



THE DATASHEET OF SK23A



Features

- 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



Package: DO-214AC (SMA)

Applications

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

Maximum Ratings (T_A = 25°C unless otherwise noted)

| Parameter | Symbol | SK22A | SK23A | SK24A | SK25A | SK26A | Unit |
|--|-----------------------------------|-------------|-------|-------|-------|-------|------|
| Maximum Repetitive Peak Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS Voltage | V _{RMS} | 14 | 21 | 28 | 35 | 42 | V |
| Maximum DC Blocking Voltage | V _{DC} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum Average Forward Rectified Current | I _{F(AV)} | 2.0 | | | | | A |
| Peak Forward Surge Current (8.3 ms single half sine-wave superimposed on rated load) | I _{FSM} | 50 | | | | | A |
| Operating Junction and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | | | | | °C |

Electrical Characteristics (T_A = 25°C unless otherwise noted)

| Parameter | Test Conditions | Symbol | SK22A | SK23A | SK24A | SK25A | SK26A | Unit |
|---|-----------------------|----------------|-------|-------|-------|-------|-------|------|
| Maximum Instantaneous Forward Voltage | I _F =2A | V _F | 0.55 | | | 0.70 | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | T _A =25°C | I _R | 0.20 | | | 0.15 | | mA |
| | T _A =125°C | | 10 | | | | | |
| Typical Junction Capacitance | 4.0 V, 1 MHz | C _J | 200 | | | | | pF |

Thermal Characteristics

| Parameter | Symbol | Value | Unit |
|---|------------------|-------|------|
| Typical Thermal Resistance ⁽¹⁾ | R _{θJA} | 82 | °C/W |
| | R _{θJC} | 42 | |
| | R _{θJL} | 20 | |

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

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

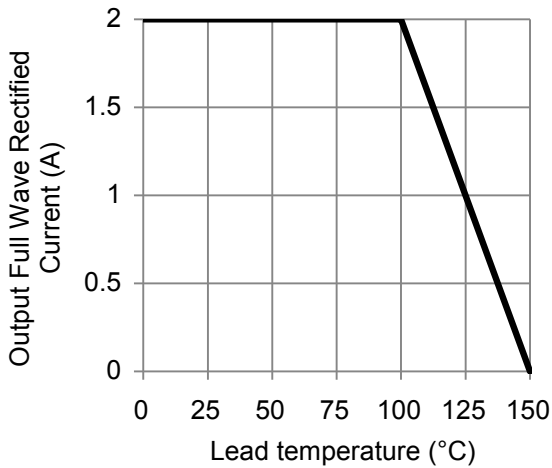


Figure 1. Forward Current Derating Curve

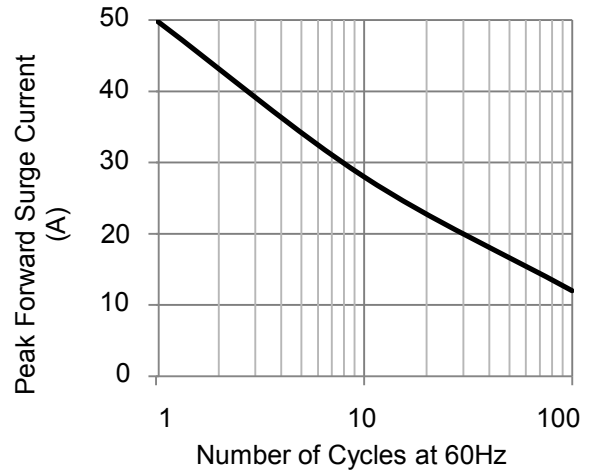


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

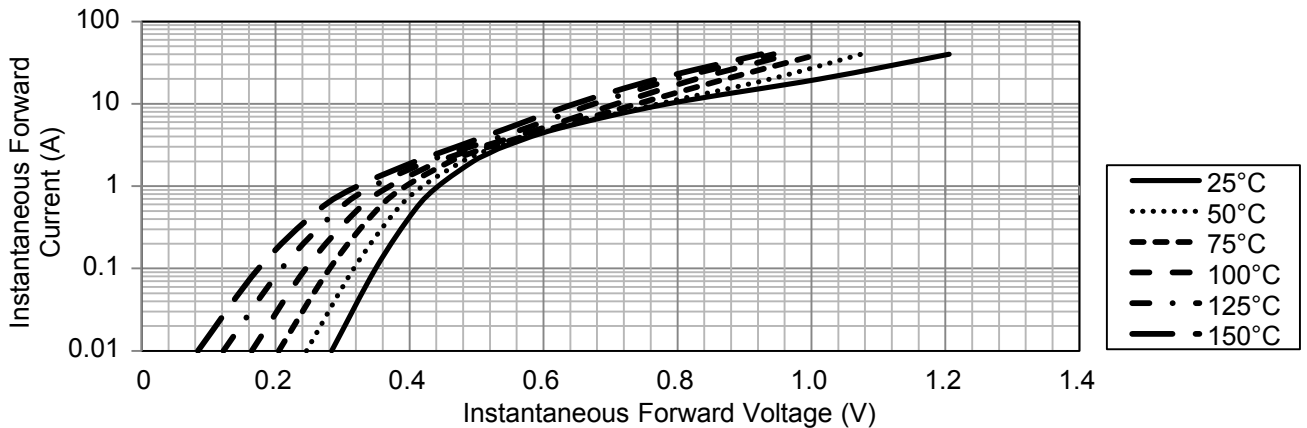


Figure 3. Typical Instantaneous Forward Characteristics (SK22A thru SK24A)

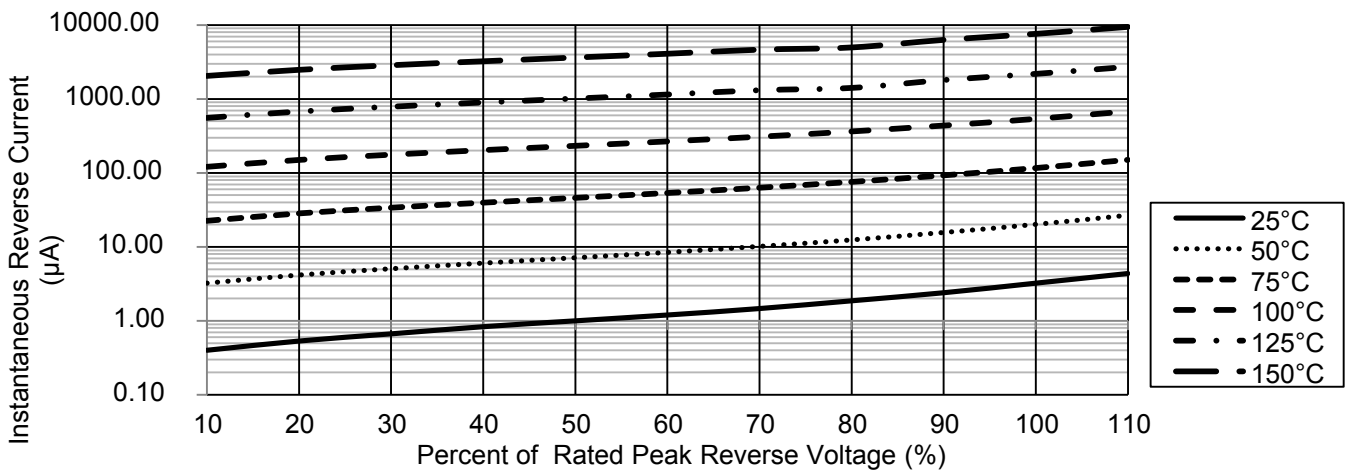


Figure 4. Typical Reverse Characteristics (SK22A thru SK24A)

SK22A thru SK26A

Surface Mount Schottky Rectifier
 Reverse Voltage 20-60V Forward Current 2A

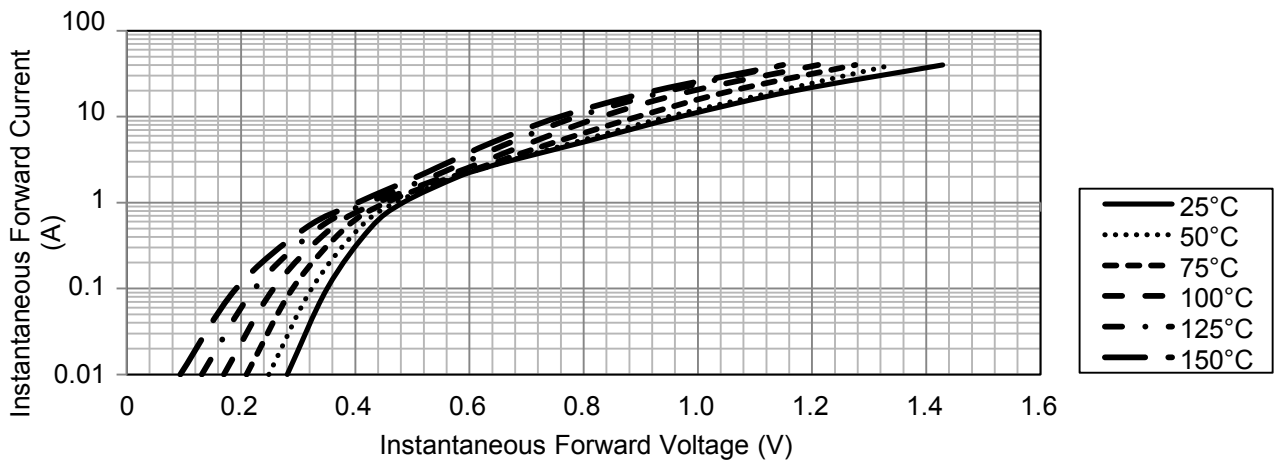


Figure 5. Typical Instantaneous Forward Characteristics
 (SK25A thru SK26A)

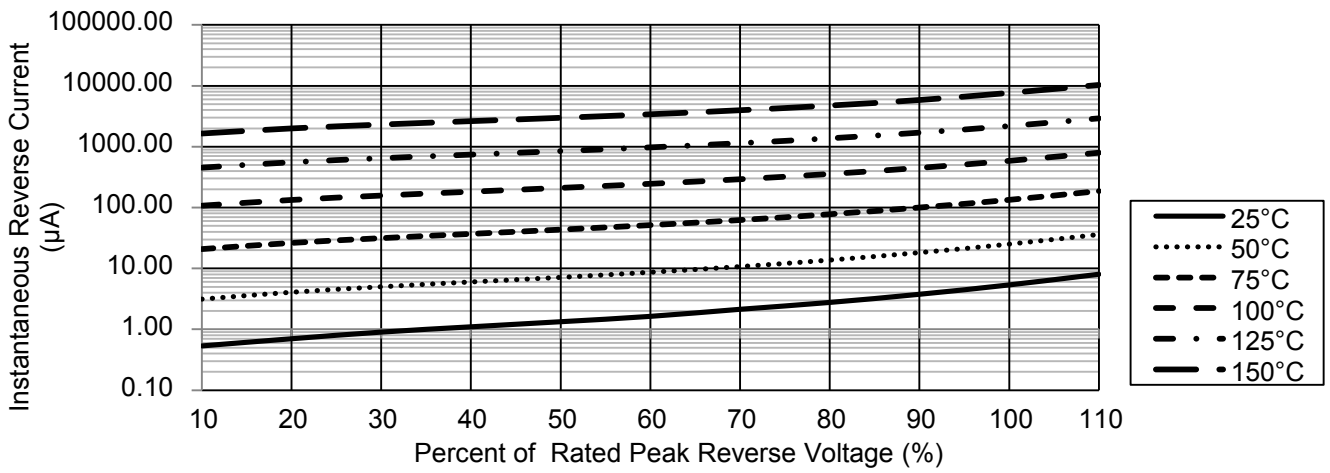


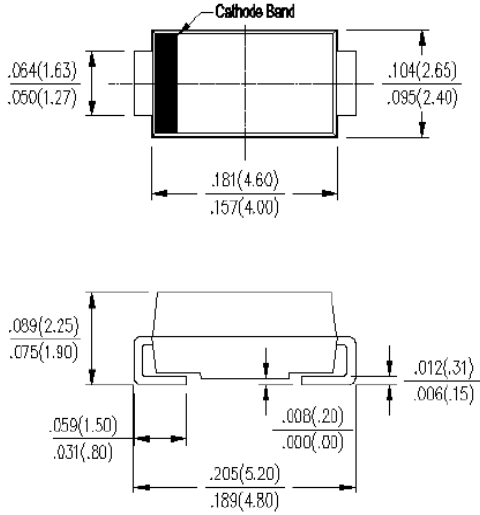
Figure 6. Typical Reverse Characteristics
 (SK25A thru SK26A)

SK22A thru SK26A

Surface Mount Schottky Rectifier
 Reverse Voltage 20-60V Forward Current 2A

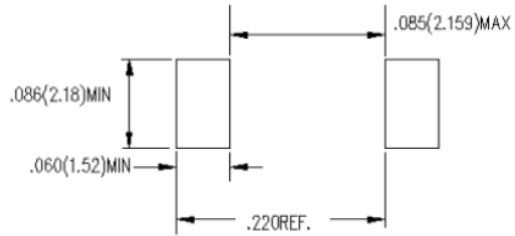
Package Outline Dimensions

in inches (millimeters)



DO-214AC (SMA)

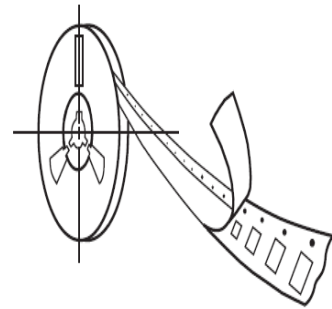
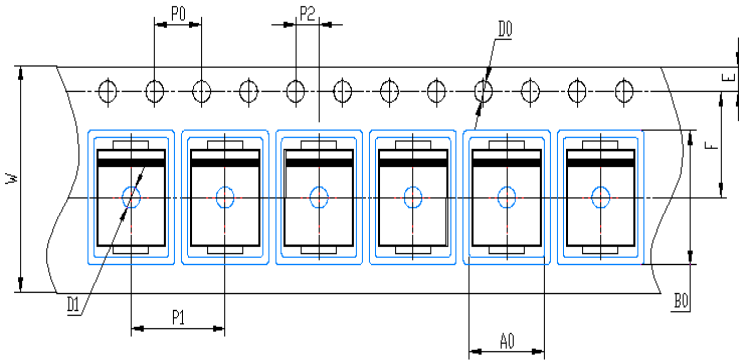
MOUNTING PAD LAYOUT



Packing Information

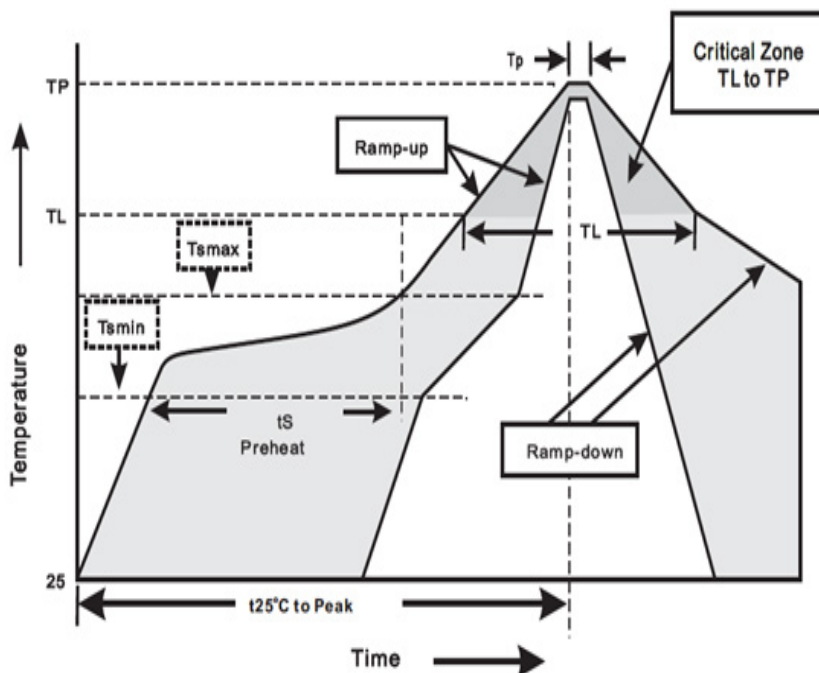
7500 pcs/Reel, 18 Reels/Box, 12mm Tape, 13" Reel

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 |

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