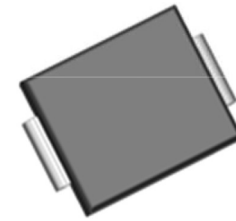


## Features

- Schottky barrier diodes
- Low forward voltage drop
- High Tunction Temperature
- Moisture sensitivity: level 1, per J-STD-020
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Add suffix "E" for Halogen Free
- Halogen-free according to IEC 61249-2-21 definition



DO-214AB ( SMC )

## Typical Applications

For use in low voltage,high frequency inverters,free wheeling, and polarity protection application

### Maximum Ratings (TA = 25 °C unless otherwise noted)

| Parameter                                                                          | Symbol         | SK57<br>SK57E | SK58<br>SK58E | SK59<br>SK59E | SK5B<br>SK5BE | Unit |
|------------------------------------------------------------------------------------|----------------|---------------|---------------|---------------|---------------|------|
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$      | 70            | 80            | 90            | 100           | V    |
| Maximum RMS voltage                                                                | $V_{RMS}$      | 42            | 56            | 63            | 70            | V    |
| Maximum DC blocking voltage                                                        | $V_{DC}$       | 70            | 80            | 90            | 100           | V    |
| Maximum average forward rectified current                                          | $I_{F(AV)}$    | 5.0           |               |               |               | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 120           |               |               |               | A    |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | - 55 to + 150 |               |               |               | °C   |

### Electrical Characteristics (TA = 25 °C unless otherwise noted)

| Parameter                                               | Test Conditions                         | Symbol         | SK57<br>SK57E | SK58<br>SK58E | SK59<br>SK59E | SK5B<br>SK5BE | Unit |
|---------------------------------------------------------|-----------------------------------------|----------------|---------------|---------------|---------------|---------------|------|
| Maximum instantaneous forward voltage                   | I <sub>F</sub> =5A, T <sub>A</sub> =25℃ | V <sub>F</sub> | 0.79          |               |               |               | V    |
| Maximum DC reverse current at rated DC blocking voltage | T <sub>A</sub> =25℃                     | I <sub>R</sub> | 30            |               |               |               | uA   |
|                                                         | T <sub>A</sub> =125℃                    |                | 2000          |               |               |               |      |
| Typical junction capacitance                            | 4.0 V, 1 MHz                            | C <sub>J</sub> | 96            |               |               |               | pF   |

### Thermal Characteristics

| Parameter                                 | Symbol           | SK57<br>SK57E | SK58<br>SK58E | SK59<br>SK59E | SK5B<br>SK5BE | Unit |
|-------------------------------------------|------------------|---------------|---------------|---------------|---------------|------|
| Typical thermal resistance <sup>(1)</sup> | R <sub>θJA</sub> | 62            |               |               |               | °C/W |
|                                           | R <sub>θJC</sub> | 22            |               |               |               |      |
|                                           | R <sub>θJI</sub> | 15            |               |               |               |      |

Note1:Thermal resistance from junction to lead,mounted on PCB with 8.0×8.0mm copper pads

## Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

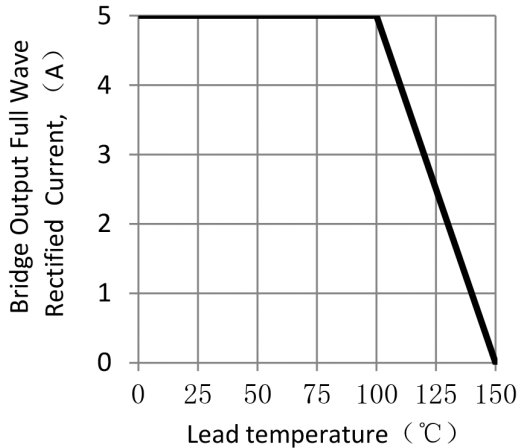


Figure 1. Forward Current Derating Curve

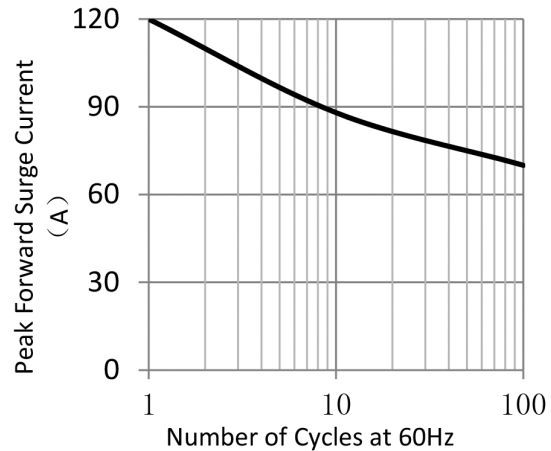


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

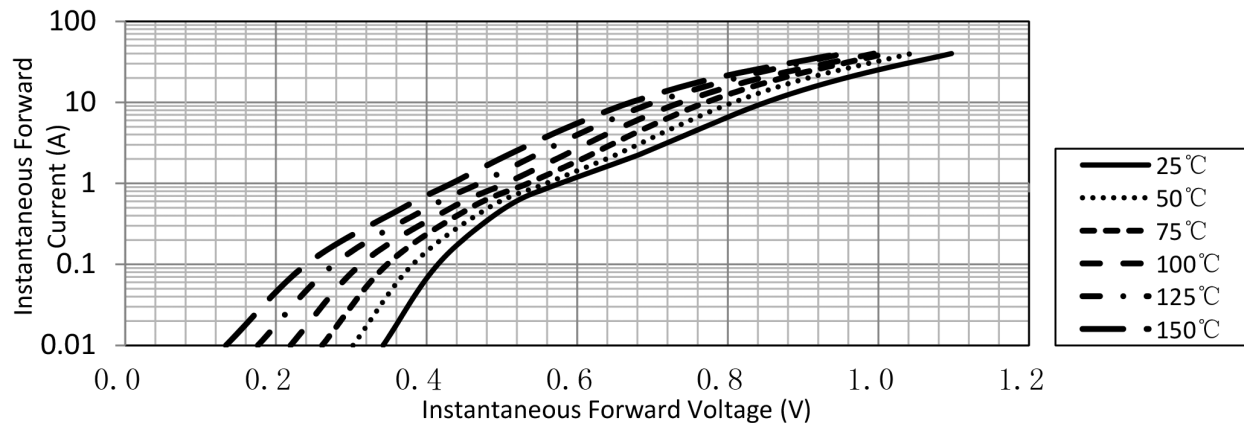


Figure 3. Typical Instantaneous Forward Characteristics

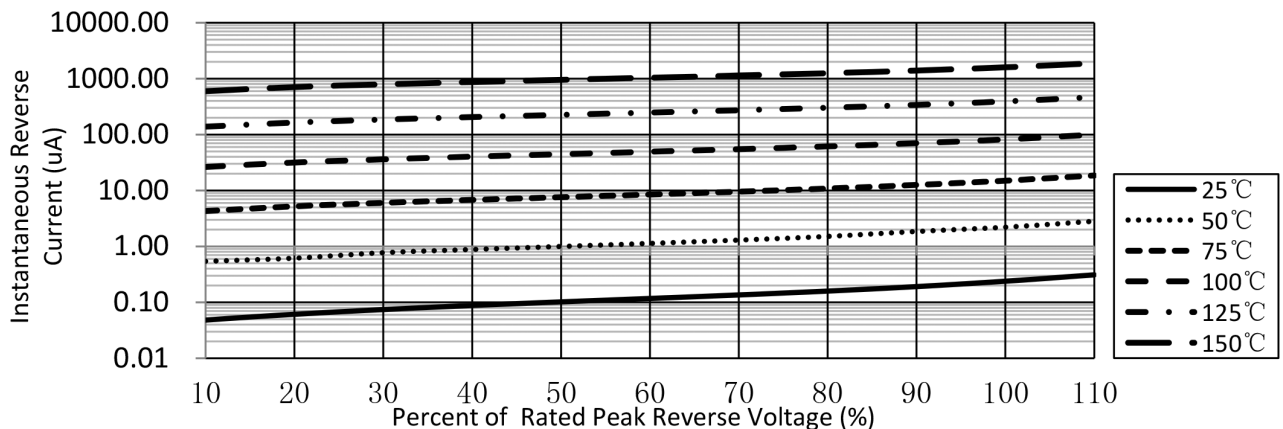
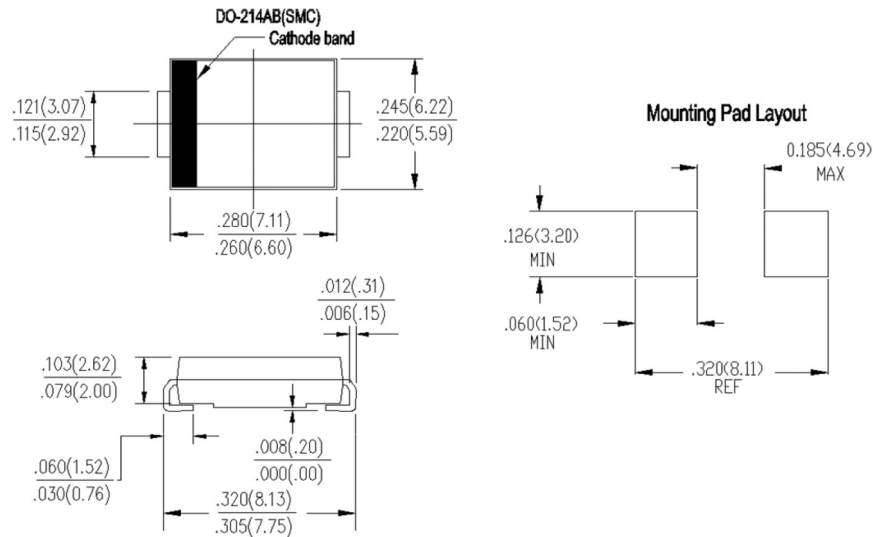


Figure 4. Typical Reverse Characteristics

## Package Outline Dimensions

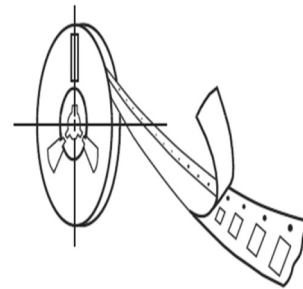
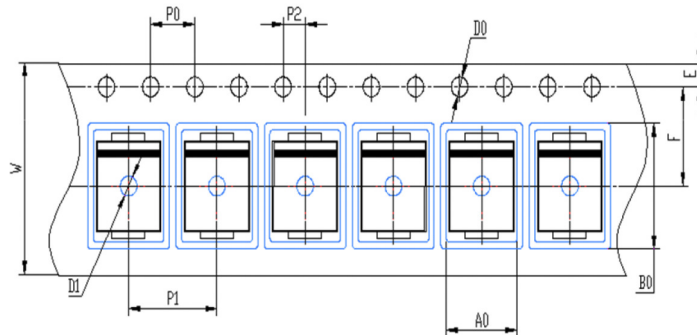
in inches (millimeters)



## Packing Information

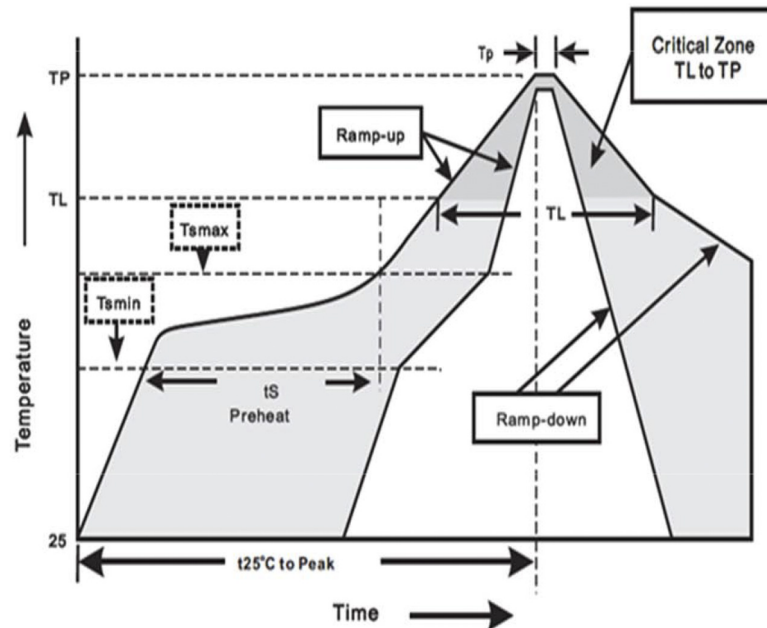
3000 pcs/Reel, 18 Reels/Box; 12mm Tape, 13" Reel

### Tape & Reel Specification



| Symbo | SMC (mm)     |
|-------|--------------|
| W     | 16 ± 0.2     |
| E     | 1.75 ± 0.1   |
| F     | 7.5 ± 0.05   |
| D0    | 1.5 ± 0.1    |
| D1    | 1.50 +0.1/-0 |
| P0    | 4.0 ± 0.1    |
| P1    | 8.0 ± 0.1    |
| P2    | 2.0 ± 0.05   |
| A0    | 6.22 ± 0.1   |
| B0    | 8.31 ± 0.1   |

## Soldering Parameters



| Reflow Soldering                                  |                               | Sn-Pb Eutectic Assembly | Pb-Free assembly |
|---------------------------------------------------|-------------------------------|-------------------------|------------------|
| Pre Heat                                          | - Temperature Min (Ts(min))   | 100°C                   | 150°C            |
|                                                   | - Temperature Max (Ts(max))   | 150°C                   | 200°C            |
|                                                   | - Time (min to max) (ts)      | 60 – 120 secs           | 60 – 180 secs    |
| Average ramp up rate (Liquidus) Temp (TL) to peak |                               | 3°C/second max          | 3°C/second max   |
| TS(max) to TL - Ramp-up Rate                      |                               | 3°C/second max          | 3°C/second max   |
| Reflow                                            | - Temperature (TL) (Liquidus) | 183°C                   | 217°C            |
|                                                   | - Time (min to max) (ts)      | 60 – 150 seconds        | 60 – 150 seconds |
| Peak Temperature (TP)                             |                               | 240+0/-5 °C             | 240+0/-5°C       |
| Time within 5°C of actual peak Temperature (tp)   |                               | 10 –30 seconds          | 20 – 40 seconds  |
| Ramp-down Rate                                    |                               | 6°C/second max          | 6°C/second max   |
| Time 25°C to peak Temperature (TP)                |                               | 6 minutes Max.          | 8 minutes Max.   |
| Do not exceed                                     |                               | 260°C                   | 260°C            |

| Wave Soldering     |            |
|--------------------|------------|
| Peak Temperature : | 260+0/-5°C |
| Dipping Time :     | 10 seconds |
| Soldering :        | 1 time     |