

## Features

- Schottky barrier diodes
- Low forward voltage drop
- High Junction 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
- AEC-Q101 qualified



DO-214AC (SMA)

## Typical Applications

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

| <b>Maximum Ratings</b> (TA = 25 °C unless otherwise noted)                         |                |                   |      |
|--|----------------|-------------------|------|
| Parameter  | Symbol         | SK3C0A<br>SK3C0AE | Unit |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 200               | V    |
| Maximum RMS voltage  | $V_{RMS}$      | 140               | V    |
| Maximum DC blocking voltage  | $V_{DC}$       | 200               | V    |
| Maximum average forward rectified current  | $I_{F(AV)}$    | 3.0               | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 100               | A    |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | - 55 to + 150     | °C   |

| <b>Electrical Characteristics</b> (TA = 25 °C unless otherwise noted) |                          |        |                   |      |
|---|--------------------------|--------|-------------------|------|
| Parameter   | Test Conditions          | Symbol | SK3C0A<br>SK3C0AE | Unit |
| Maximum instantaneous forward voltage                                 | $I_F=3A, T_A=25^\circ C$ | $V_F$  | 0.85              | V    |
| Maximum DC reverse current at rated DC blocking voltage               | $T_A=25^\circ C$         | $I_R$  | 30                | uA   |
|   | $T_A=125^\circ C$        |        | 1000              |      |
| Typical junction capacitance  | 4.0 V, 1 MHz             | $C_J$  | 80                | pF   |

| <b>Thermal Characteristics</b>            |                 |                   |      |
|---|-----------------|-------------------|------|
| Parameter                                 | Symbol          | SK3C0A<br>SK3C0AE | Unit |
| Typical thermal resistance <sup>(1)</sup> | $R_{\theta JA}$ | 77                | °C/W |
|   | $R_{\theta JC}$ | 40                |      |
|   | $R_{\theta JI}$ | 18                |      |

Note1: Thermal resistance from junction to lead, mounted on PCB with 5.0x5.0mm copper pads

## Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

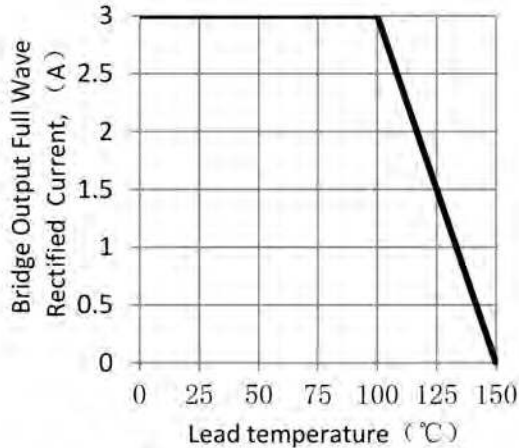


Figure 1. Forward Current Derating Curve

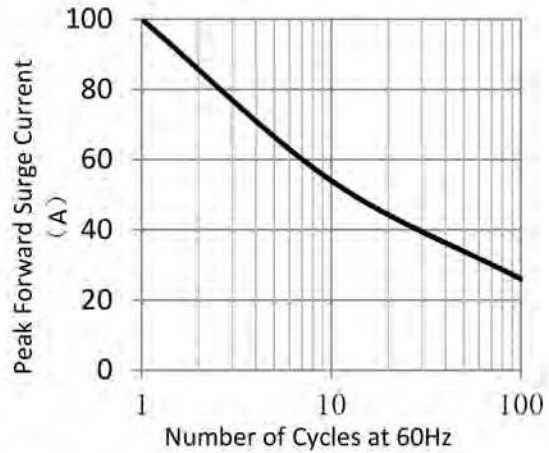


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

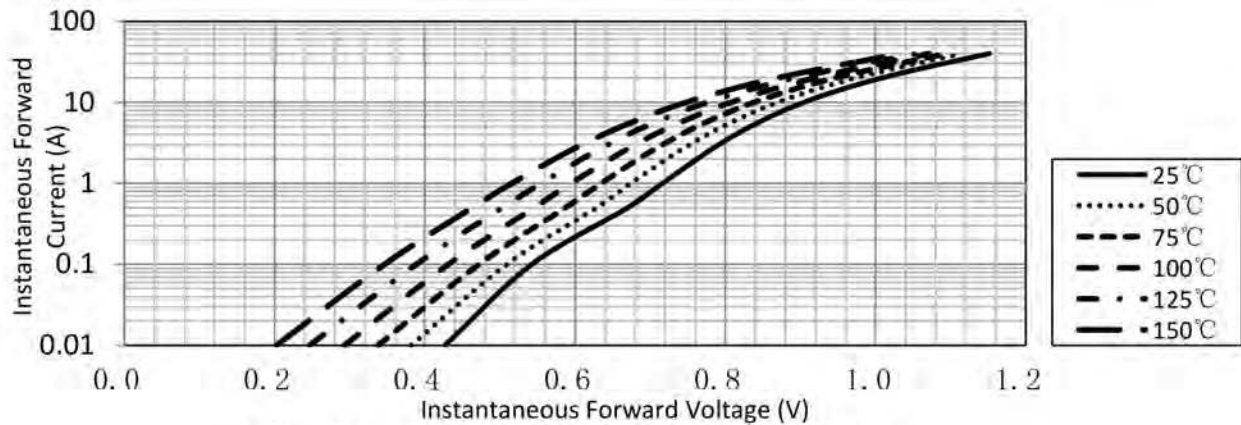


Figure 3. Typical Instantaneous Forward Characteristics

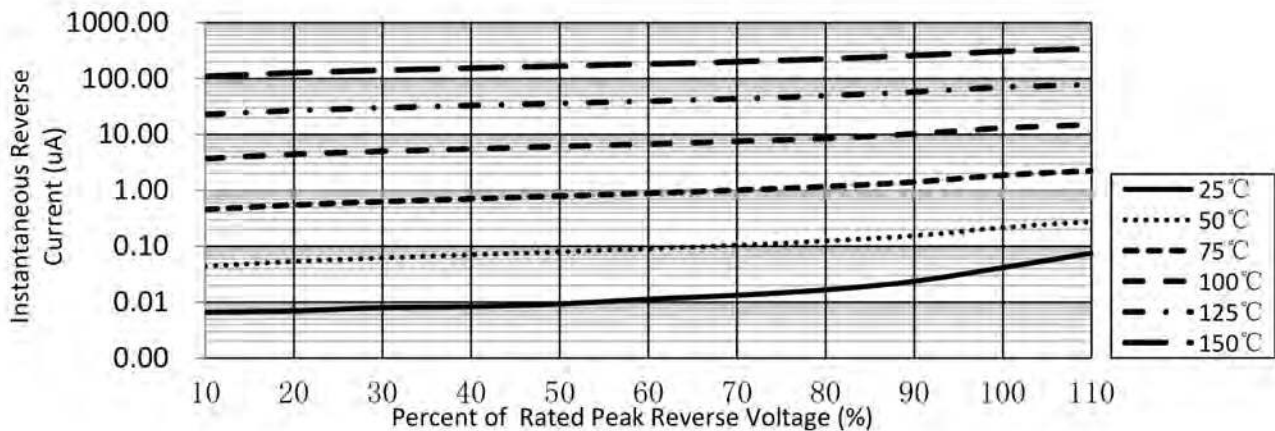
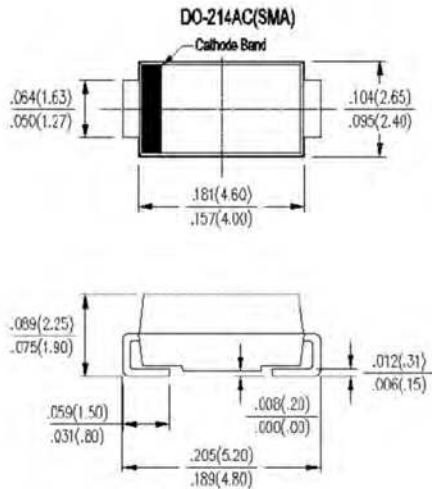


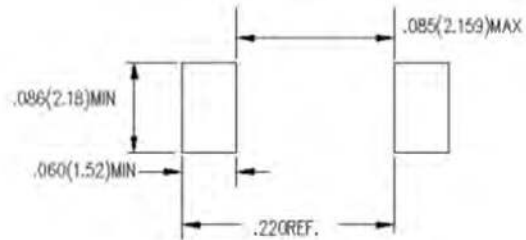
Figure 4. Typical Reverse Characteristics

## Package Outline Dimensions

in inches (millimeters)



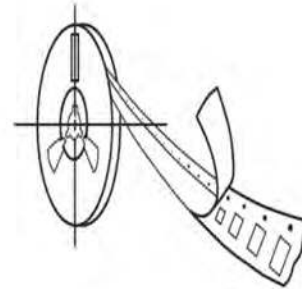
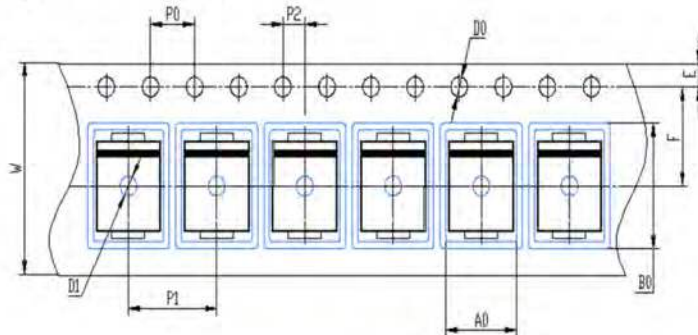
## MOUNTING PAD LAYOUT



## Packing Information

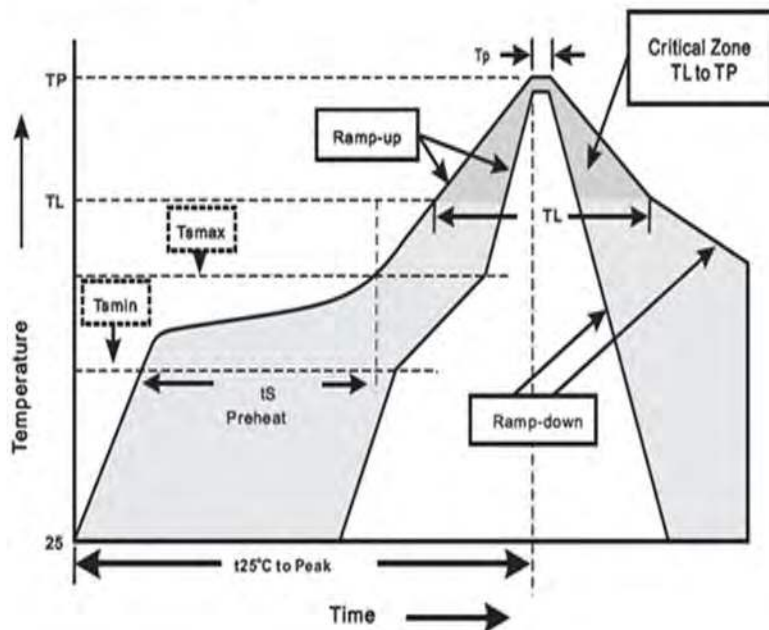
7500 pcs/Reel, 18 Reels/Box; 12mm Tape, 13" Reel

## Tape & Reel Specification



| Symbol | SMA (mm)     |
|--------|--------------|
| W      | 12 ± 0.2     |
| E      | 1.75 ± 0.1   |
| F      | 5.5 ± 0.05   |
| D0     | 1.5 ± 0.1    |
| D1     | 1.50 +0.1/-0 |
| P0     | 4.0 ± 0.1    |
| P1     | 4.0 ± 0.1    |
| P2     | 2.0 ± 0.05   |
| A0     | 2.65 ± 0.1   |
| B0     | 5.25 ± 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     |