

## 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)

### Mechanical Data

Case : JEDEC SOD-123FL molded plastic body  
 Terminals : Solderable per MIL-STD-750, Method 2026  
 Polarity : Color band denotes cathode end  
 Mounting Position : Any  
 Weight : 0.0007 ounce, 0.02 grams

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

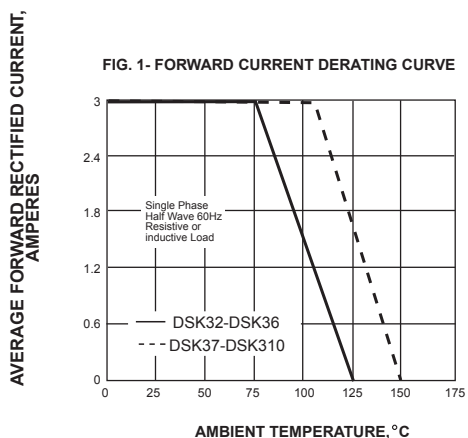
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter                                                                                               | SYMBOLS           | 20T         | 40T  | 50T  | 60T | 80T  | 100T | 150T | 200T | 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 onrated load (JEDEC Method)   | I <sub>FSM</sub>  | 80          |      |      |     |      |      |      |      | A     |
| Maximum instantaneous forward voltage at 3.0A                                                           | V <sub>F</sub>    | 0.52        | 0.70 | 0.70 |     | 0.85 |      |      |      | V     |
| Maximum DCreverse current    T <sub>A</sub> =25℃<br>at rated DCblocking voltage    T <sub>A</sub> =125℃ | I <sub>R</sub>    | 0.5         |      |      |     |      |      |      |      | mA    |
|                                                                                                         |                   | 20.0        |      |      |     | 10.0 |      |      |      |       |
| 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 +125 |      |      |     |      |      |      |      | ℃     |
| Storage temperature range                                                                               | T <sub>STG</sub>  | -55 to +150 |      |      |     |      |      |      |      | ℃     |

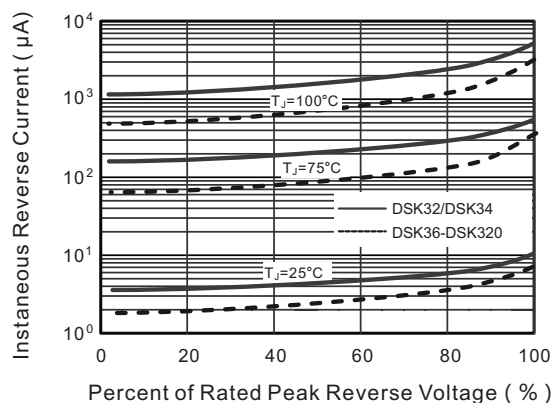
**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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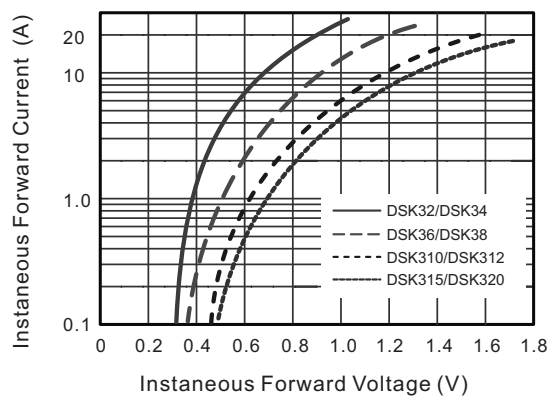
### Typical Characteristics



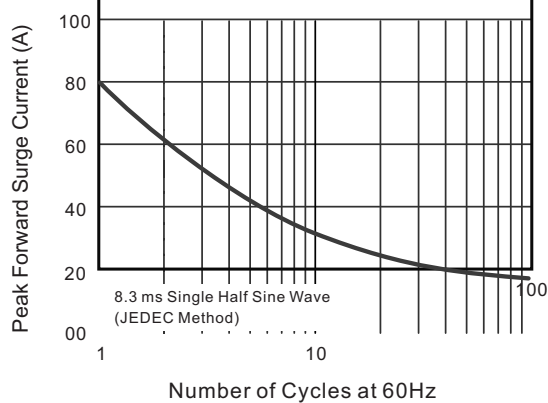
**Fig.2 Typical Reverse Characteristics**



**Fig.3 Typical Forward Characteristic**

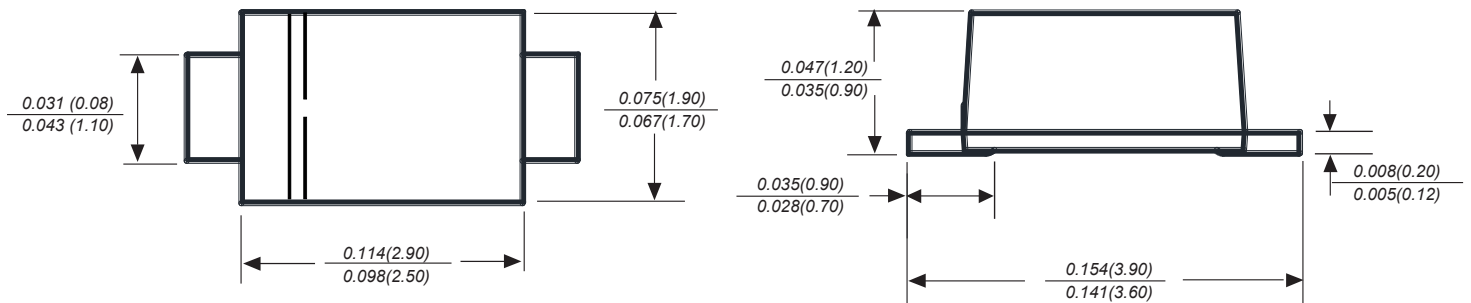


**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**

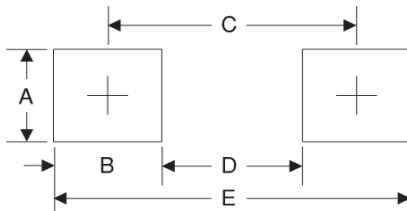


## SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Package Outline Dimensions

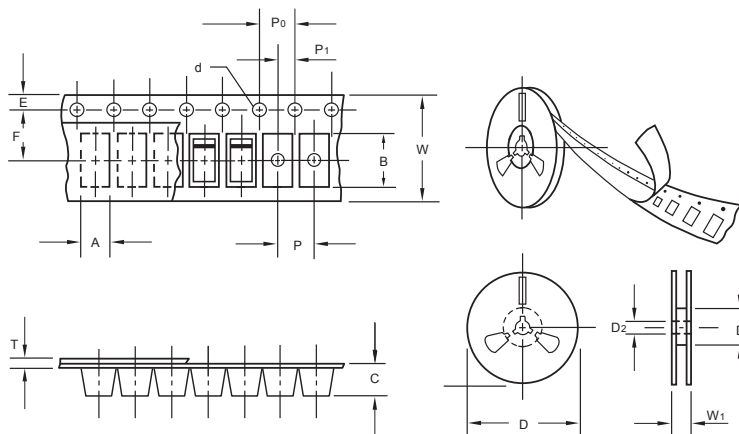


### Suggested Pad Layout



| 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       |

### Packing information



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   | D <sub>1</sub> | min       | 50.0      |
| Feed hole diameter       | D <sub>2</sub> | 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      | P <sub>0</sub> | 0.1       | 4.00      |
| Embossment center        | P <sub>1</sub> | 0.1       | 2.00      |
| Overall tape thickness   | T              | 0.1       | 0.25      |
| Tape width               | W              | 0.3       | 8.15      |
| Reel width               | W <sub>1</sub> | 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    | 210*208*203     | 178             | 430*430*235       | 180,000      | 9.0                       |