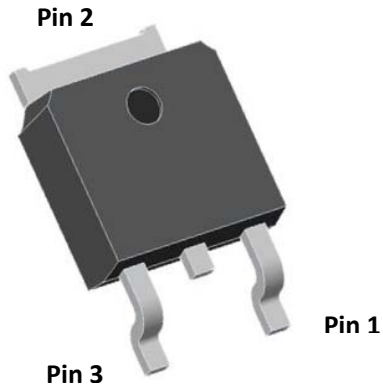


## Schottky Diodes



### 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
- Part no. with suffix "Q" means AEC-Q101 qualified

### Typical Applications

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

### Mechanical Data

- **Package:** TO-252  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen free
- **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             | MBR10100CDQ |
|--|------------------|------------------|-------------|
| Device marking code  | -                | -                | MBR10100CD  |
| Repetitive peak reverse voltage  | V <sub>RRM</sub> | V                | 100         |
| Average Rectified Output Current @60Hz -sine wave, T <sub>C</sub> =130°C                   | I <sub>O</sub>   | A                | 10          |
| Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>a</sub> =25°C | I <sub>FSM</sub> | A                | 120         |
| Current Squared Time @1ms≤t≤8.3ms T <sub>J</sub> =25°C                                     | I <sup>2</sup> t | A <sup>2</sup> s | 60          |
| Storage Temperature  | T <sub>stg</sub> | °C               | -55 ~ +175  |
| Junction Temperature   | T <sub>J</sub>   | °C               | -55 ~ +175  |

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

| PARAMETER                               | SYMBOL         | UNIT | TEST CONDITIONS             | Typ                   | Max  |     |
|---|----------------|------|-----------------------------|-----------------------|------|-----|
| Instantaneous forward voltage per diode | V <sub>F</sub> | V    | I <sub>F</sub> =5A          | T <sub>J</sub> =25°C  | 0.78 | 0.8 |
|   |                |      |                             | T <sub>J</sub> =125°C | 0.65 | 0.7 |
| Typical junction capacitance per diode  | C <sub>J</sub> | pF   | V <sub>R</sub> =4V, f=1 MHz | 160                   | -    |     |
| Instantaneous reverse current per diode | I <sub>R</sub> | uA   | V <sub>R</sub> =100V        | T <sub>J</sub> =25°C  | -    | 10  |
|   |                |      |                             | T <sub>J</sub> =125°C | -    | 500 |

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

| PARAMETER                            | SYMBOL                    | UNIT              | MBR10100CDQ |   |
|--------------------------------------|---------------------------|-------------------|-------------|---|
| Typical thermal resistance per diode | Between junction and case | R <sub>θJ-C</sub> | °C/W        | 5 |



## ■ Characteristics (Typical)

Fig.1: Forward Current Derating Curve

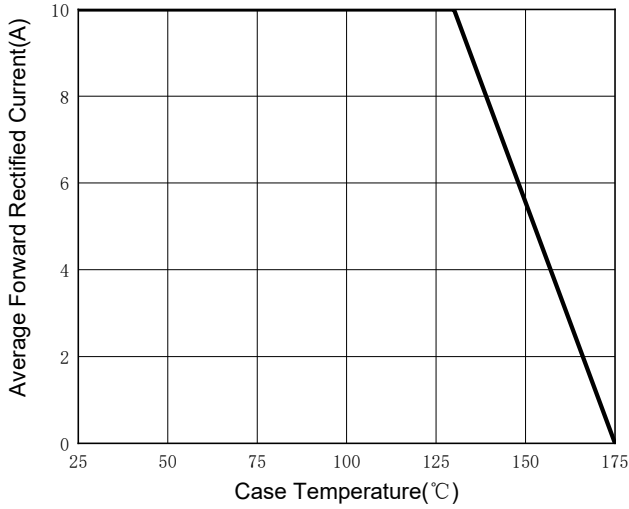


Fig.2: Forward Surge Current Capability(Per Diode)

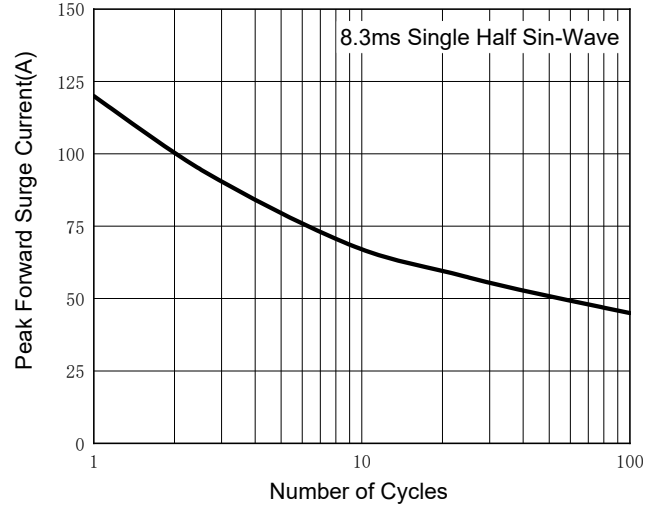


Fig.3: Typical Instantaneous Forward Characteristics(Per Diode)

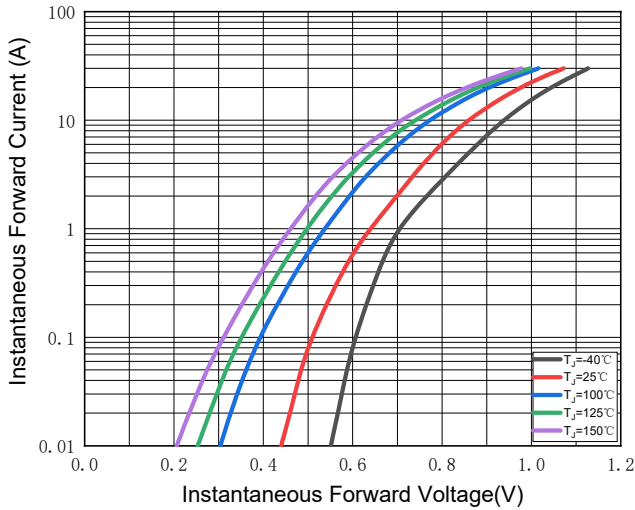


Fig.4: Typical Reverse Leakage Characteristics(Per Diode)

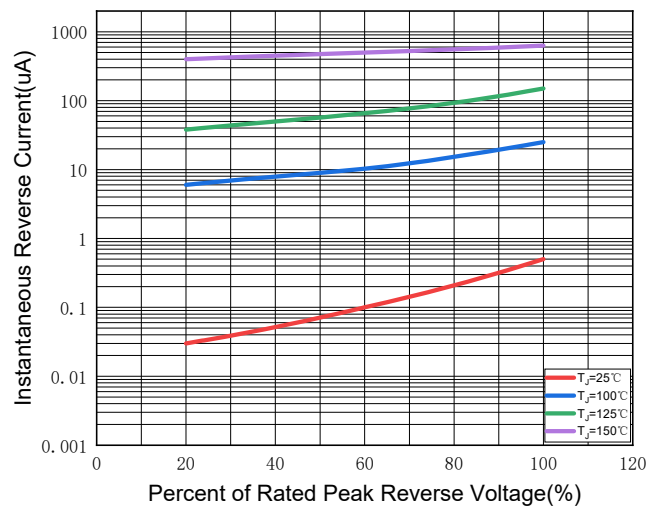
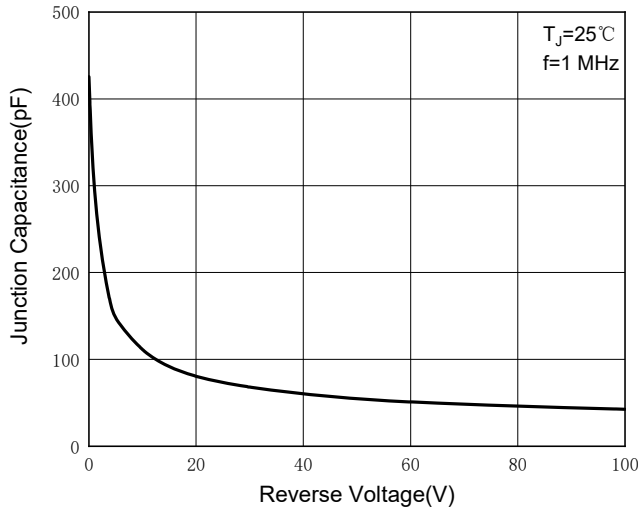


Fig.5: Typical Junction Capacitance (Per Diode)



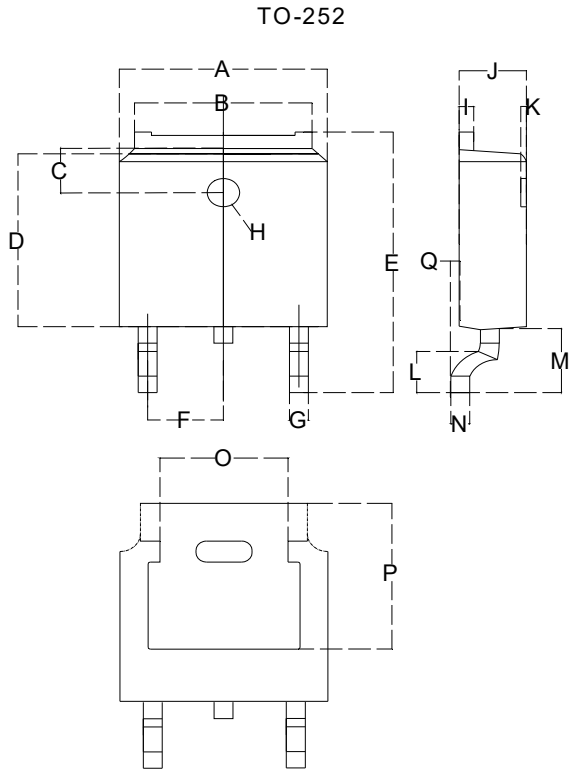


# MBR10100CDQ

## Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g)   | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|-----------------------|-------------------------|----------------------------|---------------|
| MBR10100CDQ   | Approximate 0.32 | 2500                  | 2500                    | 25000                      | Reel          |

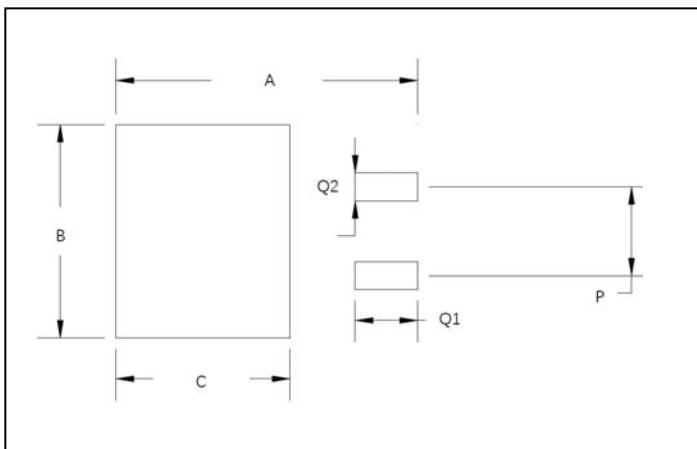
## Outline Dimensions



| TO-252 |         |         |
|--------|---------|---------|
| Dim    | Min     | Max     |
| A      | 6.500   | 6.700   |
| B      | 5.100   | 5.460   |
| C      | 1.400   | 1.800   |
| D      | 6.000   | 6.200   |
| E      | 10.000  | 10.400  |
| F      | 2.166   | 2.366   |
| G      | 0.660   | 0.860   |
| H      | Φ 1.050 | Φ 1.350 |
| I      | 0.460   | 0.580   |
| J      | 2.200   | 2.400   |
| K      | 0       | 0.300   |
| L      | 0.890   | 2.290   |
| M      | 2.730   | 3.080   |
| N      | 0.430   | 0.580   |
| O      | 4.20    | 4.95    |
| P      | 5.15    | 5.45    |
| Q      | 0       | 0.2     |

Dimensions in millimeters

## Suggested Pad Layout



| Dim | Millimeters |
|-----|-------------|
| A   | 11.4        |
| B   | 6.74        |
| C   | 6.23        |
| P   | 4.56        |
| Q1  | 2.28        |
| Q2  | 1.52        |



## MBR10100CDQ

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