

Reverse Voltage: 250Volts

Forward Current:40.0Amperes

### Features

- ◇ Negligible switching lossess
- ◇ Low forward voltage drop
- ◇ Low power loss,high efficiency
- ◇ Excellent low reverse leakages
- ◇ High Junction temperature stability
- ◇ High current capability
- ◇ High forward surge capability
- ◇ Lead free finish ,Rohs and WEEE compliant.

### Applications

- ◇ Switching diode
- ◇ Switching mode power supply(SMPS)
- ◇ DC/DC converter
- ◇ LED lighting
- ◇ Adapter for notebook and game station

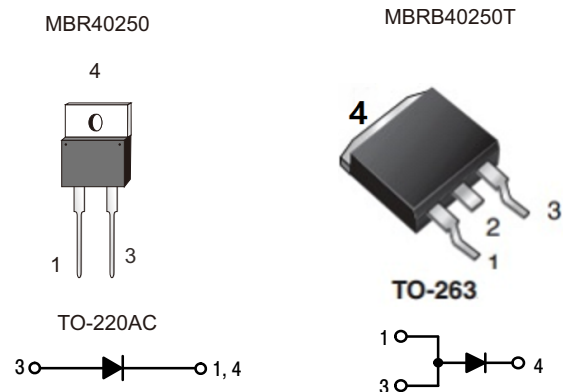
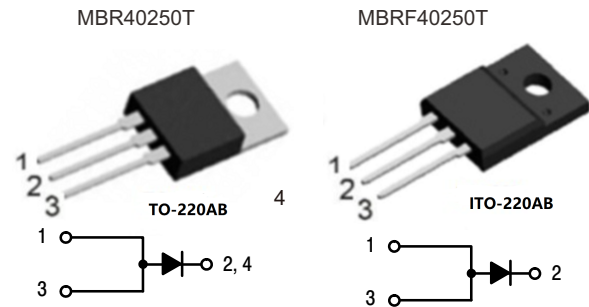
### Mechanical Data

- ◇ Moisture Sensitivity: MSL Level 1,per J-STD-020
- ◇ Terminals:Matte Tin Finish.  
Solderable per MIL-STD-202 Method 208
- ◇ Case Material: Molded Plastic;  
Molding compound meet UL Flammability ClassificationRating 94V-0
- ◇ Case:JEDEC TO-220AC,TO-220AB,ITO-220AB, TO-263

### Maximum Rating

Ratings at 25°C ambient temperature unless otherwise specified.

| PARAMETER                                       | SYMBOL      | VALUE           | UNITS            |
|---|-------------|-----------------|------------------|
| Maximum repetitive peak reverse voltage         | $V_{RRM}$   | 250             | V                |
| Maximum RMS voltage                             | $V_{RWS}$   | 200             | V                |
| Maximum DC blocking voltage                     | $V_{DC}$    | 250             | V                |
| Maximum average forward rectified current       | $I_{F(AV)}$ | 40              | A                |
| Peak forward surge current 8.3ms half-sine-wave | $I_{FSM}$   | 150             | A                |
| $I^2t$ Rating for Fusing( $t < 8.3ms$ )         | $I^2t$      | 93.375          | A <sup>2</sup> s |
| Typical Thermal Resistance                      | MBR40250(T) | $R_{\theta JA}$ | 60 °C/W          |
|   | MBRF40250T  | $R_{\theta JA}$ | 50 °C/W          |
|   | MBRB40250T  | $R_{\theta JA}$ | 50 °C/W          |
|   | MBR40250(T) | $R_{\theta JC}$ | 2.0 °C/W         |
|   | MBRF40250T  | $R_{\theta JC}$ | 3.0 °C/W         |
|   | MBRB40250T  | $R_{\theta JC}$ | 2.0 °C/W         |
| Typical junction capacitance: VR=4.0v,f=1MHz    | $C_J$       | 500             | pF               |
| Junction temperature                            | $T_J$       | 175             | °C               |
| Storage temperature range                       | $T_{STG}$   | -65~175         | °C               |



**Electrical Characteristics**

| PARAMETER                        | TEST CONDITIONS | SYMBOL    | VALUE |     |         | UNITS |
|----------------------------------|-----------------|-----------|-------|-----|---------|-------|
|                                  |                 |           | Min   | Typ | Max     |       |
| Breakdown voltage per diode(min) | IR=0.2mA        | $V_{BR}$  | 250   | -   | -       | V     |
| Instantaneous forward voltage    | IF=20.0A        | TC= 25°C  | $V_F$ | -   | 0.85    | V     |
|                                  |                 | TC= 125°C | $V_F$ | -   | 0.70    | V     |
|                                  | IF=40.0A        | TC= 25°C  | $V_F$ | -   | 0.95    | V     |
|                                  |                 | TC= 125°C | $V_F$ | -   | 0.85    | V     |
| Maximum DC reverse current       | TC= 25°C        | $I_R$     | -     | 5   | $\mu A$ |       |
| @Rated DC Blocking Vlotage       | TC=125°C        | $I_R$     | -     | 30  | mA      |       |

**ODERING PACK INFORMATION**

| Part No.   | Package   | Pcking      | Box Size<br>L×W×H(mm) | Quatity(pcs/box) | Carton Size<br>L×W×H(mm) | Quatity(pcs/carton) |
|------------|-----------|-------------|-----------------------|------------------|--------------------------|---------------------|
| MBR40250   | TO-220AC  | 50pcs/Tube  | 558×148×38            | 1000             | 570×290×180              | 5000                |
| MBR40250T  | TO-220AB  | 50pcs/Tube  | 558×148×38            | 1000             | 570×290×180              | 5000                |
| MBRF40250T | ITO-220AB | 50pcs/Tube  | 558×148×38            | 1000             | 570×290×180              | 5000                |
| MBRB40250T | TO-263    | 50pcs/Tube  | 560×178×38            | 1000             | 585×385×220              | 10000               |
| MBRB40250T | TO-263    | 800pcs/Reel | 335×335×40            | 800              | 370×385×220              | 4800                |

## Ratings And Characteristics Curves

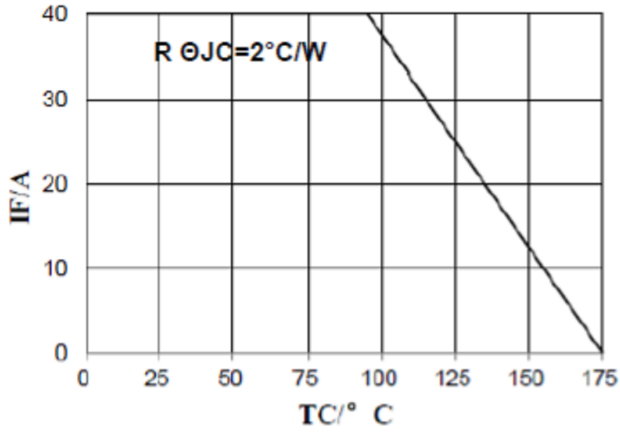


Fig.1 Current Dreating Curve

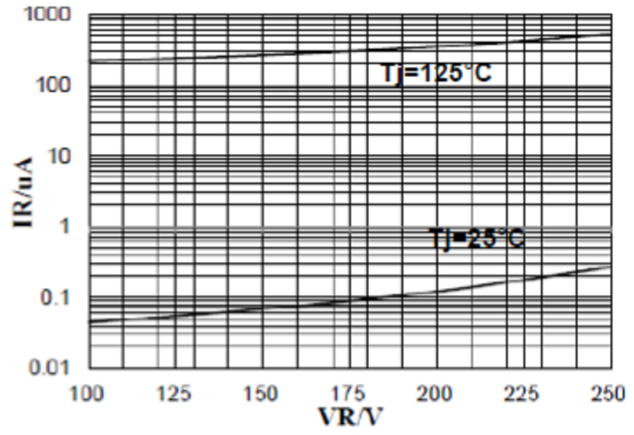


Fig.2 Typical Reverse Characteristic

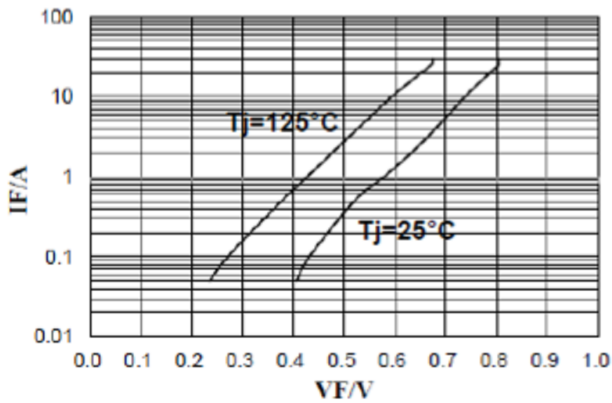
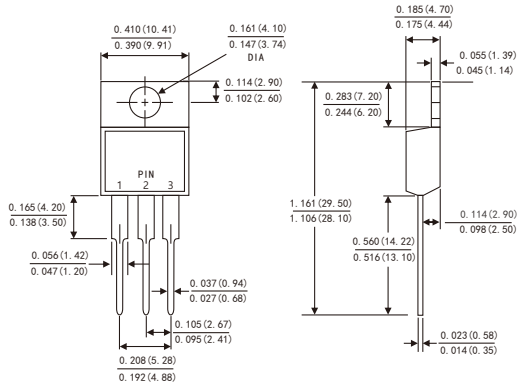


Fig.3 Typical Forward Characteristic

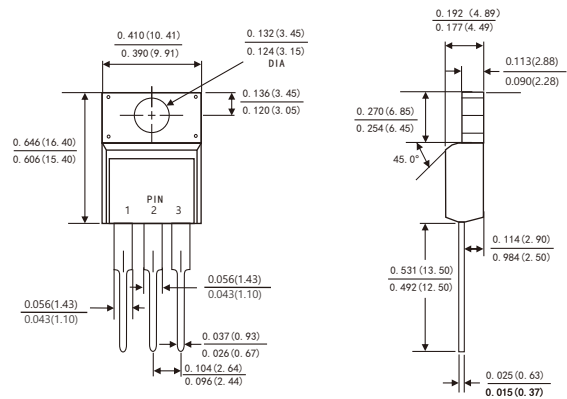
## Package Outline Dimensions

Dimensions in inches and (millimeters)

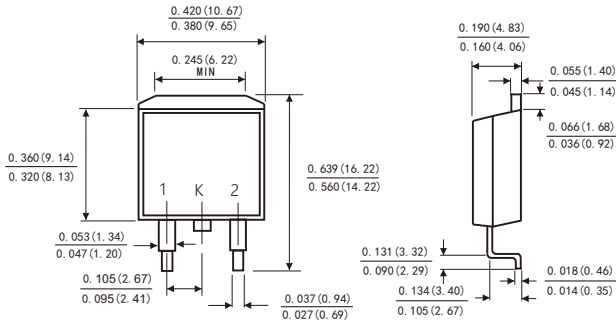
**TO-220AB**



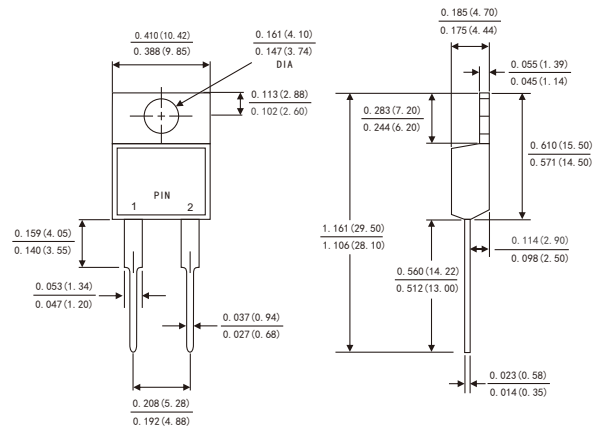
**ITO-220AB**



**TO-263**

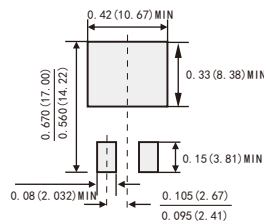


**TO-220AC**



### Suggested Pad Layout

( TO-263 )



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