# MBR3040CT THRU MBR30200CT

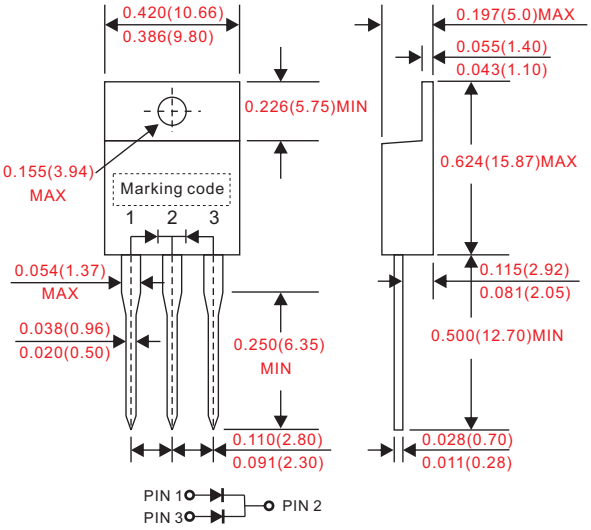
**30A High Power Schottky Barrier Rectifiers**

## ■ Features

- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Suffix "G" indicates Halogen-free part, ex.MBR3040CTG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

## ■ Outline

TO-220AB




Dimensions in inches and (millimeters)

## ■ Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC TO-220AB molded plastic body over passivated chip.
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guranteed.
- Polarity: Color band denotes cathode end.
- Mounting Position : Any.
- Weight : Approximated 2.25 gram.

## ■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Forward rectified current | See Fig.1 | $I_O$ | | | 30 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$ | | | 200 | A |
| Reverse current | $V_R = V_{RRM}$ $T_A = 25°C$ | $I_R$ | | | 0.1 | mA |
| | $V_R = V_{RRM}$ $T_A = 125°C$ | | | | 10 | |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | $C_J$ | | 150 | | pF |
| Thermal resistance | Junction to ambient | $R_{\theta JA}$ | | 30 | | °C/W |
| Storage temperature | | $T_{STG}$ | -55 | | +175 | °C |

| Symbol | Marking code | Max. repetitive peak reverse voltage $V_{RRM}$ (V) | Max. RMS voltage $V_{RMS}$ (V) | Max. DC blocking voltage $V_R$ (V) | Max. forward voltage @15A, $T_A = 25°C$ $V_F$ (V) | Max. forward voltage @15A, $T_A = 125°C$ $V_F$ (V) | Operating temperature $T_J$ (°C) |
|---|---|---|---|---|---|---|---|
| MBR3040CT | MBR3040CT | 40 | 28 | 40 | 0.70 | 0.57 | -55 ~ +150 |
| MBR3045CT | MBR3045CT | 45 | 31.5 | 45 | | | |
| MBR3060CT | MBR3060CT | 60 | 42 | 60 | 0.79 | 0.70 | |
| MBR3065CT | MBR3065CT | 65 | 45.5 | 65 | | | |
| MBR30100CT | MBR30100CT | 100 | 70 | 100 | 0.81 | 0.71 | |
| MBR30150CT | MBR30150CT | 150 | 105 | 150 | 0.87 | 0.77 | -55 ~ +175 |
| MBR30200CT | MBR30200CT | 200 | 140 | 200 | 0.90 | 0.80 | |



Document ID : DS-11K59
Issued Date : 2010/05/05
Revised Date : 2012/05/31
Revision : C1

■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

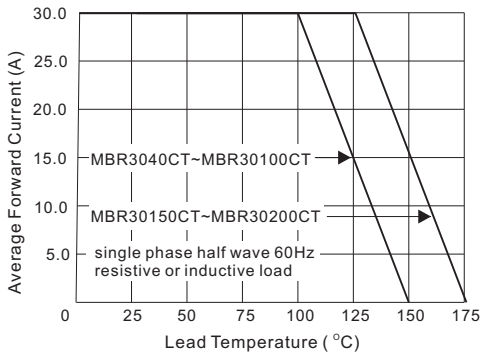



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

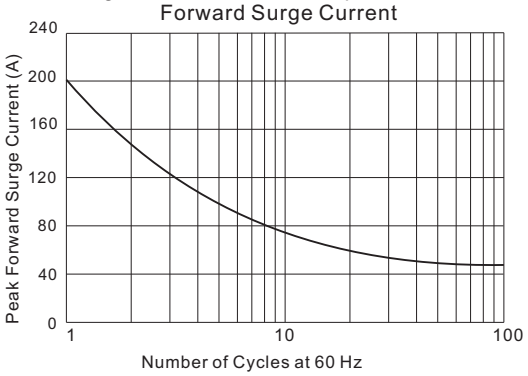



Fig. 3A - Instantaneous Forward Characteristics

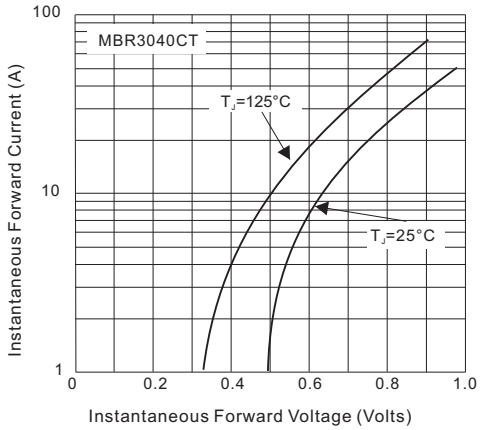



Fig. 3B - Instantaneous Forward Characteristics

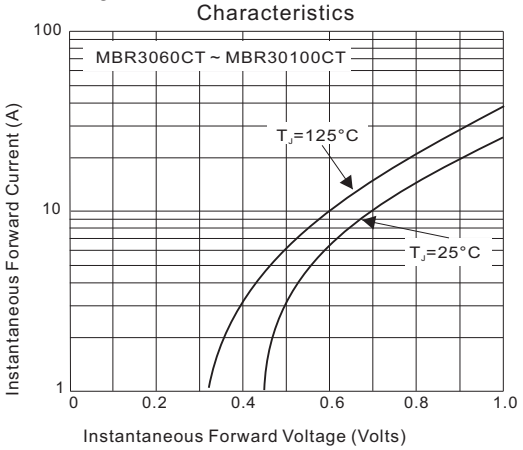



Fig. 3C - Instantaneous Forward Characteristics

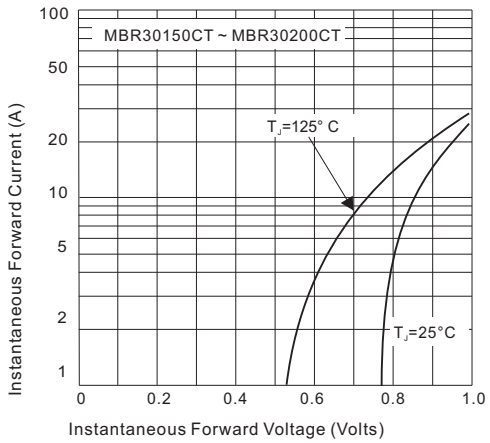
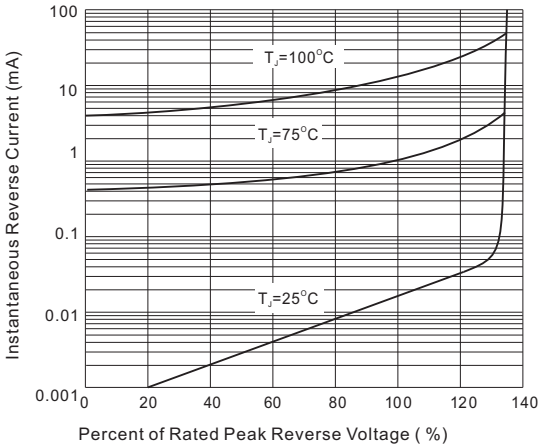



Fig. 4 - Reverse Characteristics






Document ID : DS-11K59
Issued Date : 2010/05/05
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