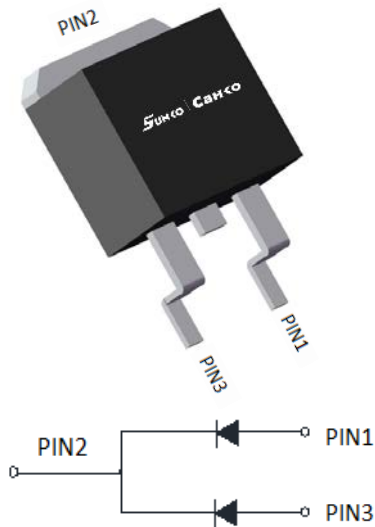


## Schottky Diodes



### Features

- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

### Typical Applications

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

### Mechanical Data

- **Package:** TO-263  
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 (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                | SYMBOL           | UNIT             | MBRBU40100CT |
|------------------------------------------------------------------------------------------|------------------|------------------|--------------|
| Device marking code                                                                      |                  |                  | MBRBU40100CT |
| Repetitive Peak Reverse Voltage                                                          | V <sub>RRM</sub> | V                | 100          |
| Average Rectified Output Current @60Hz sine wave, R-load, T <sub>a</sub> (FIG 1)         | I <sub>O</sub>   | A                | 40           |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>a</sub> =25°C | I <sub>FSM</sub> | A                | 320          |
| Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C                                   | I <sup>2</sup> t | A <sup>2</sup> s | 425          |
| Storage Temperature                                                                      | T <sub>stg</sub> | °C               | -55 ~ +150   |
| Junction Temperature                                                                     | T <sub>j</sub>   | °C               | -55 ~ +150   |

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                         | SYMBOL            | UNIT | TEST CONDITIONS                                            | MBRBU40100CT |
|-------------------------------------------------------------------|-------------------|------|------------------------------------------------------------|--------------|
| Maximum instantaneous forward voltage drop per diode              | V <sub>FM</sub>   | V    | I <sub>FM</sub> =20.0A                                     | 0.71         |
| Maximum DC reverse current at rated DC blocking voltage per diode | I <sub>RRM1</sub> | mA   | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =25°C  | 0.2          |
|                                                                   | I <sub>RRM2</sub> |      | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =100°C | 100          |

Note1:Pulse test:300uS pulse width,1% duty cycle

Note2:Pulse test:pulse width 40mS

■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER          |                           | SYMBOL            | UNIT | MBRBU40100CT |
|--------------------|---------------------------|-------------------|------|--------------|
| Thermal Resistance | Between junction and case | R <sub>θJ-C</sub> | °CW  | 2.0          |

■ Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g)   | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| MBRBU40100CT  | Approximate 1.43 | 50                   | 2000                    | 8000                       | Tube          |
| MBRBU40100CT  | Approximate 1.43 | 1000                 | 2000                    | 10000                      | Reel          |

■ Characteristics (Typical)

FIG1: I<sub>o</sub> -T<sub>c</sub> Curve

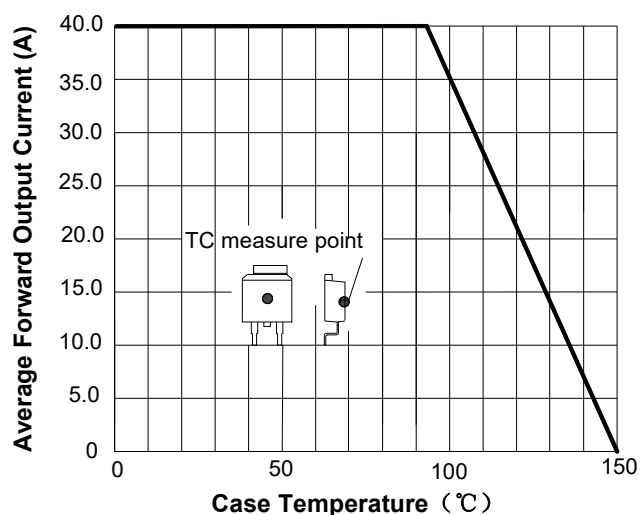


FIG2: Surge Forward Current Capability

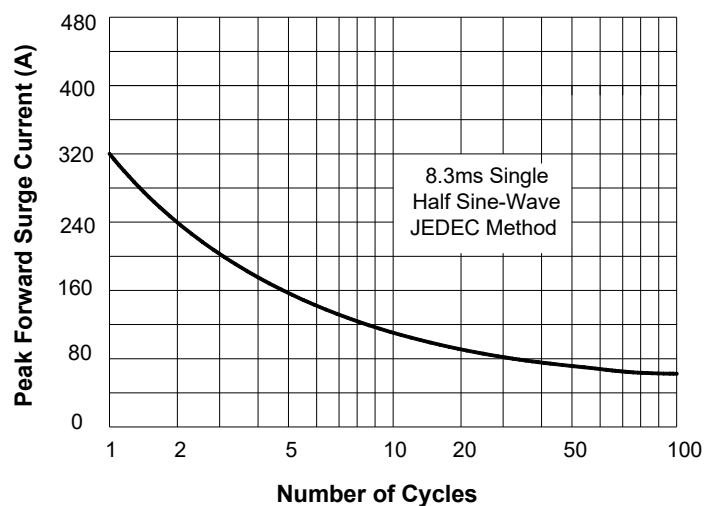


FIG3: Forward Voltage

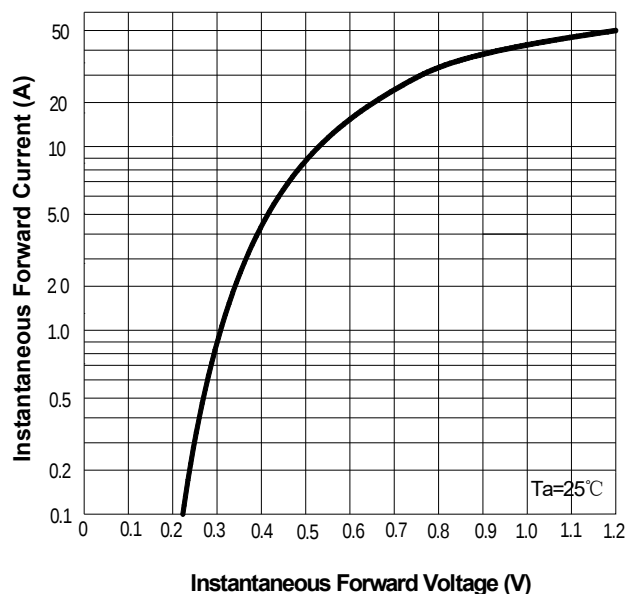
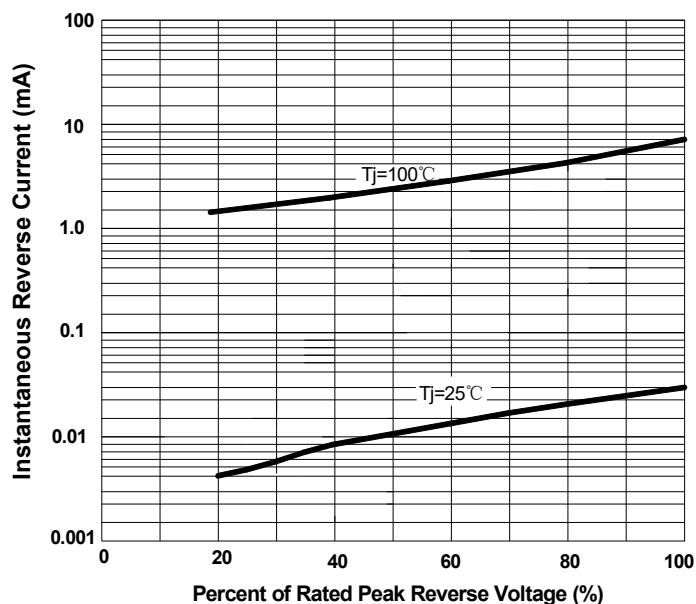
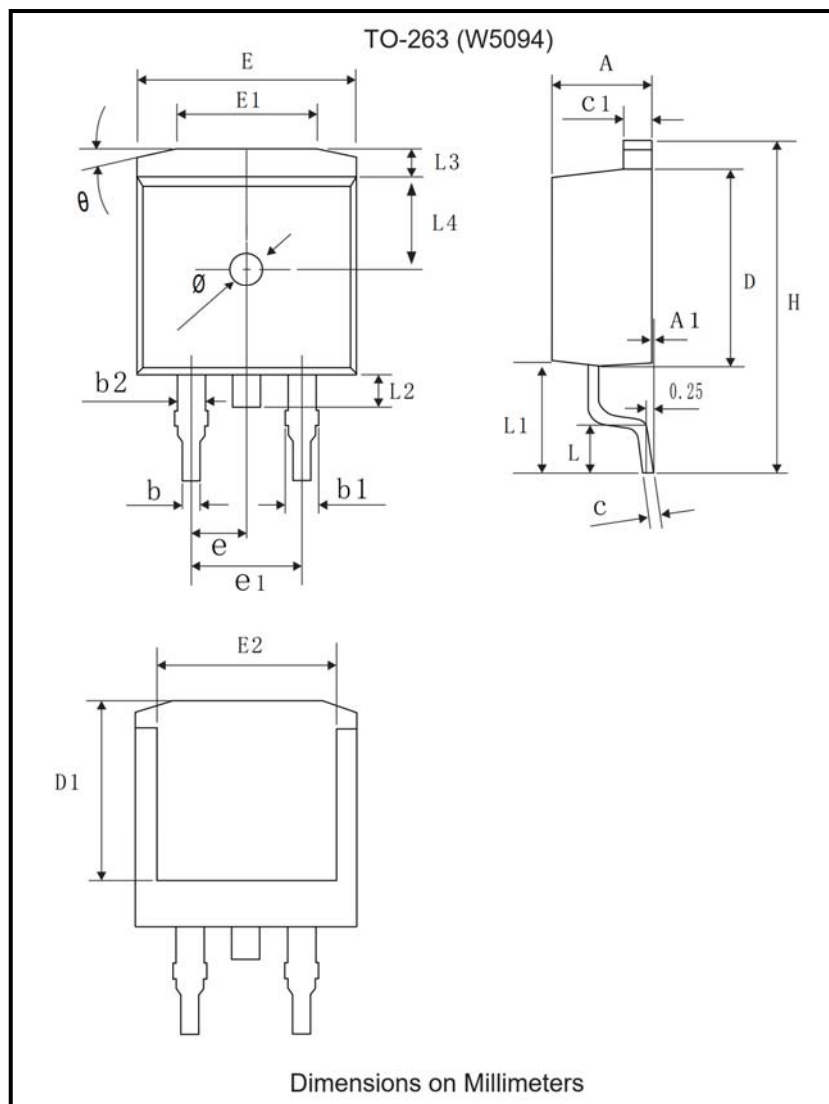


FIG4: Typical Reverse Characteristics

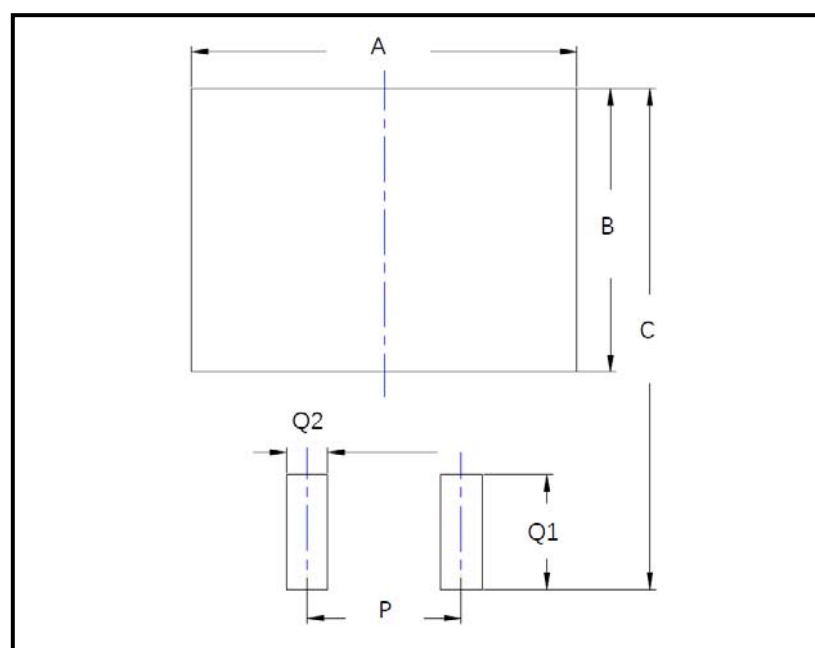


■ **Outline Dimensions**



| TO-263 |          |      |
|--------|----------|------|
| Dim    | Min      | Max  |
| A      | 4.30     | 4.70 |
| A1     | 0.00     | 0.25 |
| b      | 0.70     | 0.90 |
| B1     | 1.17     | 1.37 |
| B2     | 1.17     | 1.37 |
| C      | 0.40     | 0.60 |
| C1     | 1.25     | 1.35 |
| D      | 9.00     | 9.20 |
| D1     | 8.00     | 8.20 |
| H      | 14.9     | 15.5 |
| E      | 9.80     | 10.2 |
| E1     | 6.30     | 6.50 |
| E2     | 7.90     | 8.10 |
| e1     | 4.93     | 5.23 |
| L      | 1.85     | 2.45 |
| L1     | 4.45     | 4.85 |
| L2     | 1.30     | 1.70 |
| L3     | 1.15     | 1.35 |
| L4     | 4.50     | 4.60 |
| Ø      | 1.5 REF  |      |
| e      | 2.54 BSC |      |
| θ      | 13°TYP   |      |

■ **Suggested Pad Layout**



| Dim | Millimeters |
|-----|-------------|
| A   | 12.7        |
| B   | 9.4         |
| C   | 16.6        |
| P   | 5.08        |
| Q1  | 3.8         |
| Q2  | 1.35        |

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