

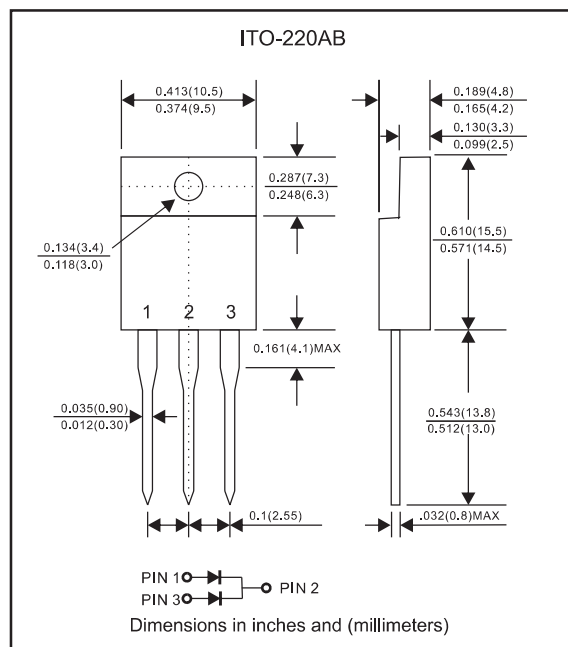
## Features

- Low power loss, high efficiency.
- High current capability
- High surge capability.
- Guardring for overvoltage protection.
- Low stored charge majority carrier conduction
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts. ex. MBR3040FCT-H.

## Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC ITO-220AB molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- Mounting Position : Any

## Package outline



### Maximum ratings and Electrical Characteristics (AT T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                 | CONDITIONS                                 | Symbol          | MIN. | TYP. | MAX. | UNIT         |
|---------------------------|--------------------------------------------|-----------------|------|------|------|--------------|
| Forward rectified current | See Fig.1                                  | $I_O$           |      |      | 30.0 | A            |
| Forward surge current     | 8.3ms single half sine-wave (JEDEC method) | $I_{FSM}$       |      |      | 200  | A            |
| Reverse current           | $V_R = V_{RRM} \quad T_J = 25^\circ C$     | $I_R$           |      |      | 0.05 | mA           |
|                           | $V_R = V_{RRM} \quad T_J = 125^\circ C$    |                 |      |      | 15   |              |
| Thermal resistance        | Junction to case (1)                       | $R_{\theta JC}$ |      | 4    |      | $^\circ C/W$ |
| Storage temperature       |                                            | $T_{STG}$       | -65  |      | +175 | $^\circ C$   |

NOTE : (1) Device mounted on additional heatsink, (50mm x 50mm x 23mm Al heatsink).

| SYMBOLS     | V <sub>RRM</sub> <sup>*1</sup><br>(V) | V <sub>RMS</sub> <sup>*2</sup><br>(V) | V <sub>R</sub> <sup>*3</sup><br>(V) | V <sub>F</sub> <sup>*4</sup><br>(V) | Operating temperature<br>T <sub>J</sub> , (°C) |
|-------------|---------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|------------------------------------------------|
| MBR3040FCT  | 40                                    | 28                                    | 40                                  | 0.70                                | -55 to +150                                    |
| MBR3045FCT  | 45                                    | 31.5                                  | 45                                  |                                     |                                                |
| MBR3050FCT  | 50                                    | 35                                    | 50                                  | 0.80                                |                                                |
| MBR3060FCT  | 60                                    | 42                                    | 60                                  |                                     |                                                |
| MBR3080FCT  | 80                                    | 56                                    | 80                                  | 0.85                                |                                                |
| MBR30100FCT | 100                                   | 70                                    | 100                                 |                                     |                                                |
| MBR30150FCT | 150                                   | 105                                   | 150                                 | 0.92                                | -55 to +175                                    |
| MBR30200FCT | 200                                   | 140                                   | 200                                 |                                     |                                                |

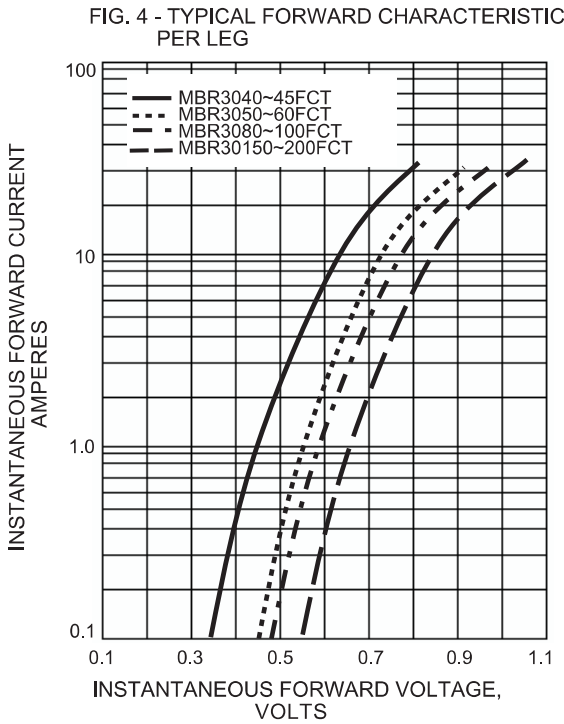
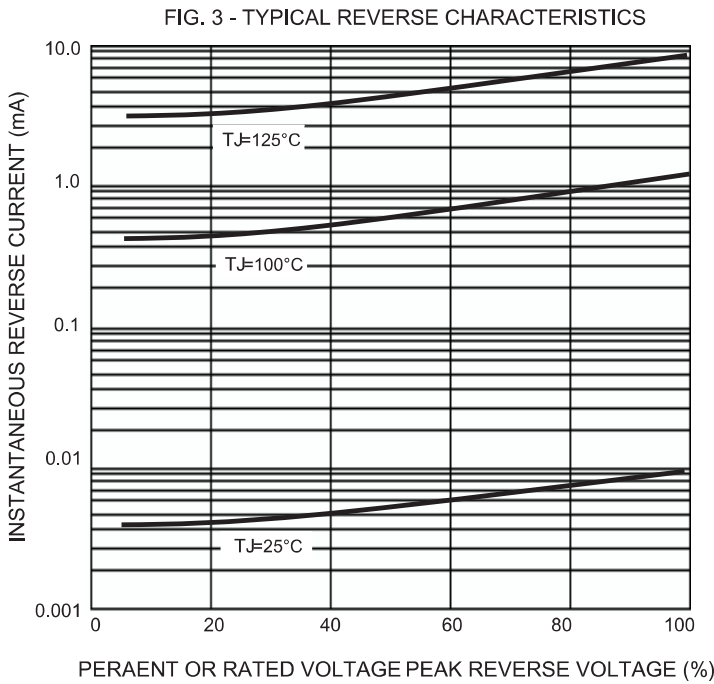
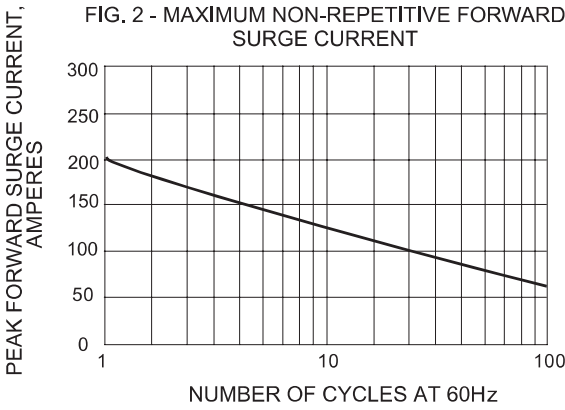
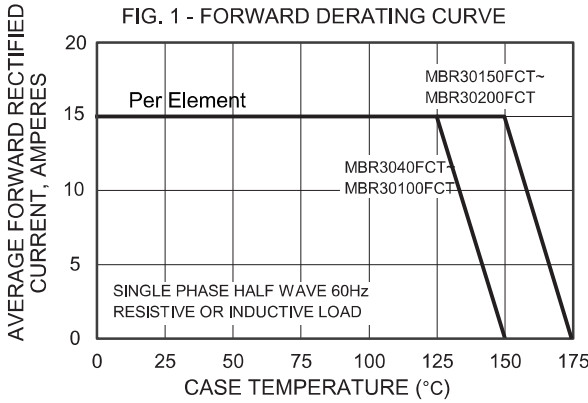
\*1 Repetitive peak reverse voltage

\*2 RMS voltage

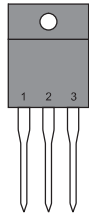
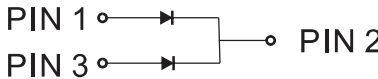
\*3 Continuous reverse voltage

\*4 Maximum forward voltage  
IF = 15.0A, 25°C

# Rating and characteristic curves (MBR3040FCT THRU MBR30200FCT)



### Pinning information

| Pin                                      | Simplified outline                                                                | Symbol                                                                              |
|------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Pin1 anode<br>Pin2 cathode<br>Pin3 anode |  |  |

### Marking

| Type number | Marking code |
|-------------|--------------|
| MBR3040FCT  | MBR3040FCT   |
| MBR3045FCT  | MBR3045FCT   |
| MBR3050FCT  | MBR3050FCT   |
| MBR3060FCT  | MBR3060FCT   |
| MBR3080FCT  | MBR3080FCT   |
| MBR30100FCT | MBR30100FCT  |
| MBR30150FCT | MBR30150FCT  |
| MBR30200FCT | MBR30200FCT  |