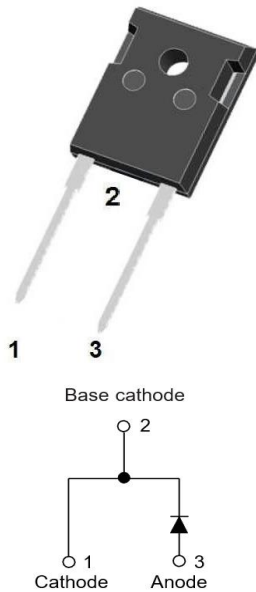


## General Purpose Rectifier Diodes



### Features

- High surge forward current capability
- 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 Application

- Input rectification

### Mechanical Data

- **Package:** TO-247AC  
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>j</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                    | SYMBOL           | UNIT              | 90EPS19    |
|----------------------------------------------------------------------------------------------|------------------|-------------------|------------|
| Device marking code                                                                          |                  |                   | 90EPS19    |
| Maximum Repetitive Peak Reverse Voltage                                                      | V <sub>RRM</sub> | V                 | 1900       |
| Maximum RMS Voltage                                                                          | V <sub>RMS</sub> | V                 | 1330       |
| Maximum DC Blocking Voltage                                                                  | V <sub>DC</sub>  | V                 | 1900       |
| Average Rectified Output Current<br>@60Hz half sine-wave, R-load, T <sub>c</sub> (FIG.1)     | I <sub>O</sub>   | A                 | 90         |
| Surge(Non-repetitive) Forward Current<br>@10ms half sine-wave, 1 cycle, T <sub>j</sub> =25°C | I <sub>FSM</sub> | A                 | 1400       |
| Current Squared Time @1ms≤t≤10ms T <sub>j</sub> =25°C                                        | I <sup>2</sup> t | A <sup>2</sup> s. | 9800       |
| Storage Temperature                                                                          | T <sub>stg</sub> | °C                | -55 ~ +150 |
| Junction Temperature                                                                         | T <sub>j</sub>   | °C                | -55 ~ +150 |

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

| PARAMETER                                                         | SYMBOL          | UNIT | TEST CONDITIONS                                            | Min | Typ  | Max  |
|-------------------------------------------------------------------|-----------------|------|------------------------------------------------------------|-----|------|------|
| Instantaneous forward voltage drop per diode                      | V <sub>FM</sub> | V    | I <sub>FM</sub> =45.0A                                     |     | 1.00 | 1.1  |
|                                                                   |                 |      | I <sub>FM</sub> =90.0A                                     | -   | 1.15 | 1.3  |
| Maximum DC reverse current at rated DC blocking voltage per diode | I <sub>R</sub>  | uA   | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>j</sub> =25°C  | -   | -    | 10   |
|                                                                   |                 |      | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>j</sub> =125°C | -   | -    | 1000 |
| Junction Capacitance                                              | C <sub>j</sub>  | pF   | 1MHz and Applied on 4.0VD.C                                | -   | 325  | -    |



## 90EPS19

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

| PARAMETER                                            | SYMBOL            | UNIT | 90EPS19 |
|------------------------------------------------------|-------------------|------|---------|
| Typical Thermal Resistance Between junction and case | R <sub>θJ-C</sub> | °C/W | 0.2     |

### ■ Characteristics (Typical)

FIG.1: I<sub>o</sub>-T<sub>C</sub> Curve

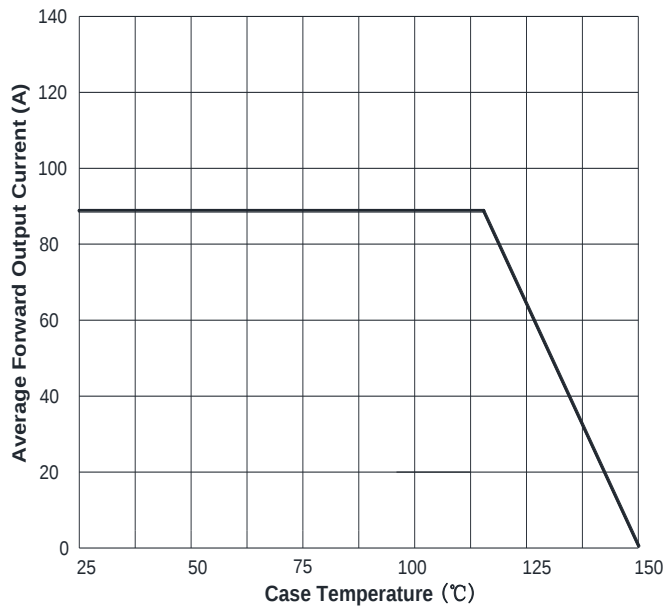


FIG2: Surge Forward Current Capability

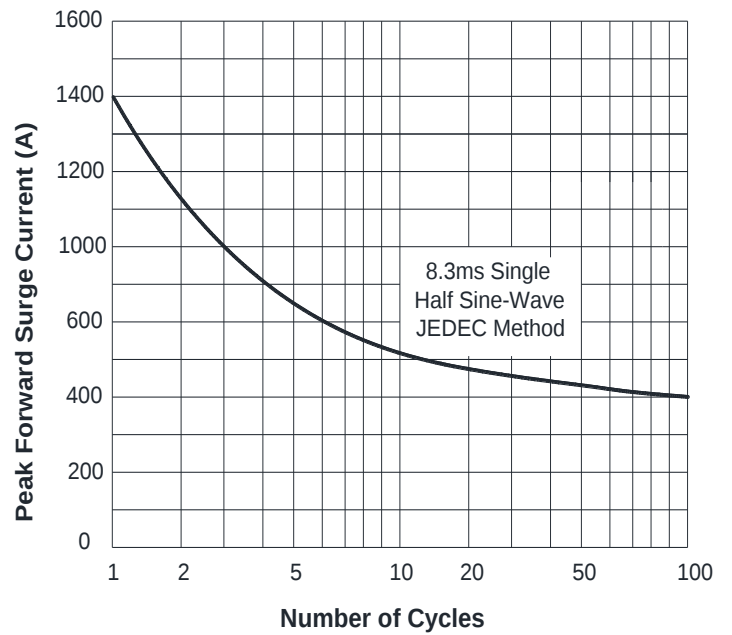


FIG3: Typical Forward Voltage

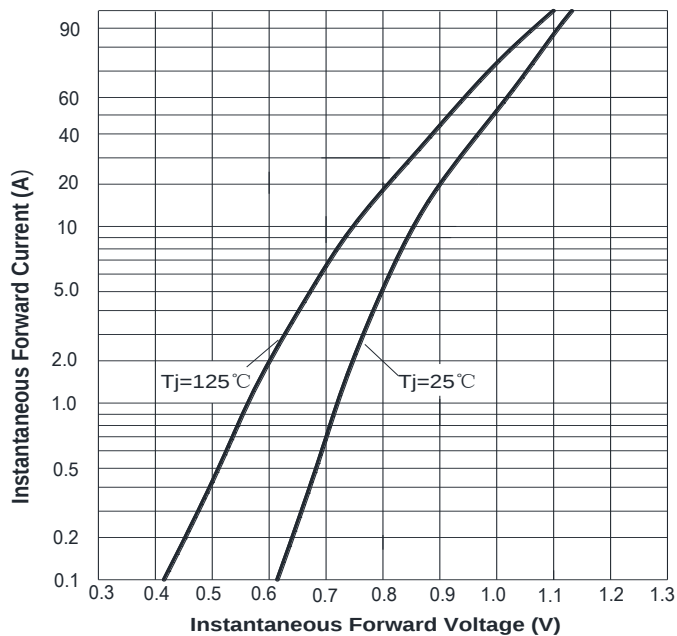
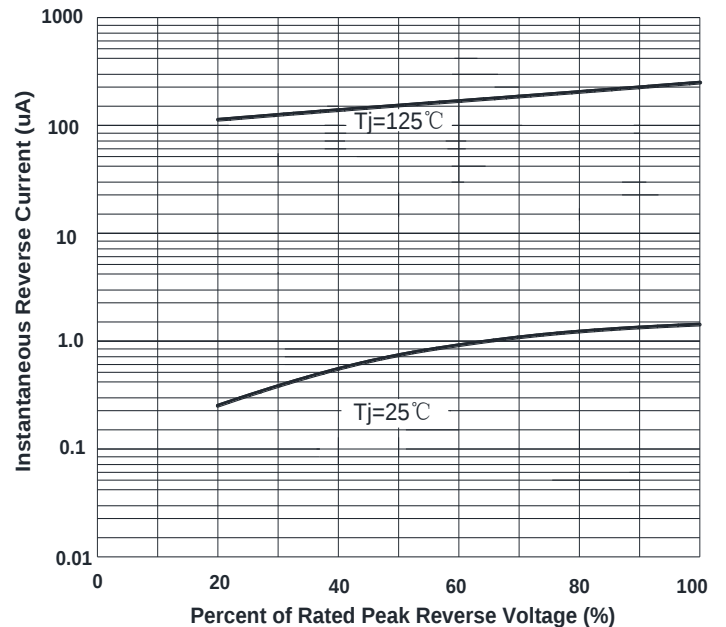
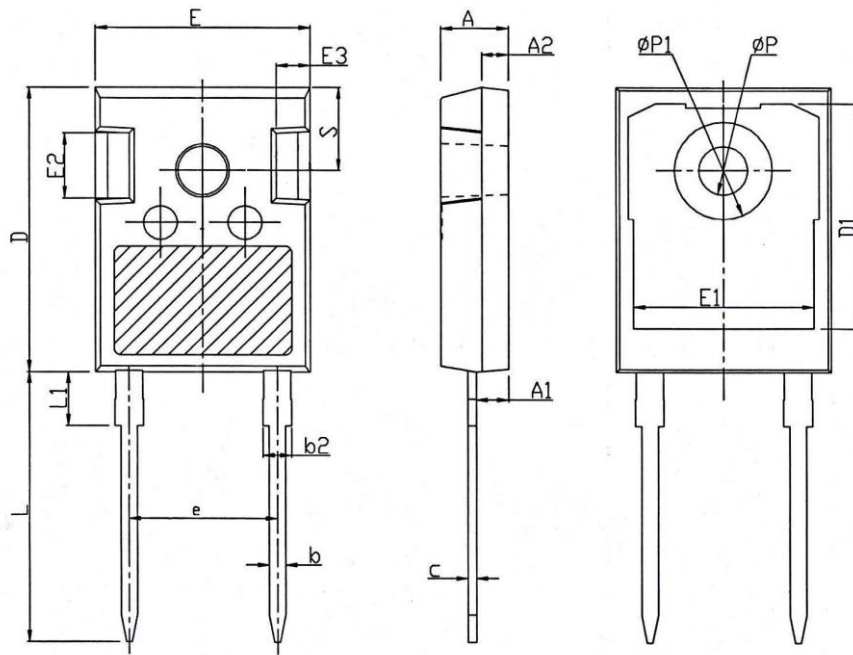


FIG.4: Typical Reverse Characteristics





## ■Outline Dimensions



| TO-247AC |          |       |
|----------|----------|-------|
| Dim      | Min      | Max   |
| A        | 4.80     | 5.20  |
| A1       | 2.21     | 2.61  |
| A2       | 1.85     | 2.15  |
| b        | 1.11     | 1.36  |
| b2       | 1.91     | 2.21  |
| c        | 0.51     | 0.75  |
| D        | 20.70    | 21.30 |
| D1       | 16.25    | 16.85 |
| E        | 15.50    | 16.10 |
| E1       | 13.00    | 13.60 |
| E2       | 4.80     | 5.20  |
| E3       | 2.30     | 2.70  |
| e        | 10.88BSC |       |
| L        | 19.62    | 20.22 |
| L1       | -        | 4.30  |
| φ P      | 3.40     | 3.80  |
| φ P1     | -        | 7.30  |
| S        | 6.15BSC  |       |



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