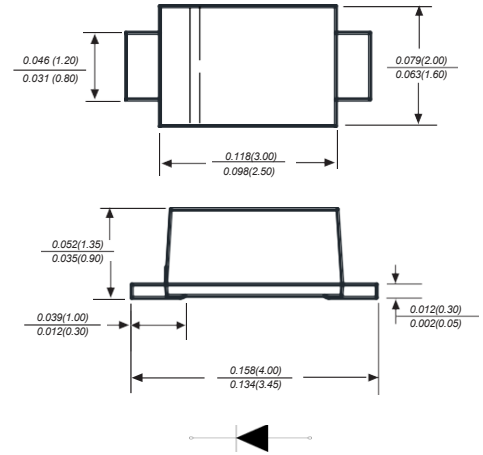


## SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250 °C/10 seconds at terminals

### SOD-123FL



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter                                                                                                   | SYMBOLS           | DSK32       | DSK34 | DSK35      | DSK36 | DSK38 | DSK310 | DSK315 | DSK320 | UNITS |
|-------------------------------------------------------------------------------------------------------------|-------------------|-------------|-------|------------|-------|-------|--------|--------|--------|-------|
| Marking Code                                                                                                |                   | K32         | K34   | K35        | K36   | K38   | K310   | K315   | K320   |       |
| Maximum repetitive peak reverse voltage                                                                     | V <sub>RRM</sub>  | 20          | 40    | 50         | 60    | 80    | 100    | 150    | 200    | V     |
| Maximum RMS voltage                                                                                         | V <sub>RMS</sub>  | 14          | 28    | 35         | 42    | 56    | 70     | 105    | 140    | V     |
| Maximum DC blocking voltage                                                                                 | V <sub>DC</sub>   | 20          | 40    | 50         | 60    | 80    | 100    | 150    | 200    | V     |
| Maximum average forward rectified current at TL(see fig.1)                                                  | I <sub>(AV)</sub> | 3.0         |       |            |       |       |        |        |        | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method)      | I <sub>FSM</sub>  | 80          |       |            |       |       |        |        |        | A     |
| Maximum instantaneous forward voltage at 3.0A                                                               | V <sub>F</sub>    | 0.55        |       | 0.70       |       | 0.85  |        | 0.95   |        | V     |
| Maximum DCreverse current      T <sub>A</sub> =25℃<br>at rated DCblocking voltage      T <sub>A</sub> =100℃ | I <sub>R</sub>    | 0.5<br>10.0 |       | 0.3<br>5.0 |       |       |        |        |        | mA    |
| Typical junction capacitance (NOTE 1)                                                                       | C <sub>J</sub>    | 250         |       | 160        |       |       |        |        |        | pF    |
| Typical thermal resistance (NOTE 2)                                                                         | R <sub>θJA</sub>  | 80.0        |       |            |       |       |        |        |        | ℃/W   |
| Operating junction temperature range                                                                        | T <sub>J</sub>    | -55 to +150 |       |            |       |       |        |        |        | ℃     |
| Storage temperature range                                                                                   | T <sub>STG</sub>  | -55 to +150 |       |            |       |       |        |        |        | ℃     |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## Typical Characteristics

Fig.1 Forward Current Derating Curve

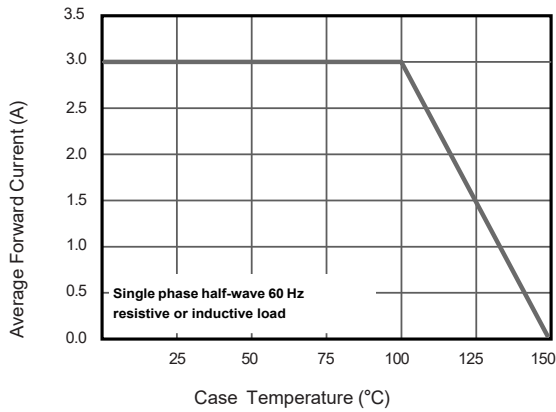


Fig.2 Typical Reverse Characteristics

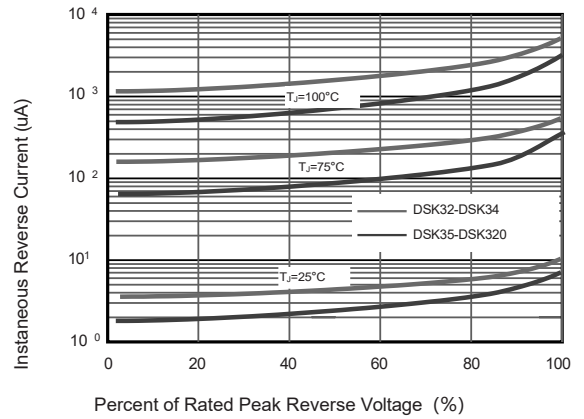


Fig.3 Typical Forward Characteristic

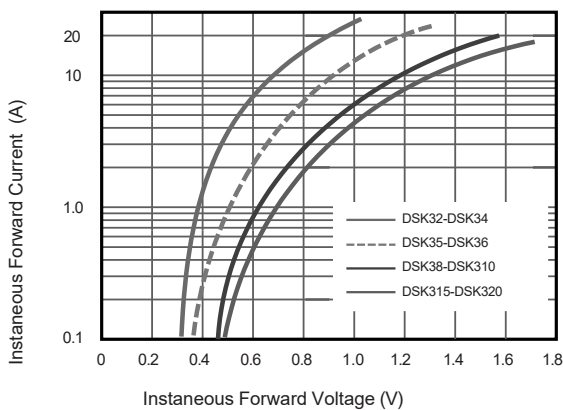


Fig.4 Typical Junction Capacitance

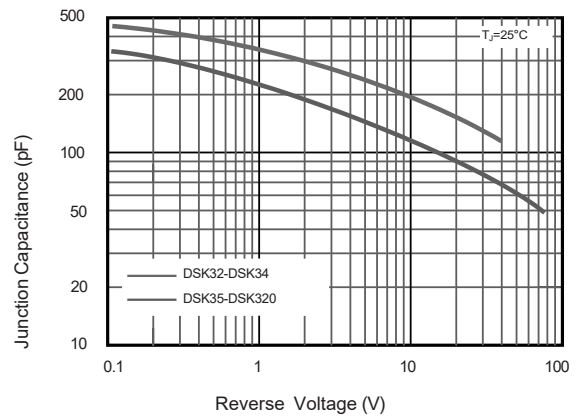


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

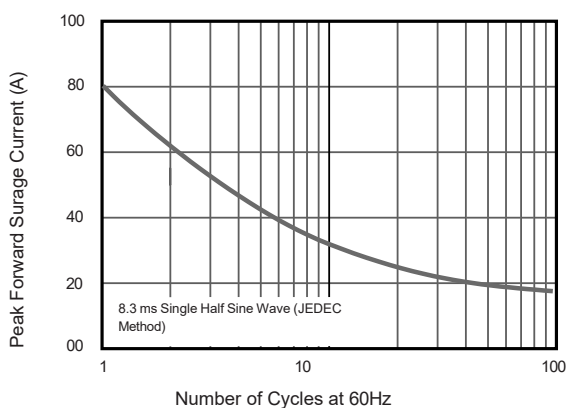
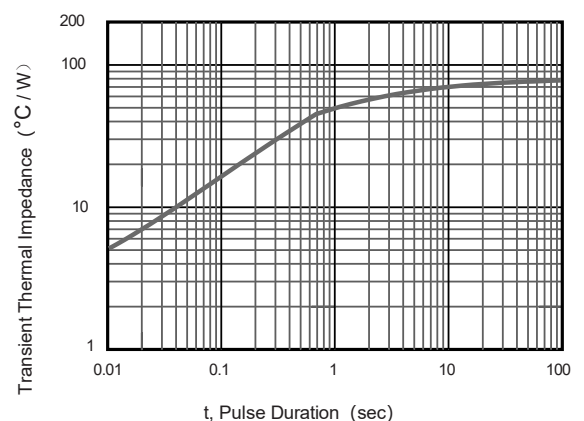
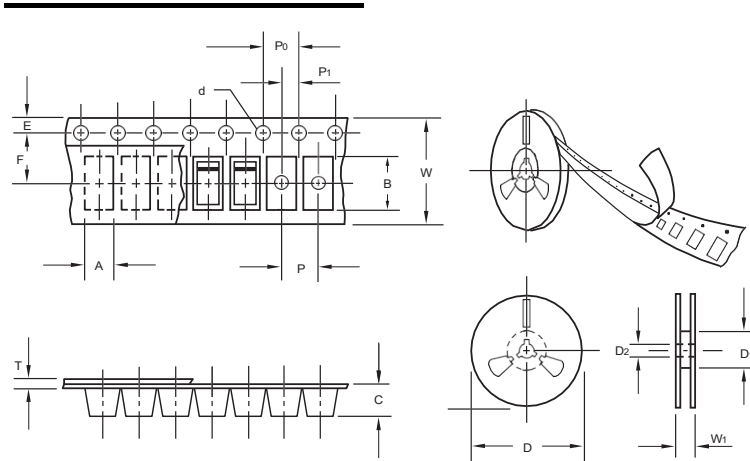


Fig.6 Typical Transient Thermal Impedance



The curve above is for reference only.



unit:mm

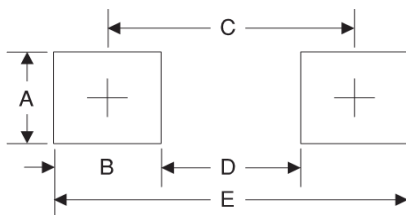
| Item                     | Symbol | Tolerance | SOD-123FL |
|--------------------------|--------|-----------|-----------|
| Carrier width            | A      | 0.1       | 2.1       |
| Carrier length           | B      | 0.1       | 4.0       |
| Carrier depth            | C      | 0.1       | 1.60      |
| Sprocket hole            | d      | 0.05      | 1.55      |
| 7" Reel outside diameter | D      | 2.0       | 178.00    |
| 7" Reel inner diameter   | D1     | min       | 50.0      |
| Feed hole diameter       | D2     | 0.5       | 13.00     |
| Sprocket hole position   | E      | 0.1       | 1.75      |
| Punch hole position      | F      | 0.1       | 3.50      |
| Punch hole pitch         | P      | 0.1       | 4.00      |
| Sprocket hole pitch      | P0     | 0.1       | 4.00      |
| Embossment center        | P1     | 0.1       | 2.00      |
| Overall tape thickness   | T      | 0.1       | 0.25      |
| Tape width               | W      | 0.3       | 8.15      |
| Reel width               | W1     | 1.0       | 10.5      |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

## Reel packing

| PACKAGE   | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|-----------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOD-123FL | 7"        | 3,000      | 4.0                     | 45,000    | 190*190*190     | 178             | 400*400*220       | 180,000      | 9.0                       |

## Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 1.2       | 0.047       |
| B      | 1.2       | 0.047       |
| C      | 3.2       | 0.126       |
| D      | 2         | 0.079       |
| E      | 4.4       | 0.173       |

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