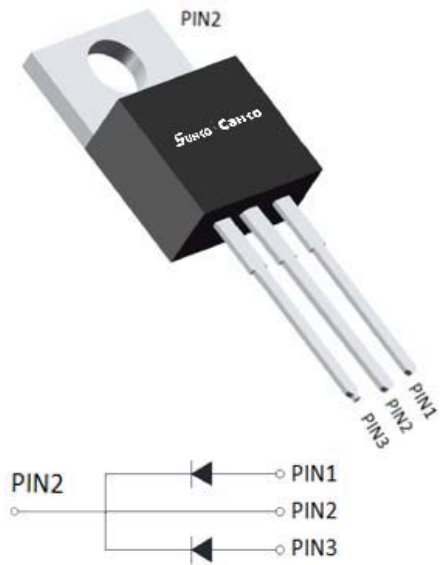


## Schottky Diodes



### Features

- High frequency operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Solder dip 275 °C max. 7 s, per JESD 22-B106

### Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220AB  
Molding compound meets UL 94 V-0 flammability rating, -
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                                                                      | SYMBOL    | UNIT             | MBRL2045CT |
|--------------------------------------------------------------------------------|-----------|------------------|------------|
| Device marking code                                                            |           |                  | MBRL2045CT |
| Repetitive Peak Reverse Voltage                                                | $V_{RRM}$ | V                | 45         |
| Average Rectified Output Current<br>@60Hz sine wave, R-load, Ta (FIG 1)        | $I_O$     | A                | 20         |
| Surge(Non-repetitive)Forward Current<br>@60Hz half sine-wave, 1 cycle, Ta=25°C | $I_{FSM}$ | A                | 180        |
| Current Squared Time<br>@1ms≤t≤8.3ms Tj=25°C, rating of per diode              | $I^2t$    | A <sup>2</sup> s | 134        |
| Storage Temperature                                                            | $T_{stg}$ | °C               | -55 ~ +150 |
| Junction Temperature                                                           | $T_j$     | °C               | -55 ~ +150 |

### ■Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER                                                         | SYMBOL     | UNIT | TEST CONDITIONS              | MBRL2045CT |
|-------------------------------------------------------------------|------------|------|------------------------------|------------|
| Maximum instantaneous forward voltage drop per diode              | $V_{FM}$   | V    | $I_{FM}=10.0A$               | 0.55       |
| Maximum DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | mA   | $V_{RM}=V_{RRM}$<br>Ta=25°C  | 0.2        |
|                                                                   | $I_{RRM2}$ |      | $V_{RM}=V_{RRM}$<br>Ta=100°C | 50         |

### ■Thermal Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER          | SYMBOL                    | UNIT             | MBRL2045CT |
|--------------------|---------------------------|------------------|------------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | °C/W       |
|                    |                           |                  | 2.0        |

## ■Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g)  | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MBRL2045CT   | Approximate 1.9 | 50                    | 1000                    | 5000                       | Tube          |

## ■Characteristics (Typical)

FIG1:Io -Tc Curve

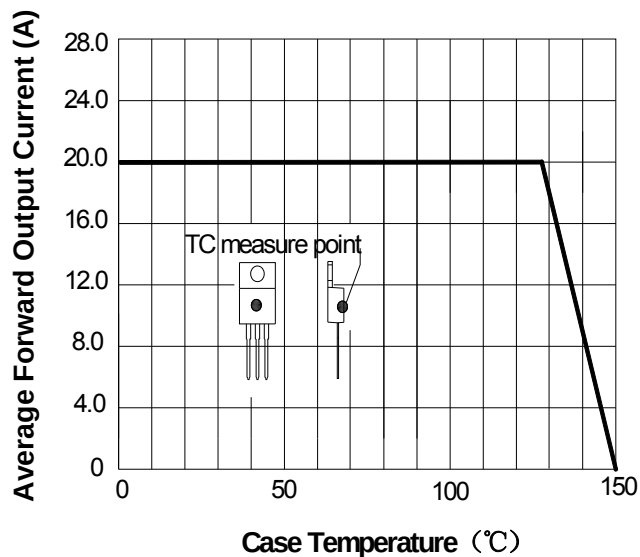


FIG2: Surge Forward Current Capability

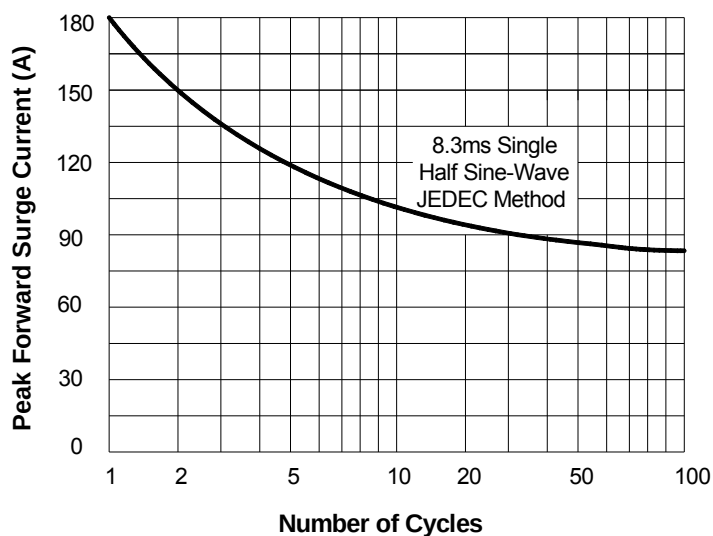


FIG3: Forward Voltage

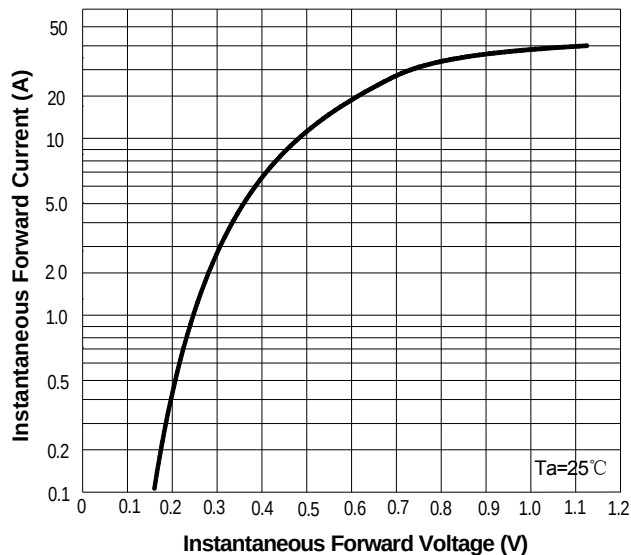
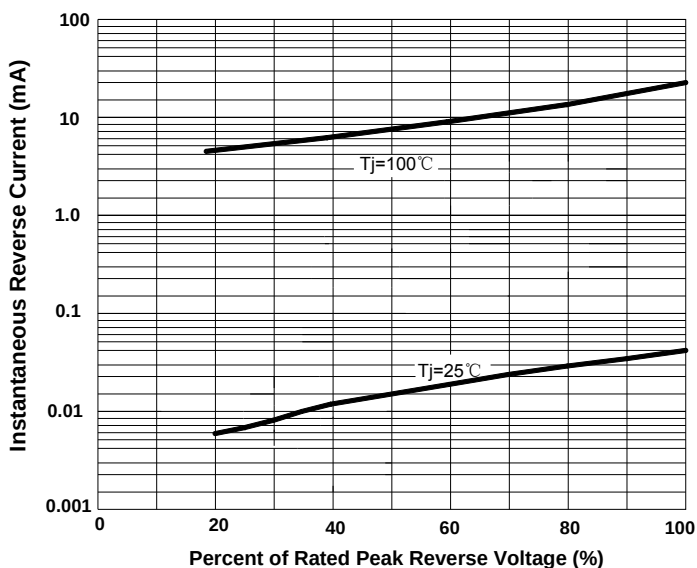
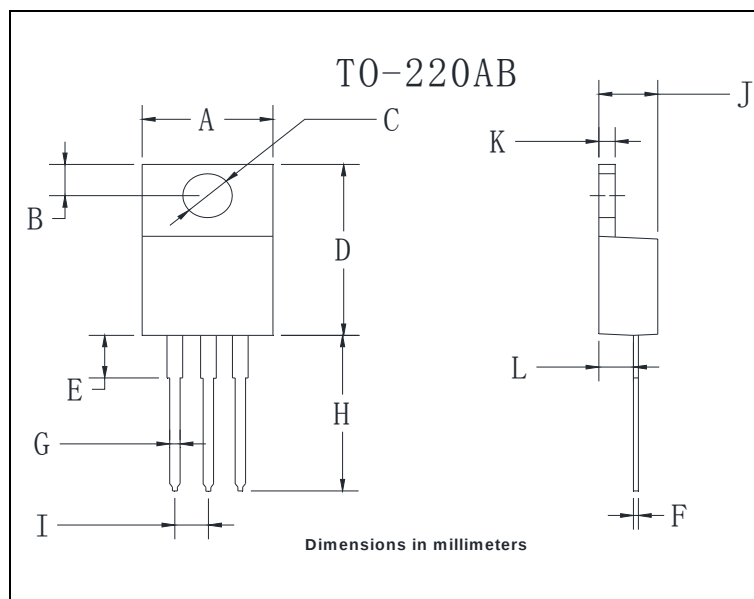


FIG4: Typical Reverse Characteristics



■ Outline Dimensions



| TO-220AB |       |       |
|----------|-------|-------|
| Dim      | Min   | Max   |
| A        | 9.5   | 10.9  |
| B        | 2.22  | 3.27  |
| C        | 3.34  | 4.31  |
| D        | 14.5  | 15.5  |
| E        | 3.16  | 4.46  |
| F        | 0.28  | 0.64  |
| G        | 0.68  | 0.94  |
| H        | 13.06 | 14.62 |
| I        | 2.01  | 3.07  |
| J        | 4.04  | 5.1   |
| K        | 1.14  | 1.4   |
| L        | 2.14  | 3.19  |

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