**20A 45V Planar Schottky Diode**

## ■ Applications

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

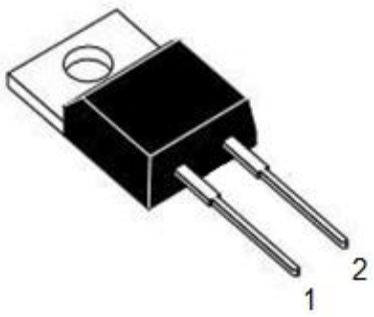
- AC-DC Adaptors
- DC-DC Converters

## ■ Product Summary

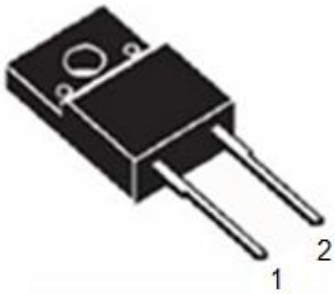
| | | |
|---|---|---|
| $V_{RRM}$ | 45 | V |
| $I_F$@$T_J$=25℃ | 20 | A |
| $V_{F\ ,TYP}$@10A,$T_J$=25℃ | 0.65 | V |
| $V_{F\ ,TYP}$@10A,$T_J$=125℃ | 0.57 | V |
| $I_{R,\ TYP}$@$T_J$=25℃ | 0.1 | mA |

## ■ Features

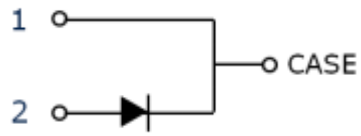
- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss,High Effciency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- Halogen Free and RoHS Compliant




TO-220




TO-220F




1、CATHODE

2、ANODE

| Marking | Package | Packaging | Min. package quantity |
|---|---|---|---|
| MBR2045 | TO-220 | Tube | 1000 |
| MBR2045 | TO-220F | Tube | 1000 |

## ■ Absolute Maximum Ratings（Tc=25℃ unless otherwise noted)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage | $V_{RRM}$ | 45 | V |
| Surge Peak Reverse Voltage | $V_{RSM}$ | | V |
| DC Peak Blocking Voltage | $V_R$ | | V |
| Continuous Forward Current | $I_{F(per\ leg)}$ | 20 | A |
| | $I_{F(total)}$ | 20 | A |
| Non-Repetitive Peak Surge Current((Surge applied at rated load conditions halfwave,single phase,60HZ) | $I_{FSM}$ | 200 | A |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature | $T_{stg}$ | -65-150 | ℃ |

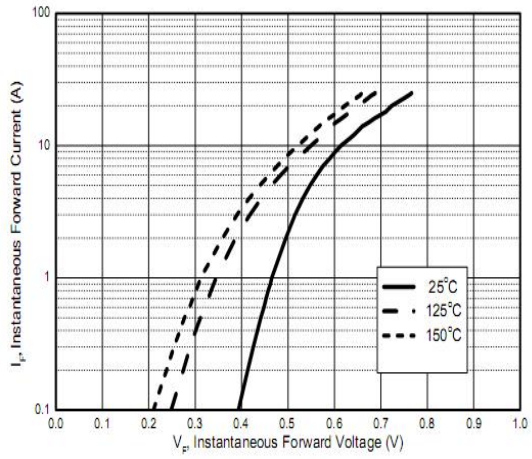
## ■ Thermal Characteristics

| Parameter | Symbol | Package | Max | Unit |
|---|---|---|---|---|
| Maximum Junction-to-Case | $R_{\theta JC}$ | TO-220 | 2 | ℃/W |
| | $R_{\theta JC}$ | TO-220F | 4 | ℃/W |
| Maximum Junction-to-Ambient | $R_{\theta JA}$ | TO-220 | 60 | ℃/W |
| | $R_{\theta JA}$ | TO-220F | 60 | ℃/W |

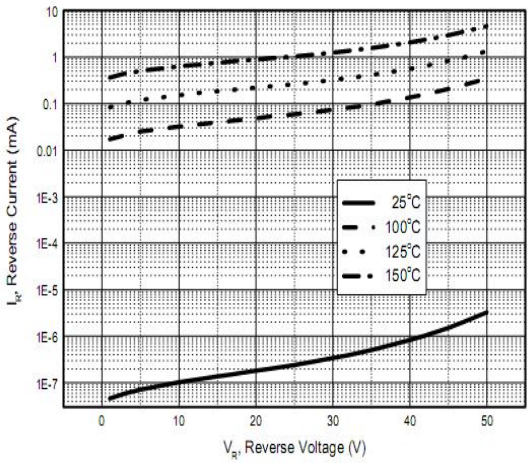
## ■ Electrical Characteristics（Per Leg）（Tc=25℃ unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$=10A，$T_J$=25℃ | - | 0.65 | - | V |
| | | $I_F$=10A，$T_J$=125℃ | - | 0.57 | - | V |
| Reverse Current | $I_R$ | $V_R$=45V，$T_J$=25℃ | - | 0.1 | - | mA |
| | | $V_R$=45V，$T_J$=125℃ | - | 15 | - | mA |

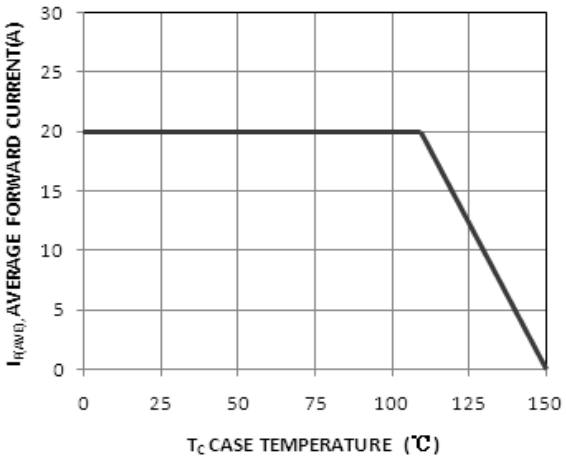
## ■ Characteristics Curves




**Forward Characteristics Per Diode**

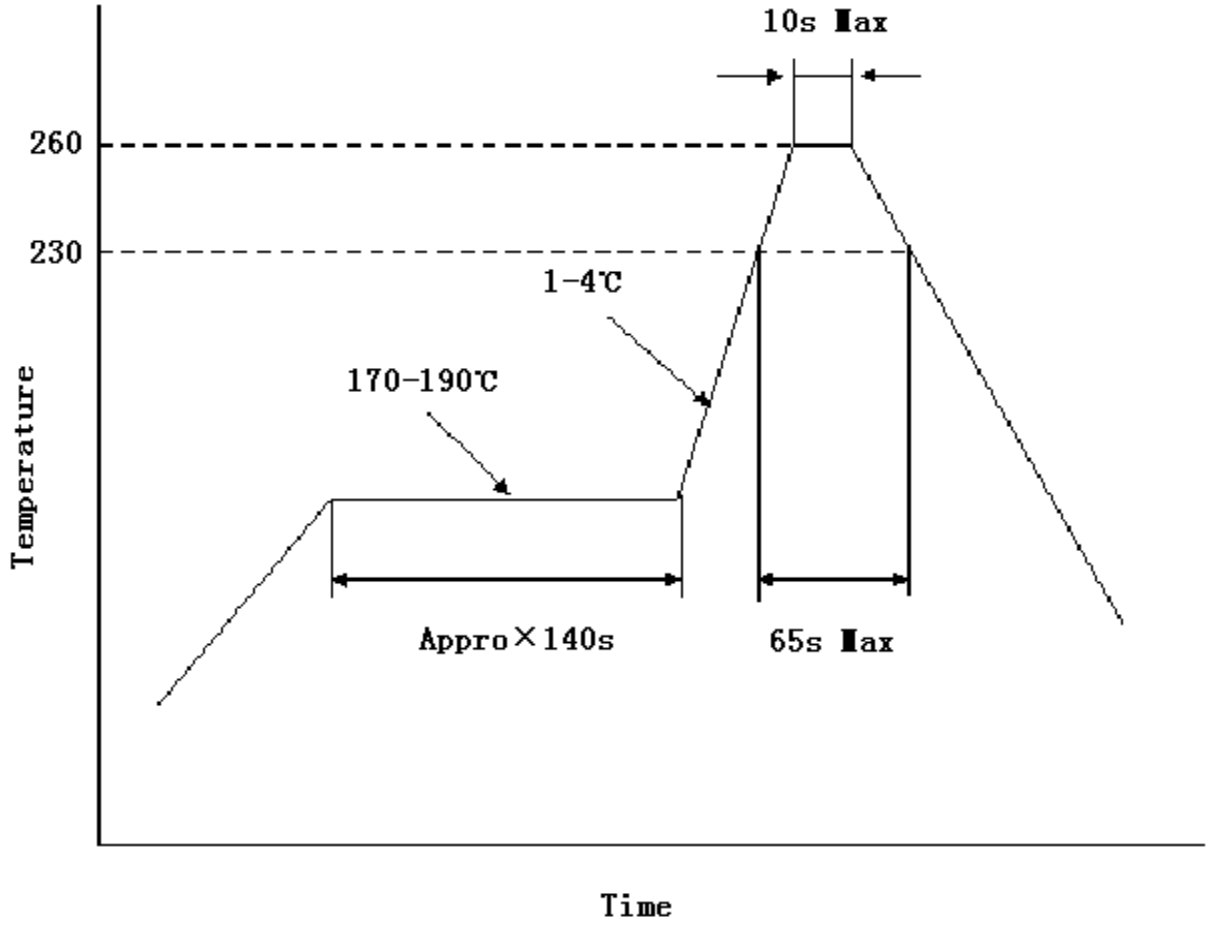



**Reverse Characteristics Per Diode**




**Current Derating Per Diode**

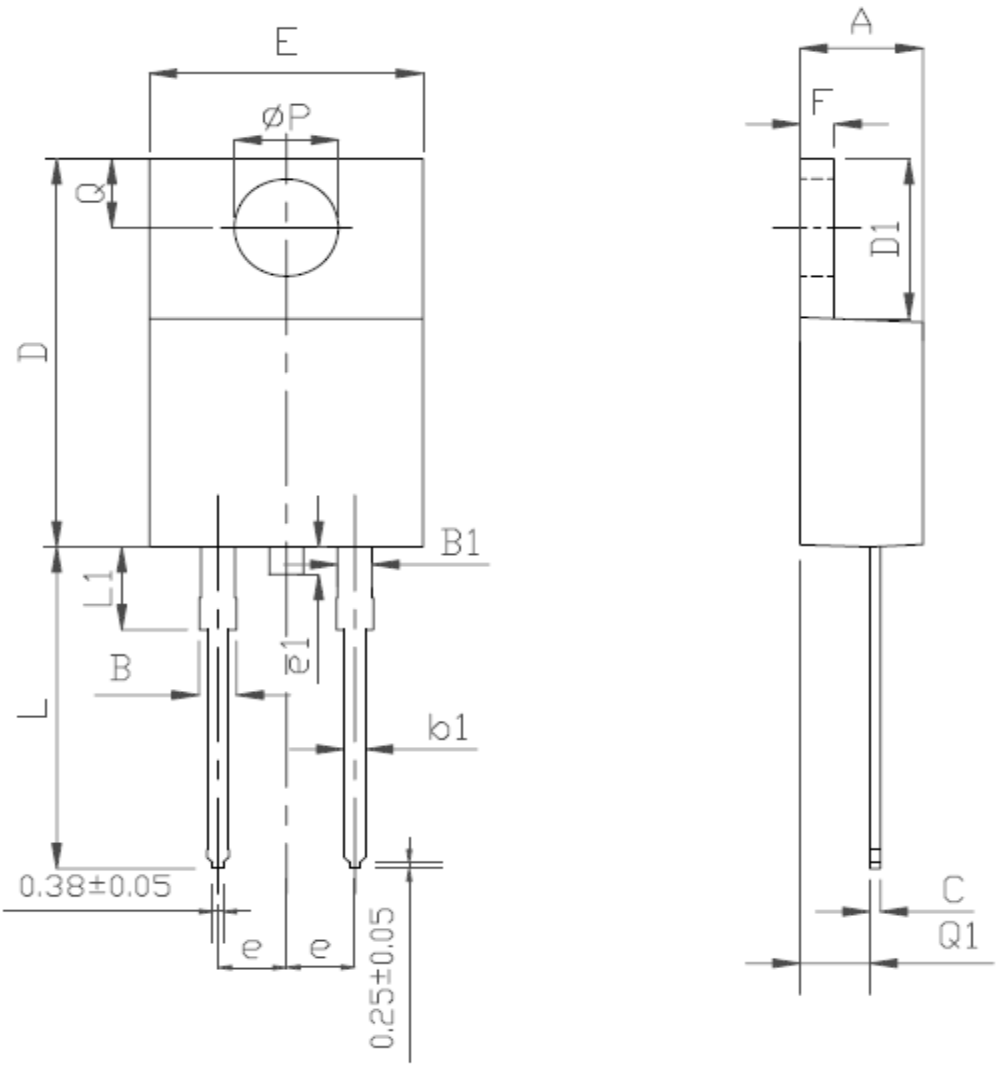
## ■ Reflow Soldering Temperature Profile



## ■ TO-220 Package Dimensions

Unit：mm

| Symbol | Min | Nom | Max | Symbol | Min | Nom | Max |
|---|---|---|---|---|---|---|---|
| A | 4.00 | | 4.80 | e | | 2.54 | |
| B | 1.20 | | 1.40 | e1 | 1.00 | | 1.50 |
| B1 | 1.00 | | 1.40 | F | 1.10 | | 1.40 |
| b1 | 0.65 | | 1.00 | L | 12.50 | | 14.50 |
| c | 0.40 | | 0.55 | L1 | 3.00 | 3.50 | 4.00 |
| D | 15.00 | | 16.50 | ΦP | | 3.80 | |
| D1 | 5.90 | | 6.90 | Q | 2.50 | | 3.00 |
| E | 9.90 | | 10.70 | Q1 | 2.00 | | 2.90 |



## ■ TO-220F Package Dimensions

Unit：mm

| Symbol | Min | Nom | Max | Symbol | Min | Nom | Max |
|---|---|---|---|---|---|---|---|
| A | 4.5 | | 4.9 | E1 | | 7 | |
| A1 | 2.3 | | 2.9 | e | | 2.54 | |
| b | 0.45 | | 0.9 | e1 | 1 | | 1.5 |
| b1 | 1.1 | | 1.7 | L | 12.5 | | 14.3 |
| b2 | 1.2 | | 1.4 | L1 | 9.45 | | 10.05 |
| c | 0.35 | | 0.9 | L2 | 15 | | 16 |
| D | 14.5 | | 17 | L3 | 3.2 | | 4.4 |
| D1 | 6.1 | | 6.9 | ΦP | 3 | | 3.3 |
| E | 9.6 | | 10.3 | Q | 2.5 | | 2.9 |