

## SMBG Plastic-Encapsulate Diodes

### SK52 THRU SK520

Schottky Rectifier Diodes

#### Features

- $I_{F(AV)}$  5A
- $V_{RRM}$  20V-200V
- High surge current capability
- Polarity: Color band denotes cathode

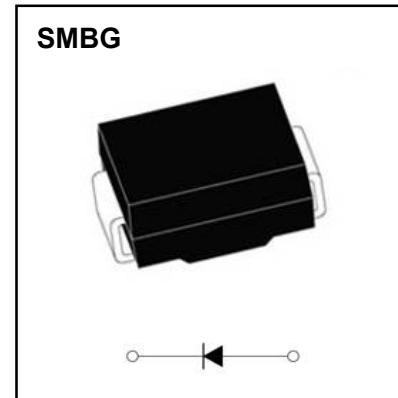
#### Applications

- Rectifier

#### Marking

- SK5X

X : From 2 To 20



#### Limiting Values(Absolute Maximum Rating)

| Item                                 | Symbol             | Unit | Test Conditions                         | SK5        |    |    |    |    |    |     |     |     |
|--------------------------------------|--------------------|------|-----------------------------------------|------------|----|----|----|----|----|-----|-----|-----|
|                                      |                    |      |                                         | 2          | 3  | 4  | 5  | 6  | 8  | 10  | 15  | 20  |
| Repetitive Peak Reverse Voltage      | V <sub>RRM</sub>   | V    |                                         | 20         | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 |
| Maximum RMS Voltage                  | V <sub>RMS</sub>   | V    |                                         | 14         | 21 | 28 | 35 | 42 | 56 | 70  | 105 | 140 |
| Average Forward Current              | I <sub>F(AV)</sub> | A    | 60Hz Half-sine wave,<br>Resistance load | 5.0        |    |    |    |    |    |     |     |     |
| Surge(Non-repetitive)Forward Current | I <sub>FSM</sub>   | A    | 60Hz Half-sine wave,<br>1 cycle, Ta=25℃ | 150        |    |    |    |    |    |     |     |     |
| Junction Temperature                 | T <sub>J</sub>     | ℃    |                                         | -55 ~ +150 |    |    |    |    |    |     |     |     |
| Storage Temperature                  | T <sub>STG</sub>   | ℃    |                                         | -55 ~ +150 |    |    |    |    |    |     |     |     |

#### Electrical Characteristics (T =25°C Unless otherwise specified)

| Item                          | Symbol            | Unit | Test Condition                                            | SK5                 |      |   |   |      |      |      |    |      |    |
|-------------------------------|-------------------|------|-----------------------------------------------------------|---------------------|------|---|---|------|------|------|----|------|----|
|                               |                   |      |                                                           | 2                   | 3    | 4 | 5 | 6    | 8    | 10   | 15 | 20   |    |
| Peak Forward Voltage          | V <sub>F</sub>    | V    | I <sub>F</sub> =5.0A                                      |                     | 0.55 |   |   | 0.70 |      | 0.85 |    | 0.95 |    |
| Peak Reverse Current          | I <sub>RRM1</sub> | mA   | V <sub>RM</sub> =V <sub>RRM</sub>                         | T <sub>a</sub> =25℃ | 0.5  |   |   |      | 0.03 |      |    |      |    |
|                               |                   |      | T <sub>a</sub> =100℃                                      | 10                  |      |   |   | 2    |      |      |    |      |    |
| Thermal Resistance(Typical)   | R <sub>θJ-A</sub> | ℃/ W | Between junction and ambient                              |                     | 50   |   |   |      |      |      |    |      |    |
|                               | R <sub>θJ-L</sub> |      | Between junction and terminal                             |                     | 12   |   |   |      |      |      |    |      |    |
| Juction Capacitance (Typical) | Cj                | pF   | Measured at 1MHZ and Applied Reverse Voltage of 4.0 V.D.C |                     | 260  |   |   | 220  |      | 130  |    | 100  | 80 |

#### Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on FR4 PCB double sided copper mini pad

## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

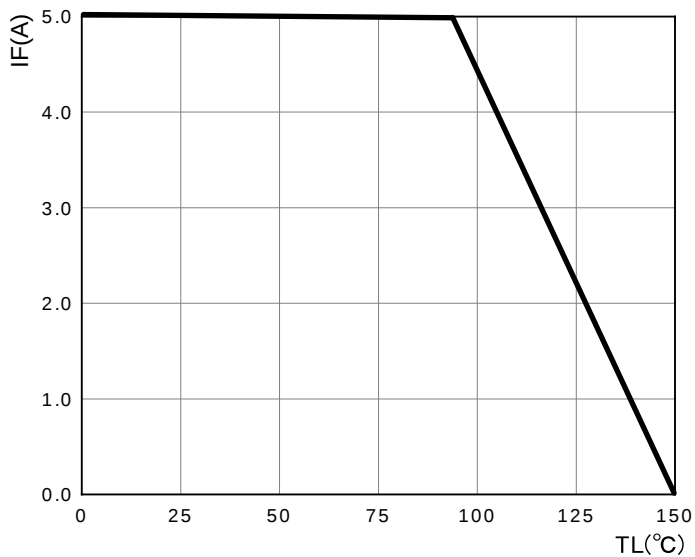
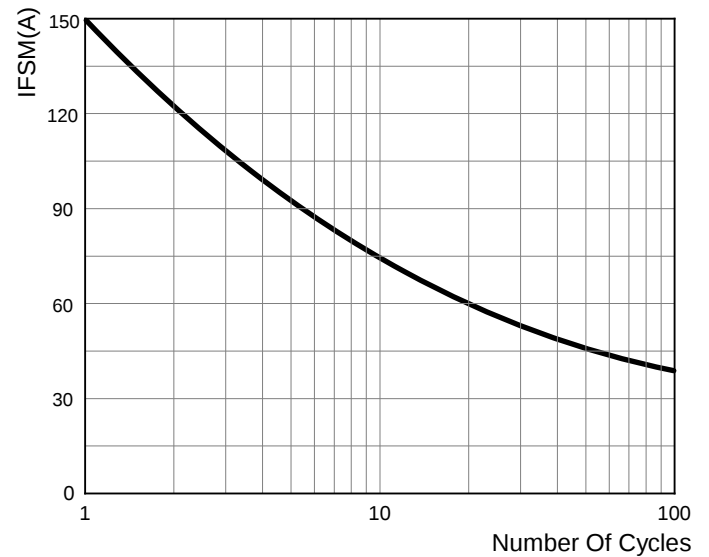
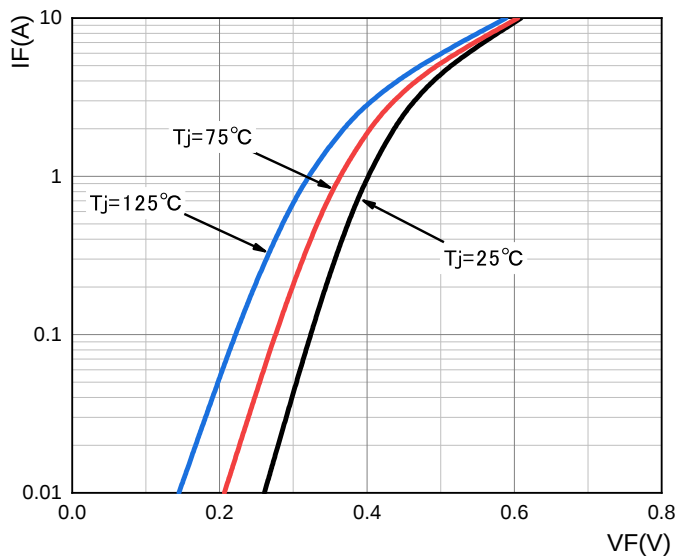


FIG 2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



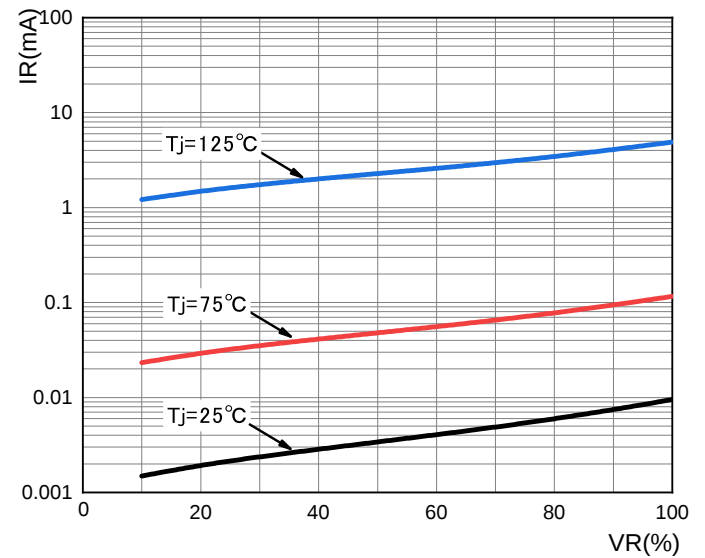
SK52-SK54

FIG.3: TYPICAL FORWARD CHARACTERISTICS



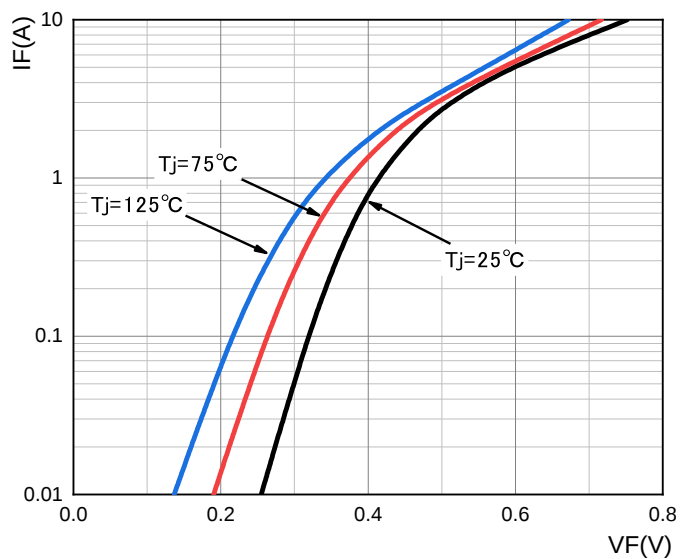
SK52-SK54

FIG.4: TYPICAL REVERSE CHARACTERISTICS



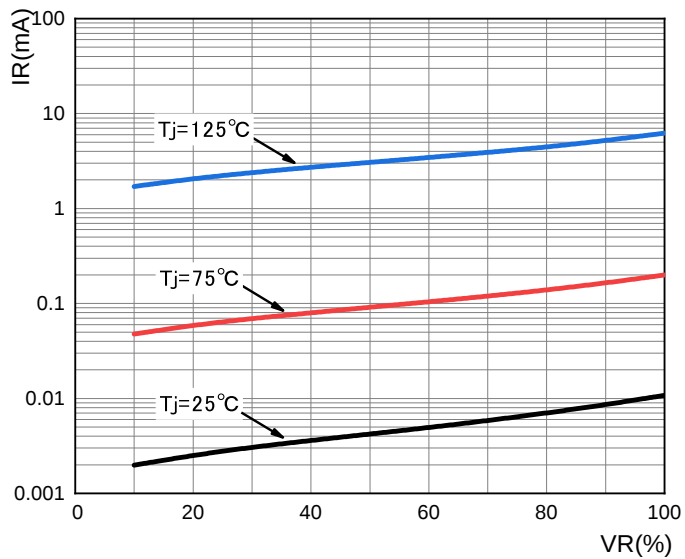
SK55-SK56

FIG.5: TYPICAL FORWARD CHARACTERISTICS



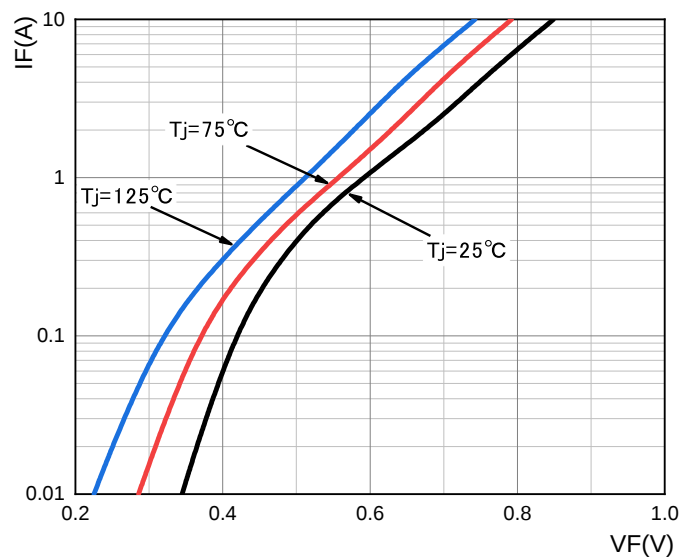
SK55-SK56

FIG.6: TYPICAL REVERSE CHARACTERISTICS



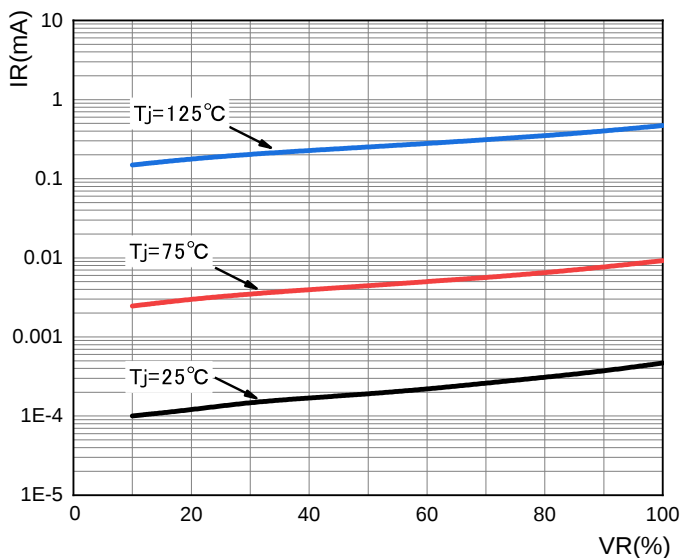
SK58-SK510

FIG.7: TYPICAL FORWARD CHARACTERISTICS



SK58-SK510

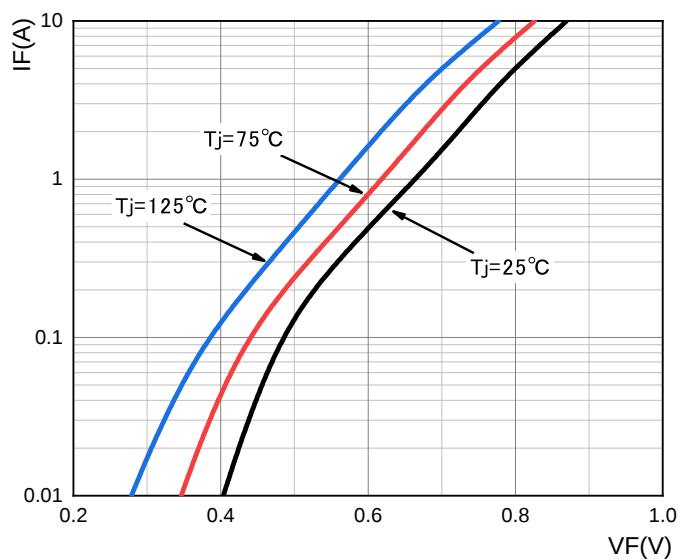
FIG.8: TYPICAL REVERSE CHARACTERISTICS



## Typical Characteristics

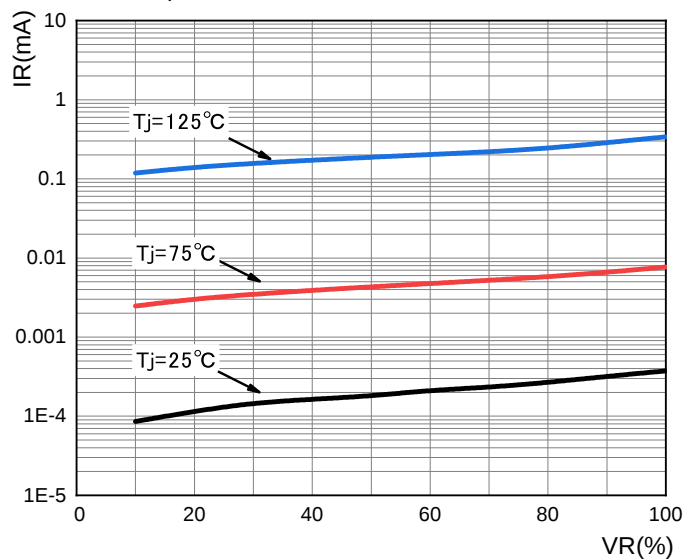
SK515

FIG.9: TYPICAL FORWARD CHARACTERISTICS



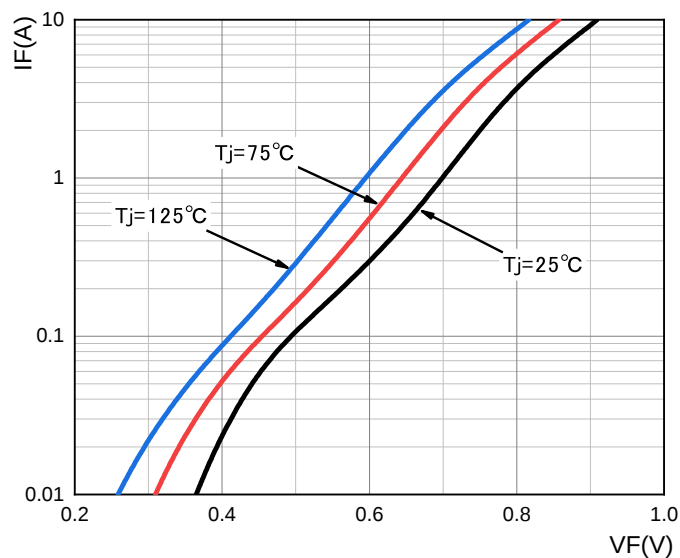
SK515

FIG.10: TYPICAL REVERSE CHARACTERISTICS



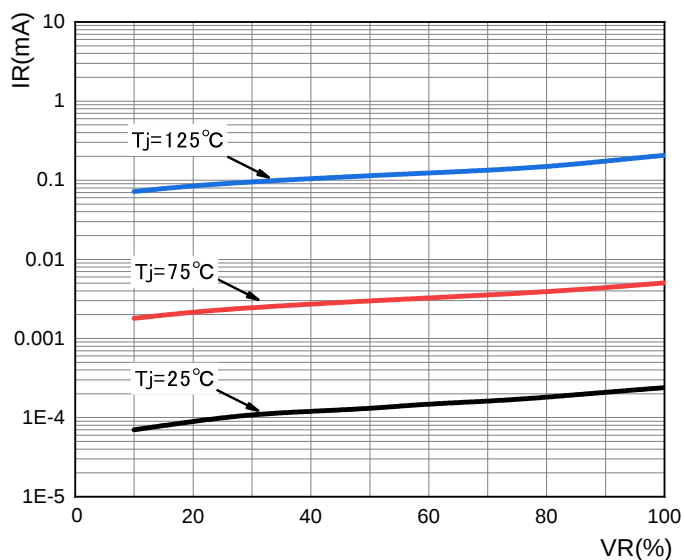
SK520

FIG.11: TYPICAL FORWARD CHARACTERISTICS

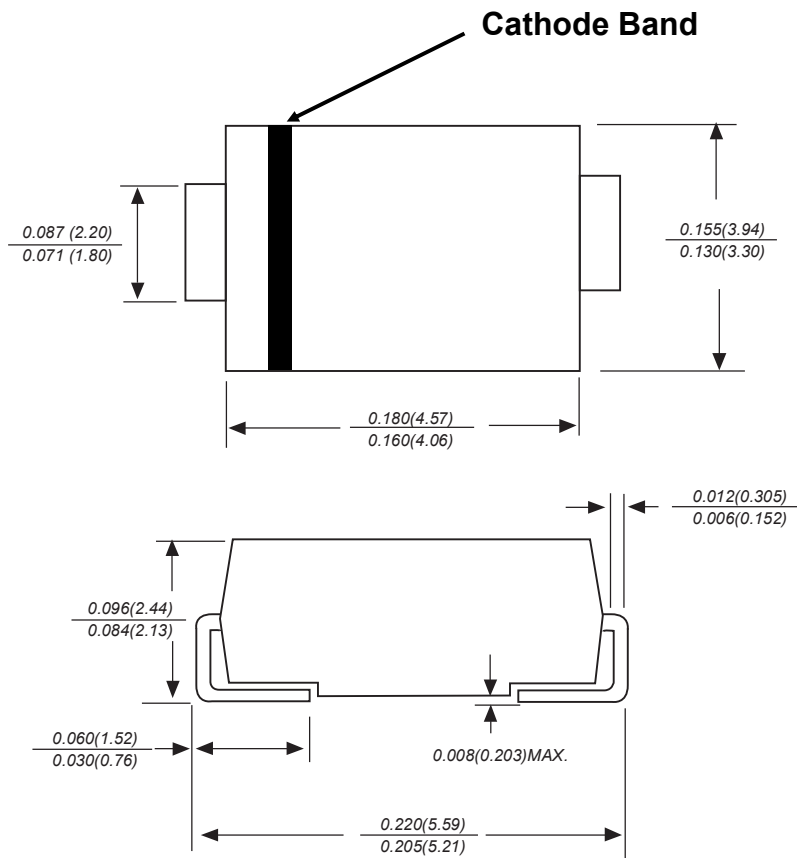


SK520

FIG.12: TYPICAL REVERSE CHARACTERISTICS

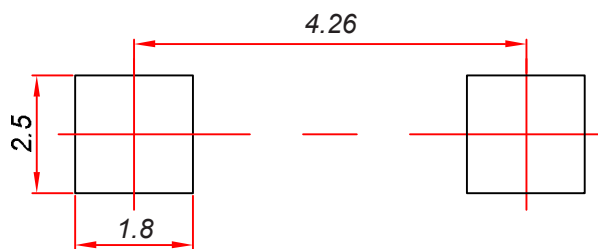


## SMBG Package Outline Dimensions



Dimensions in inches and (millimeters)

## SMBG Suggested Pad Layout



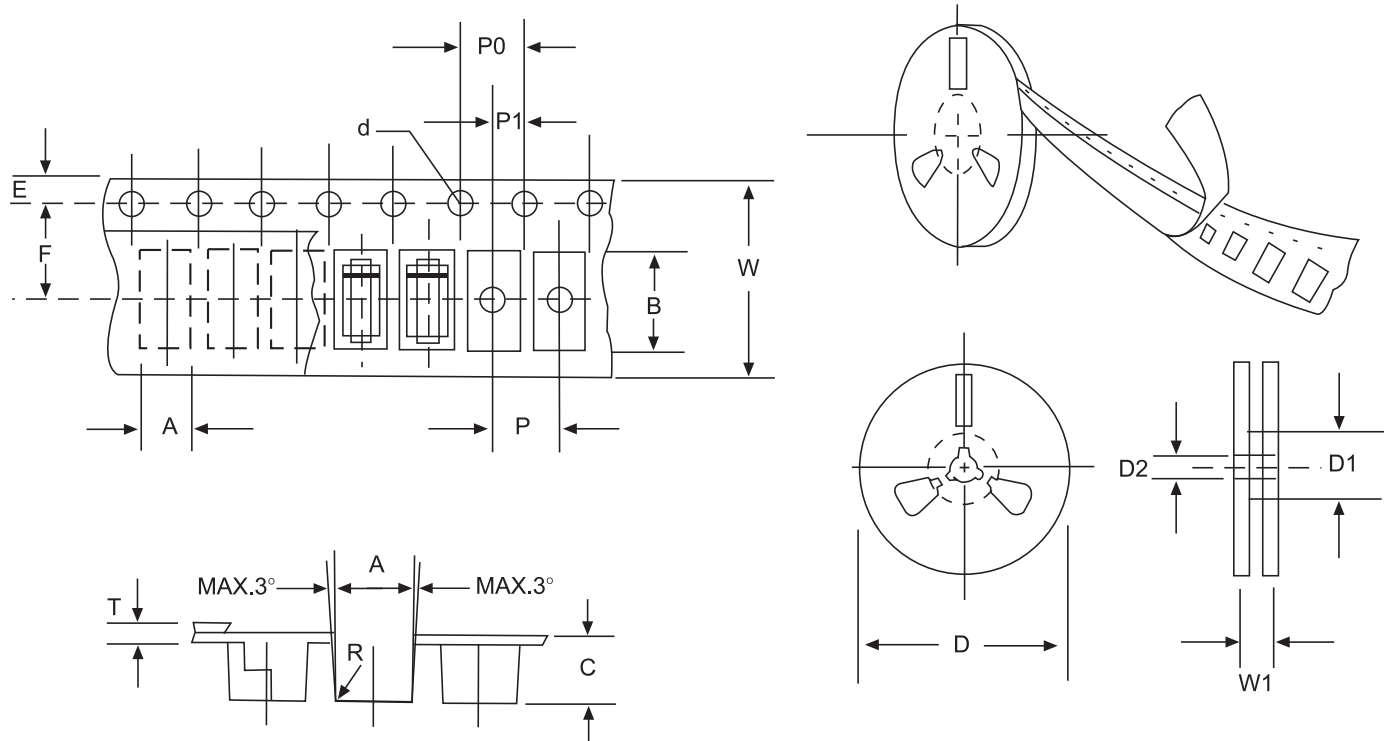
### Note:

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

### NOTICE

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## Reel Taping Specifications For Surface Mount Devices- SMBG



**FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING**

| ITEM                   | SYMBOL | SMBG mm(inch)          |
|------------------------|--------|------------------------|
| Carrier width          | A      | 4.09±0.1(0.161±0.004)  |
| Carrier length         | B      | 5.82±0.1(0.229±0.004)  |
| Carrier depth          | C      | 2.50±0.1(0.100±0.004)  |
| Sprocket hole          | d      | 1.55±0.05(0.061±0.002) |
| Reel outside diameter  | D      | 330±2.0(13±0.079)      |
| Reel inner diameter    | D1     | 75 ±1.0 ( 2.95 ±0.039) |
| Feed hole diameter     | D2     | 13±0.5(0.512±0.020)    |
| Strocket hole position | E      | 1.75 ±0.1(0.069±0.004) |
| Punch hole position    | F      | 5.65±0.05(0.222±0.002) |
| Punch hole pitch       | P      | 8.0±0.1(0.315±0.004)   |
| Sprocket hole pitch    | P0     | 4.0±0.1(0.157±0.004)   |
| Embossment center      | P1     | 2.0±0.1(0.079±0.004)   |
| Totall tape thickness  | T      | 0.32±0.1 (0.013±0.004) |
| Tape width             | W      | 12.0±0.2(0.472±0.008)  |
| Reel width             | W1     | 16.8±2.0(0.661±0.079)  |

NOTE:Devices are packed in accordance with EIA standard RS-481-A and specification given above.