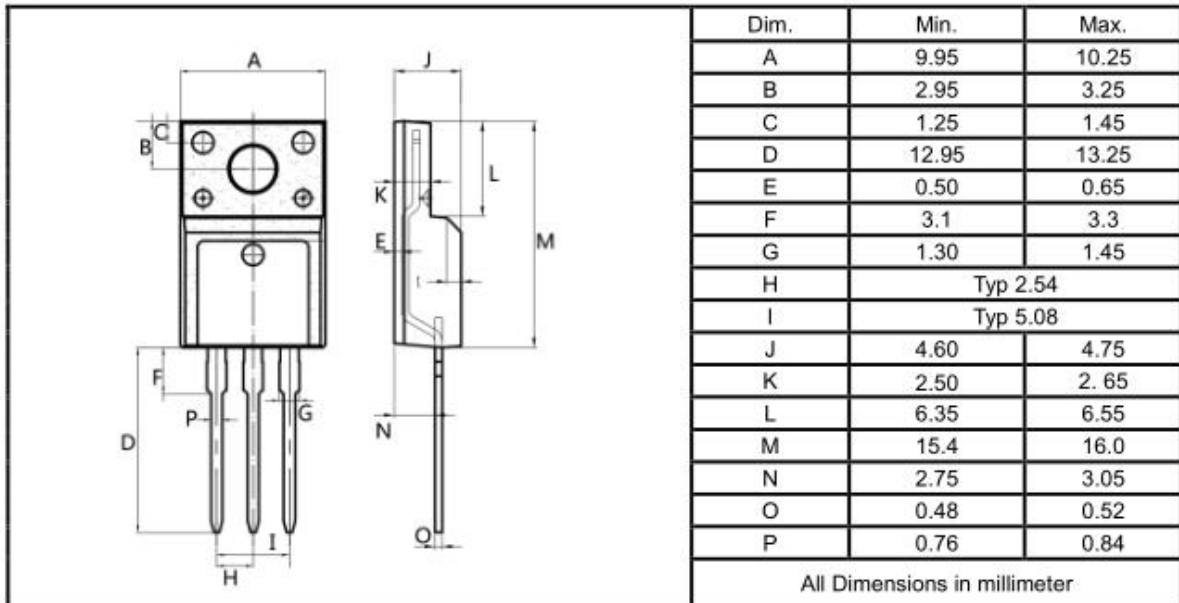
Note: For Halogen Free molding compound, add "H" suffix to part number above.

Package Outline Dimensions millimeters

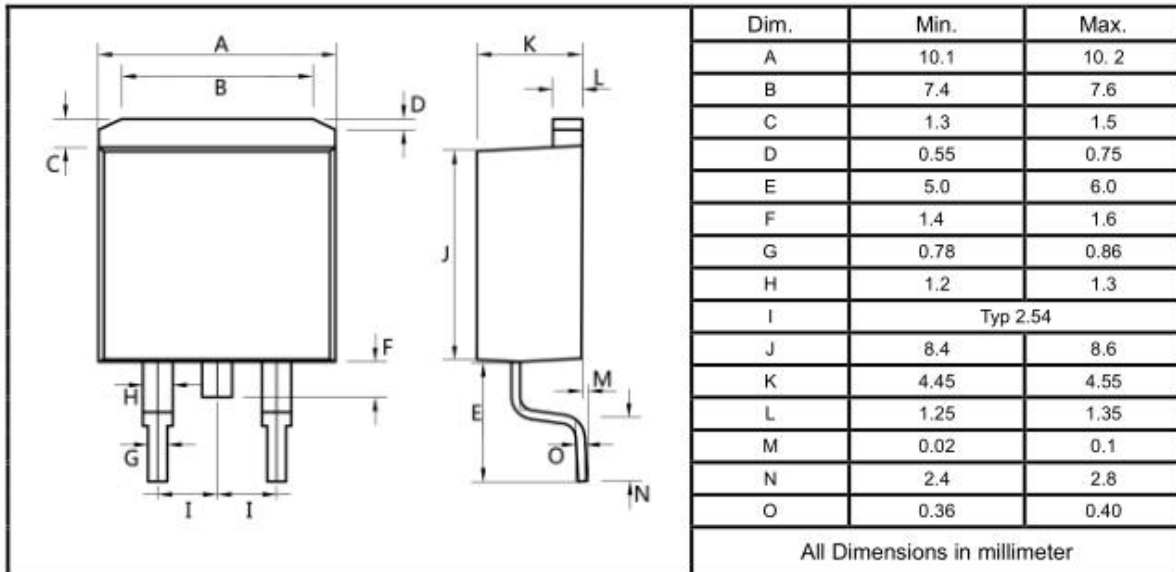
**TO-220AB**



**TO-220F**



**TO-263**



**TO-252**

