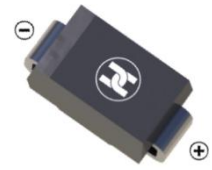
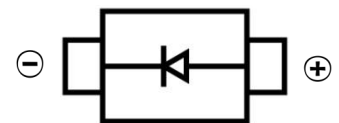


**SCHOTTKY BARRIER DIODE**
**FEATURES**

- Small Surface Mount device
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications


**SMB**
**MECHANICAL DATA**

- Case: SMB(DO-214AA)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.088 grams (approximate)


**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

| Parameter                                              | Symbol           | SS52B     | SS53B | SS54B | SS55B | SS56B     | SS58B | SS510B | SS515B | SS520B | Unit |
|--------------------------------------------------------|------------------|-----------|-------|-------|-------|-----------|-------|--------|--------|--------|------|
| Repetitive peak reverse                                | V <sub>RRM</sub> | 20        | 30    | 40    | 50    | 60        | 80    | 100    | 150    | 200    | V    |
| DC Reverse Voltage                                     | V <sub>R</sub>   | 20        | 30    | 40    | 50    | 60        | 80    | 100    | 150    | 200    | V    |
| RMS Reverse Voltage                                    | V <sub>RMS</sub> | 14        | 21    | 28    | 35    | 42        | 56    | 70     | 105    | 140    | V    |
| Non-Repetitive Peak Forward Surge Current @ t = 8.3 ms | I <sub>FSM</sub> | 150       |       |       |       |           |       |        |        |        | A    |
| Mean rectifying current                                | I <sub>F</sub>   | 5.0       |       |       |       |           |       |        |        |        | A    |
| Thermal Resistance                                     | R <sub>θJA</sub> | 60        |       |       |       |           |       |        |        |        | °C/W |
| Thermal Resistance                                     | R <sub>θJL</sub> | 20        |       |       |       |           |       |        |        |        | °C/W |
| Junction Temperature                                   | T <sub>J</sub>   | -55 ~+125 |       |       |       | -55 ~+150 |       |        |        |        | °C   |
| Storage Temperature                                    | T <sub>STG</sub> | -55 ~+150 |       |       |       |           |       |        |        |        | °C   |

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

| Parameter                             | Symbol         | SS52B | SS53B | SS54B | SS55B | SS56B | SS58B | SS510B | SS515B | SS520B | Unit        | Conditions         |
|---------------------------------------|----------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------------|--------------------|
| Forward voltage                       | V <sub>F</sub> | 0.55  |       |       | 0.70  |       | 0.85  |        | 0.95   |        | V           | I <sub>F</sub> =5A |
| Reverse current T <sub>A</sub> =25°C  | I <sub>R</sub> | 0.5   |       |       |       |       | 0.2   |        |        |        | mA          | V=V <sub>R</sub>   |
| Reverse current T <sub>A</sub> =100°C | I <sub>R</sub> | 20    |       |       | 10    |       |       |        |        | mA     |             |                    |
| Junction capacitance                  | C <sub>J</sub> | 500   |       |       | 350   |       |       |        |        | pF     | V=4V,f=1MHz |                    |

Notes: Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.27" x 0.27" (7.0 mm x 7.0 mm) copper pad areas

**SCHOTTKY BARRIER DIODE**

**Typical Characteristics**

FIG.1: FORWARD CURRENT DERATING CURVE

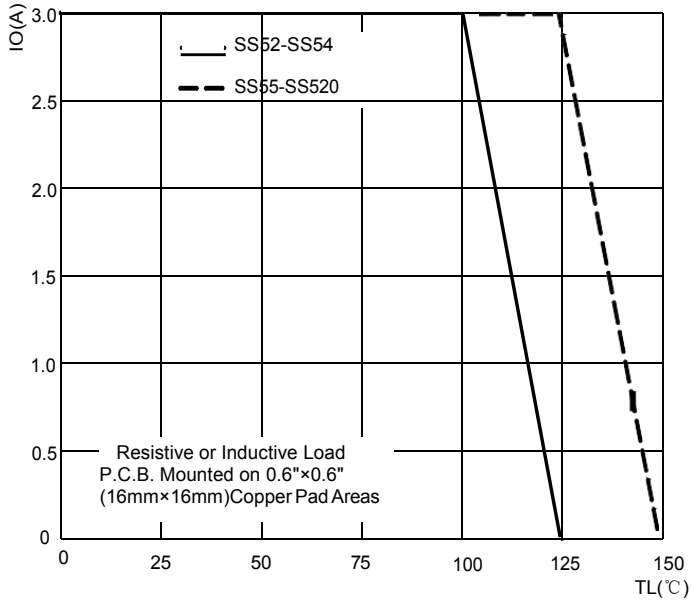


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

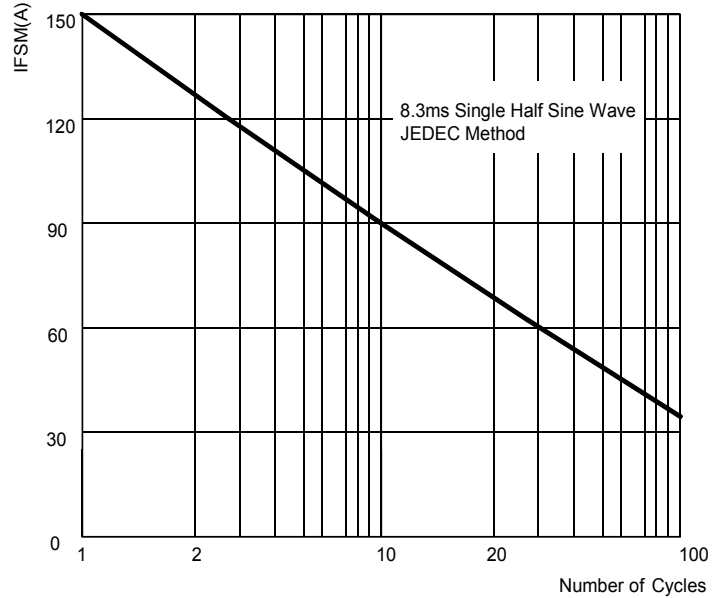


FIG.3: TYPICAL FORWARD CHARACTERISTICS

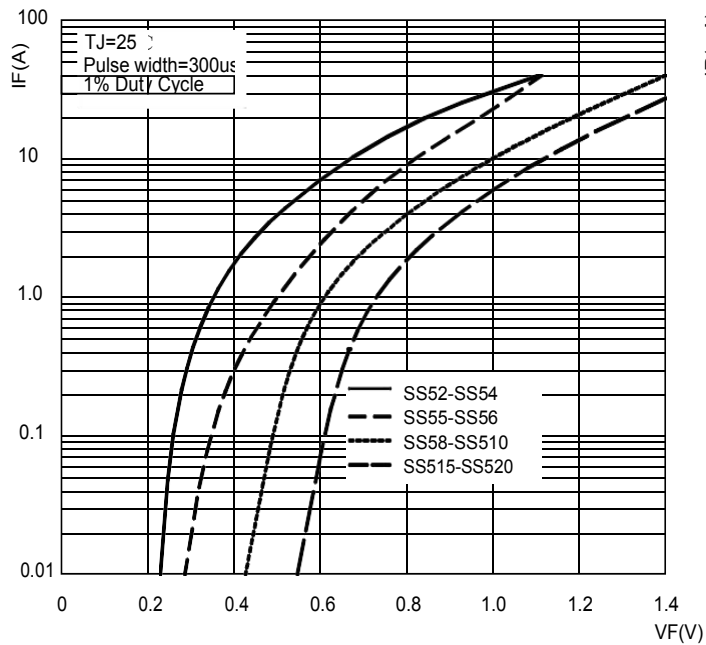
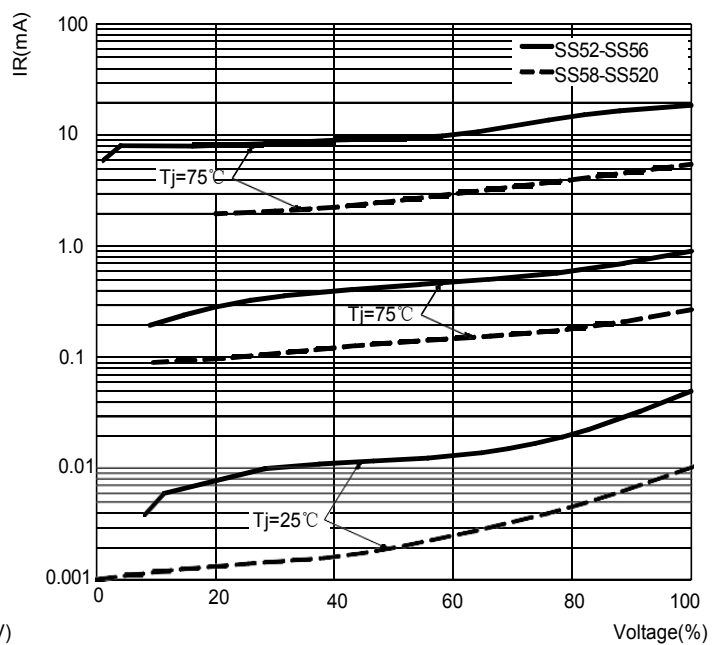
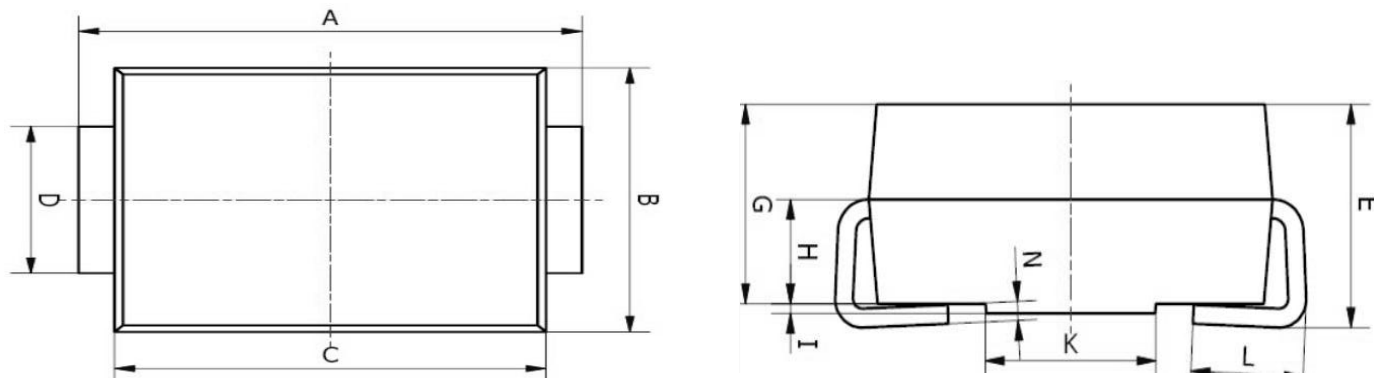
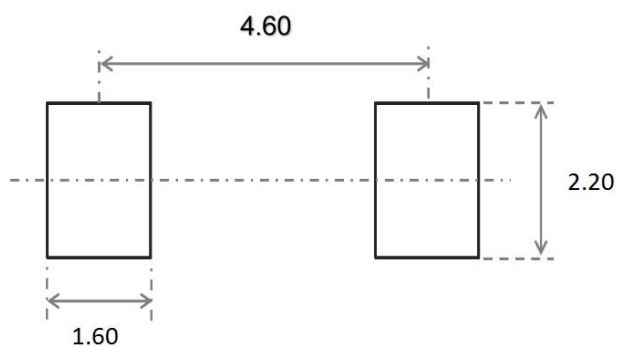


FIG.4: TYPICAL REVERSE CHARACTERISTICS



**SCHOTTKY BARRIER DIODE**
**SMB Package Outline Dimensions**


| Symbol | Dimensions In Millimeters |      | Dimensions In Inches |       |
|--------|---------------------------|------|----------------------|-------|
|        | Min.                      | Max. | Min.                 | Max.  |
| A      | 5.00                      | 5.45 | 0.197                | 0.215 |
| B      | 3.20                      | 4.00 | 0.126                | 0.157 |
| C      | 4.30                      | 4.70 | 0.169                | 0.185 |
| D      | 1.80                      | 2.20 | 0.071                | 0.087 |
| E      | 2.20                      | 2.50 | 0.087                | 0.098 |
| G      | 1.90                      | 2.30 | 0.075                | 0.090 |
| H      | 0.95                      | 1.25 | 0.037                | 0.049 |
| I      | 0.05                      | 0.15 | 0.002                | 0.006 |
| K      | 1.70                      | 2.10 | 0.067                | 0.083 |
| L      | 0.90                      | 1.60 | 0.035                | 0.063 |
| N      | 0.10                      | 0.30 | 0.004                | 0.012 |

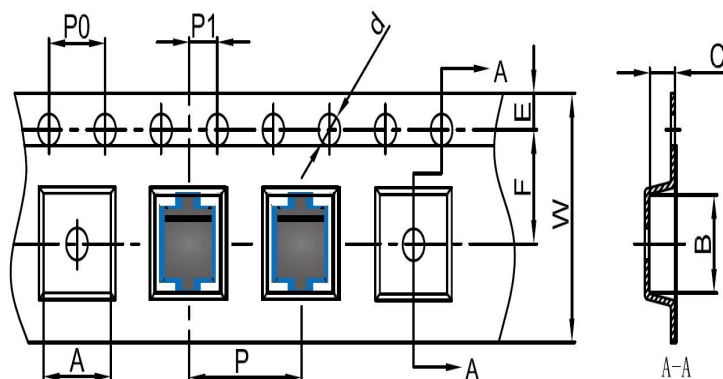
**SMB Suggested Pad Layout**

**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

# SCHOTTKY BARRIER DIODE

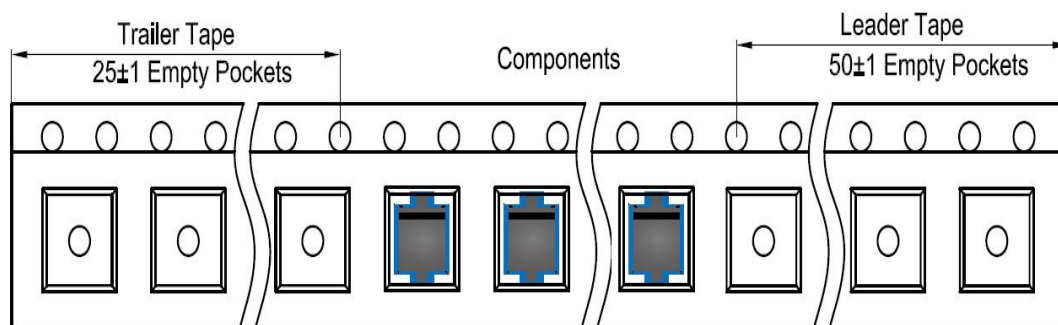
## SMB Tape and Reel

### SMB Embossed Carrier Tape

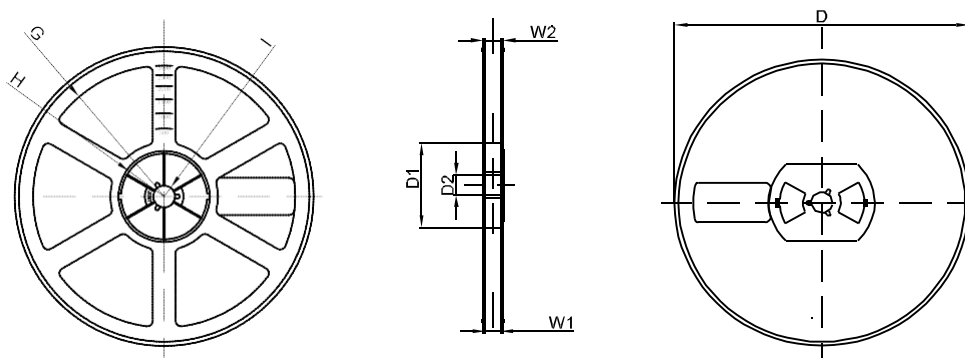


| DIMENSIONS ARE IN MILLIMETER |      |      |      |       |      |      |      |      |      |       |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| TYPE                         | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W     |
| SMB                          | 4.10 | 5.50 | 2.58 | Ø1.50 | 1.75 | 5.50 | 4.00 | 8.00 | 2.00 | 12.00 |
| TOLERANCE                    | ±0.1 | ±0.1 | ±0.1 | ±0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1  |

### SMB Tape Leader and Trailer



### SMB Reel



| DIMENSIONS ARE IN MILLIMETER |      |      |       |      |        |       |       |       |
|------------------------------|------|------|-------|------|--------|-------|-------|-------|
| REEL OPTION                  | D    | D1   | D2    | G    | H      | I     | W1    | W2    |
| 13" DIA                      | Ø330 | 75.0 | 13.00 | R165 | R37.50 | R6.50 | 12.40 | 17.60 |
| TOLERANCE                    | ±2   | ±1   | ±1    | ±1   | ±1     | ±1    | ±1    | ±1    |