

## Trench MOS Barrier Schottky Rectifier

**Reverse Voltage - 200 V**

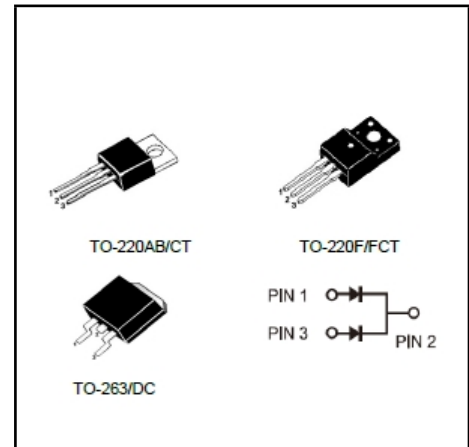
**Forward Current - 40 A**

### FEATURES

- ◆Very 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
- ◆Solder bath temperature 275°C maximum, 10s per JESD22-106



### Primary Characteristic

|                          |              |
|--------------------------|--------------|
| <b>I<sub>o</sub></b>     | <b>2*20A</b> |
| <b>V<sub>RRM</sub></b>   | <b>200V</b>  |
| <b>I<sub>FSM</sub></b>   | <b>250A</b>  |
| <b>V<sub>F</sub></b>     | <b>0.75V</b> |
| <b>T<sub>J</sub> Max</b> | <b>175°C</b> |

### Maximum Ratings (Per Leg) at Ta=25°C unless otherwise specified

| Parameter   | Symbols                                  | Value      | Units       |
|---|--|------------|-------------|
| Maximum Repetitive Peak Reverse Voltage                     | <b>V<sub>RRM</sub></b>                   | 200        | <b>V</b>    |
| Maximum RMS voltage   | <b>V<sub>RMS</sub></b>                   | 140        | <b>V</b>    |
| Maximum DC Blocking Voltage                                 | <b>V<sub>DC</sub></b>                    | 200        | <b>V</b>    |
| Maximum Average Forward Rectified Current                   | Per Leg                                  | 20         | <b>A</b>    |
|   | Total                                    | 40         |             |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave     | <b>I<sub>FSM</sub></b>                   | 250        | <b>A</b>    |
| Operating Temperature Range                                 | <b>T<sub>J</sub></b>                     | -50 ~ +175 | <b>°C</b>   |
| Storage Temperature Range                                   | <b>T<sub>STG</sub></b>                   | -50 ~ +175 | <b>°C</b>   |
| Typical Thermal Resistance (Note1) TO-220AB, TO-263 TO-220F | <b>R<sub>θJA</sub> / R<sub>θJC</sub></b> | 2/4        | <b>°C/W</b> |

**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 <sub>F</sub> =5A | <b>V<sub>F</sub></b> | TA=25°C                | 0.72     | -     | <b>V</b>  |      |
|  |                      | TA=125°C               | 0.59     | -     |           |      |
|  |                      | at I <sub>F</sub> =10A | TA=25°C  | 0.78  |           | 0.88 |
|  |                      |                        | TA=125°C | 0.66  |           | -    |
|  |                      | at I <sub>F</sub> =20A | TA=25°C  | 0.86  |           | 0.92 |
|  |                      |                        | TA=125°C | 0.75  |           | -    |
| Maximum Reverse Current at V <sub>R</sub> =200V      | <b>I<sub>R</sub></b> | TA=25°C                | 3        | 10    | <b>uA</b> |      |
|  |                      | TA=125°C               | 0.3      | -     | <b>mA</b> |      |

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

**RATINGS AND CHARACTERISTIC CURVES**

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

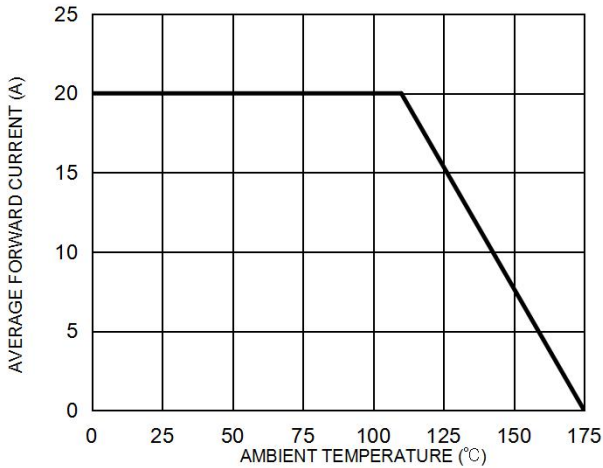


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

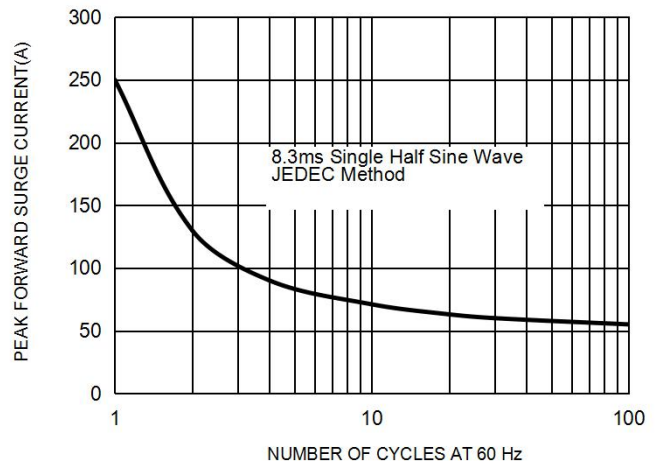


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

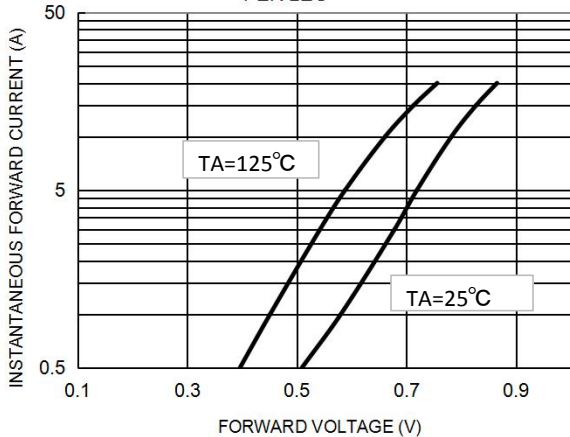
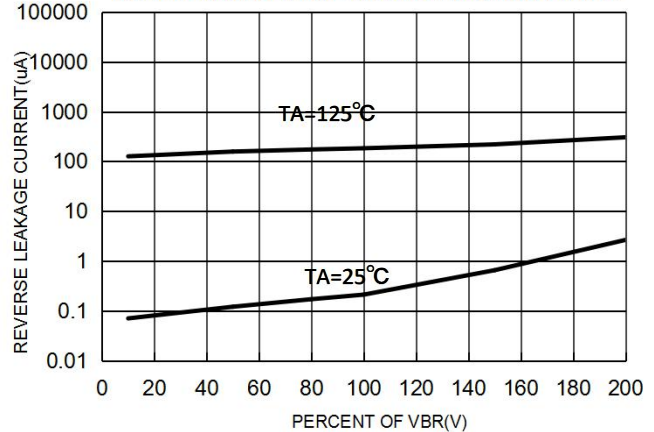


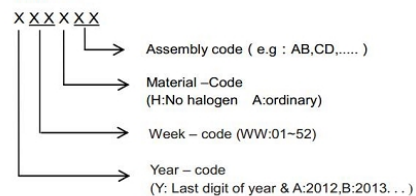
FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG



**Marking on the body**



**MAKING:**



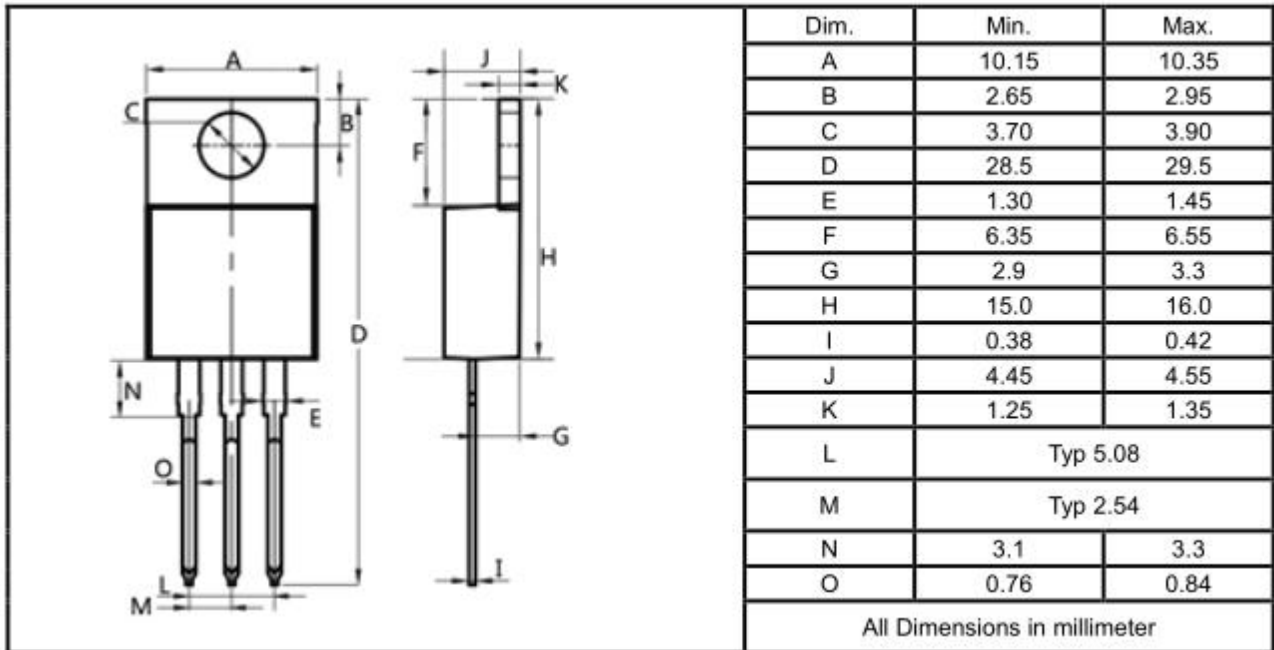
**Ordering information**

| Part Number   | Package  | Unit Weight   | Base Quantity  | Delivery mode              |
|---------------|----------|---------------|----------------|----------------------------|
| HRT40L200CT   | TO-220AB | 0.07oz(1.96g) | 50 pcs / tube  | 1000pcs/box 5000pcs/carton |
| HRT40L200FCT  | TO-220F  | 0.06oz(1.74g) | 50 pcs / tube  | 1000pcs/box 5000pcs/carton |
| HRT40L200DC   | TO-263   | 0.04oz(1.16g) | 50 pcs / tube  | 1000pcs/box 5000pcs/carton |
| HRT40L200DC-R | TO-263   | 0.04oz(1.16g) | 800 pcs / reel | 800pcs/box4000pcs/carton   |

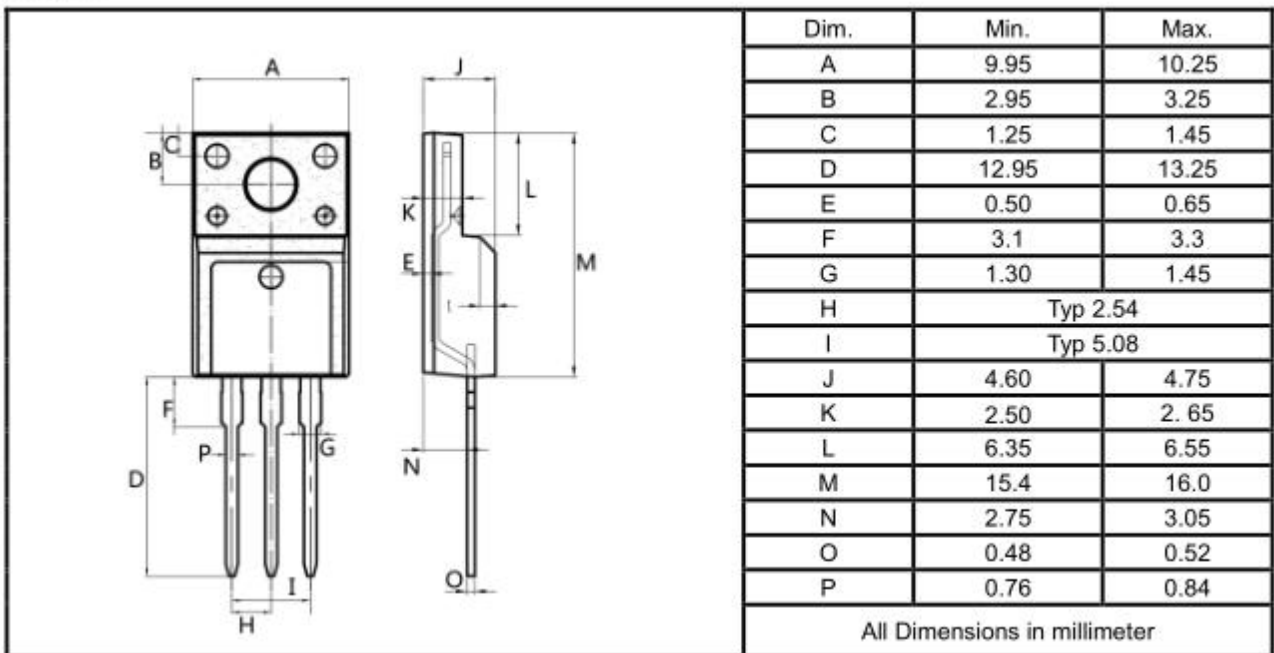
Note: For Halogen Free molding compound, add "H" suffix to part number above.

Package Outline Dimensions millimeters

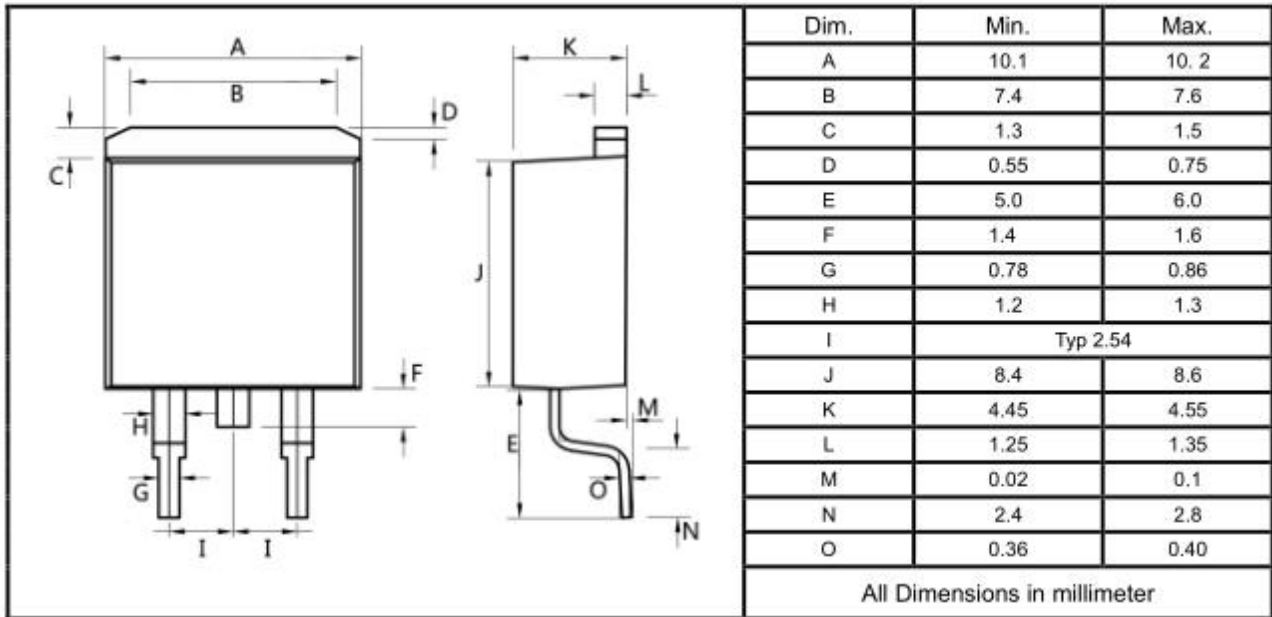
**TO-220AB**



**TO-220F**



TO-263



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