



## 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-247-2L  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>a</sub>=25 Unless otherwise specified

| PARAMETER                                                                                  | SYMBOL           | UNIT              | 45EPS16    |
|--------------------------------------------------------------------------------------------|------------------|-------------------|------------|
| Device marking code                                                                        |                  |                   | 45EPS16    |
| Repetitive Peak Reverse Voltage                                                            | V <sub>RRM</sub> | V                 | 1600       |
| Average Rectified Output Current<br>@60Hz half sine-wave, R-load, T <sub>c</sub> (FIG.1)   | I <sub>o</sub>   | A                 | 45         |
| Surge(Non-repetitive) Forward Current<br>@60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25 | I <sub>FSM</sub> | A                 | 600        |
| Current Squared Time<br>@1ms≤t≤10ms T <sub>j</sub> =25                                     | I <sup>2</sup> t | A <sup>2</sup> s. | 1494       |
| Storage Temperature                                                                        | T <sub>stg</sub> |                   | -55 ~ +150 |
| Junction Temperature                                                                       | T <sub>j</sub>   |                   | -55 ~ +150 |

### ■Electrical Characteristics T<sub>a</sub>=25 Unless otherwise specified

| PARAMETER                                                  | SYMBOL            | UNIT | TEST CONDITIONS                                         | 45EPS16 |
|------------------------------------------------------------|-------------------|------|---------------------------------------------------------|---------|
| Maximum instantaneous forward voltage                      | V <sub>FM</sub>   | V    | I <sub>FM</sub> =45.0A<br>T <sub>a</sub> =25            | 1.4     |
|                                                            |                   |      | I <sub>FM</sub> =45.0A<br>T <sub>a</sub> =125           | 1.3     |
| Maximum DC reverse current at<br>rated DC blocking voltage | I <sub>RRM1</sub> | uA   | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =25 | 10      |
|                                                            | I <sub>RRM2</sub> | mA   | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub>     |         |



## 45EPS16

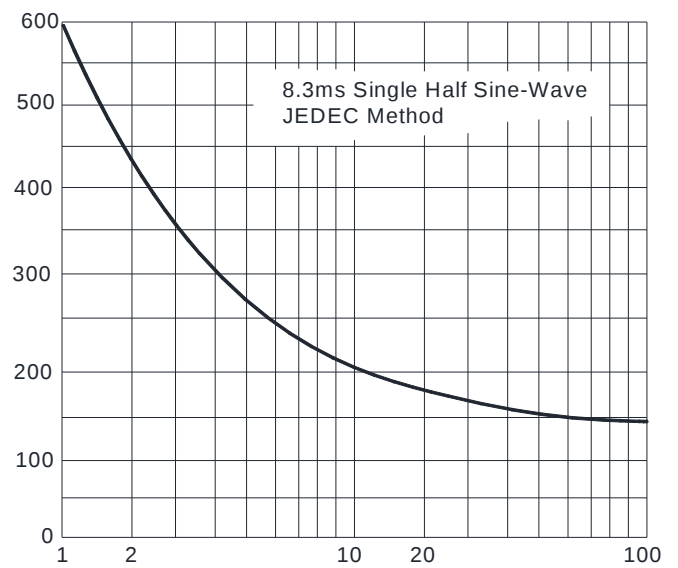
### ■ Thermal Characteristics $T_a=25$ Unless otherwise specified

| PARAMETER          |                              | SYMBOL           | UNIT | 45EPS16 |
|--------------------|------------------------------|------------------|------|---------|
| Thermal Resistance | Between junction and ambient | $R_{\theta J-A}$ | /W   | 40      |
|                    | Between junction and case    | $R_{\theta J-C}$ |      | 5       |

### ■ Ordering Information (Example)

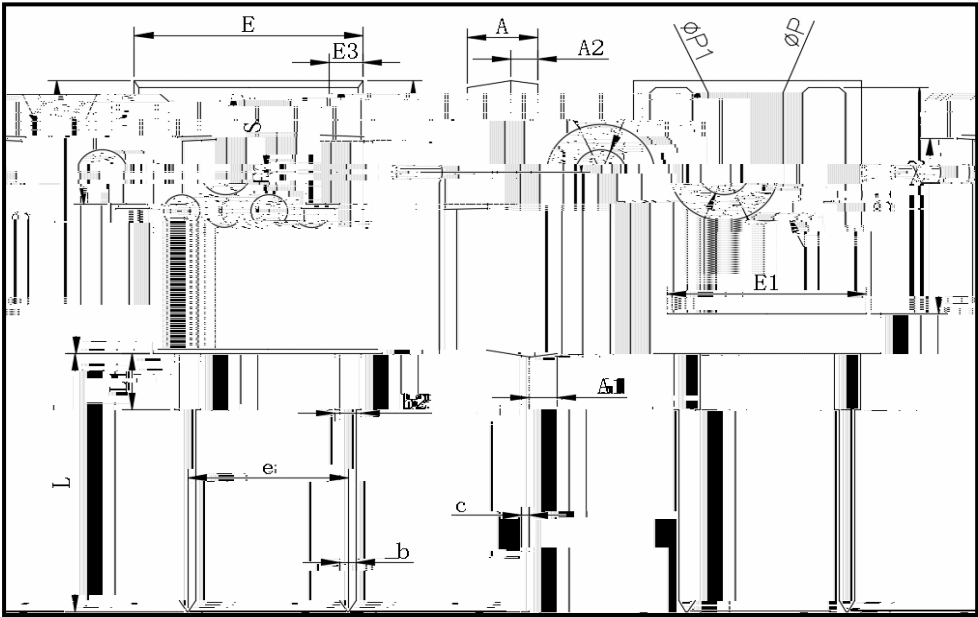
| PREFERRED P/N | UNIT WEIGHT(g)  | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| 45EPS16       | Approximate 6.0 | 30                   | 360                     | 1800                       | Tube          |

### ■ Characteristics (Typical)





■Outline Dimensions



| TO-247-2L |           |       |
|-----------|-----------|-------|
| Dim       | Min       | Max   |
| A         | 4.80      | 5.20  |
| A1        | 2.21      | 2.61  |
| A2        | 1.85      | 2.15  |
| b         | 1.00      | 1.40  |
| b2        | 1.91      | 2.21  |
| c         | 0.50      | 0.70  |
| 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         | 10.88 TYP |       |
| L         | 19.62     | 20.22 |
| L1        | -         | 4.30  |
| φ P       | 3.40      | 3.80  |
| φ P1      | -         | 7.30  |
| S         | 6.15 TYP  |       |

