



## ■ 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. 7s, per JESD 22-B106

## ■ TYPICAL APPLICATIONS

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

## ■ MECHANICAL DATA

- **Package:** R-6  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Color band denotes cathode end

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

| PARAMETER                                                                                             | SYMBOL           | UNIT             | 20SQ045   |
|-------------------------------------------------------------------------------------------------------|------------------|------------------|-----------|
| Device Marking Code                                                                                   |                  |                  | 20SQ045   |
| Repetitive Peak Reverse Voltage                                                                       | VRRM             | V                | 45        |
| Average Rectified Output Current<br>@60Hz sine wave, R-load, T <sub>a</sub> =25°C                     | I <sub>O</sub>   | A                | 20        |
| Surge(Non-repetitive)Forward Current<br>@60Hz half sine wave, 1 cycle, T <sub>a</sub> =25°C           | I <sub>FSM</sub> | A                | 375       |
| Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C                                                | I <sup>2</sup> t | A <sup>2</sup> s | 583       |
| Storage Temperature                                                                                   | T <sub>stg</sub> | °C               | -55 ~+150 |
| Junction Temperature<br>IN DC Forward Mode-Forward Operations, without reverse bias, t ≤1 h (Fig. 1)① | T <sub>j</sub>   | °C               | -55 ~+200 |

### NOTE

- ① Meets the requirements of IEC 61215 Ed. 2 bypass diode thermal test.

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

| PARAMETER                                                         | SYMBOL            | UNIT | TEST CONDITIONS                                            | 20SQ045 |
|-------------------------------------------------------------------|-------------------|------|------------------------------------------------------------|---------|
| Maximum instantaneous forward voltage drop per diode              | VFM               | V    | I <sub>FM</sub> =20.0A                                     | 0.51    |
| 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  | 0.5     |
|                                                                   | I <sub>RRM2</sub> |      | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =100°C | 50      |

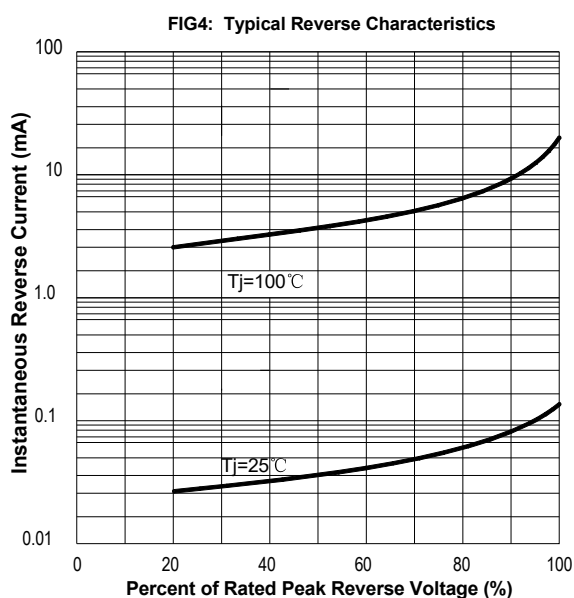
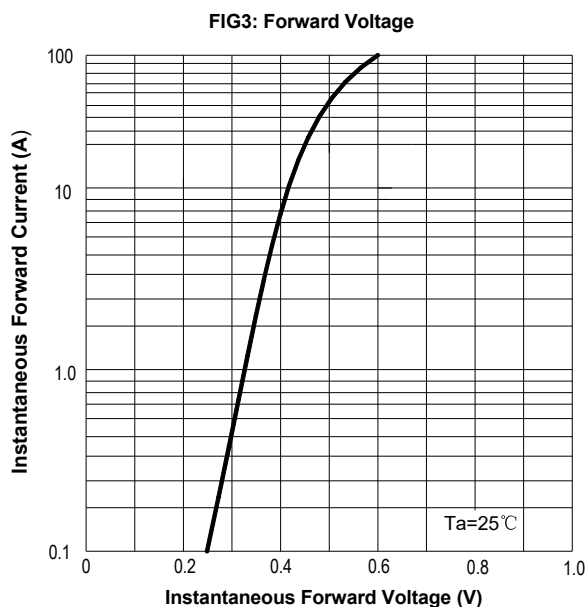
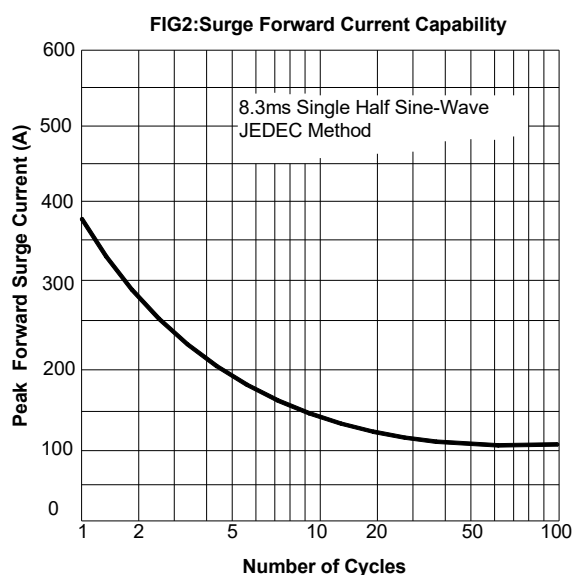
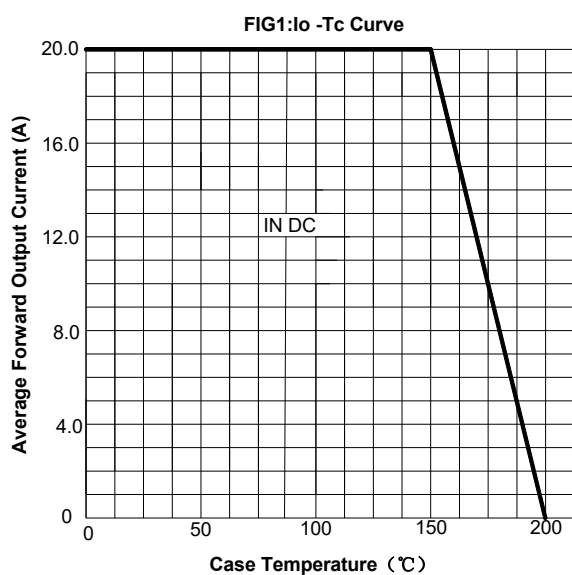
## ■ THERMAL CHARACTERISTICS (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER          | SYMBOL                    | UNIT              | 20SQ045 |
|--------------------|---------------------------|-------------------|---------|
| Thermal Resistance | Between junction and case | R <sub>θJ-C</sub> | °C/W    |
|                    |                           |                   | 2.5     |

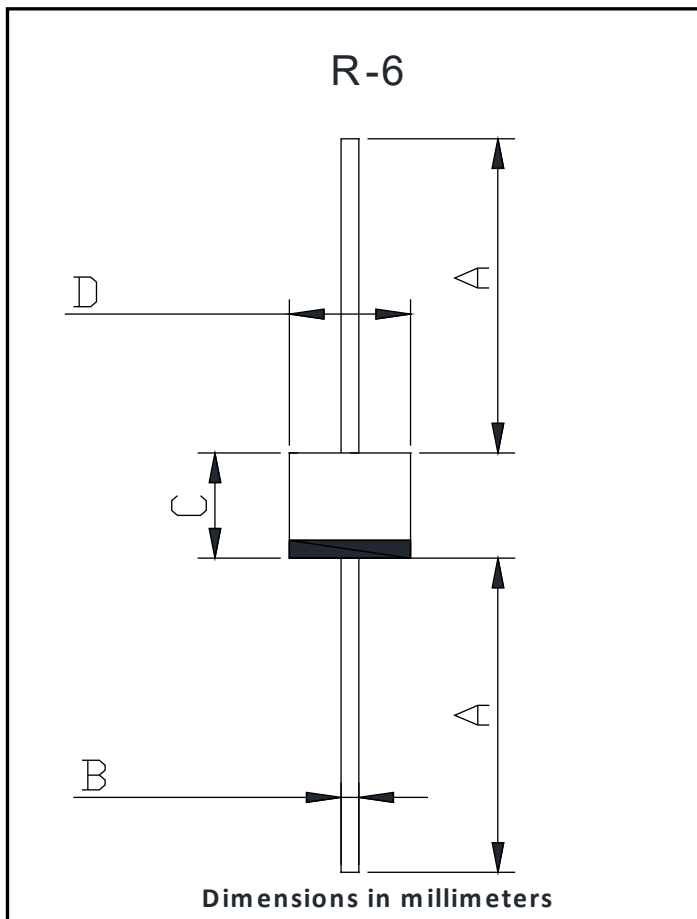
## ■ PACKAGING INFORMATION

| PREFERRED P/N | UNIT WEIGHT(g)   | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|-----------------------|-------------------------|----------------------------|---------------|
| 20SQ045       | Approximate 1.96 | 500                   | 10                      | 5000                       | Tape          |
| 20SQ045       | Approximate 1.96 | 1000                  | 4                       | 4000                       | Reel          |

## ■ CHARACTERISTICS (TYPICAL)



# ■ OUTLINE DIMENSIONS



| R-6 |      |     |
|-----|------|-----|
| Dim | Min  | Max |
| A   | 25.4 | /   |
| B   | 1.2  | 1.3 |
| C   | 8.6  | 9.1 |
| D   | 8.6  | 9.1 |