

## SMC Plastic-Encapsulate Diodes

### Schottky Rectifier Diode

#### Features

- $I_{F(AV)}$  5A
- $V_{RRM}$  40V
- High surge current capability
- Polarity: Color band denotes cathode
- Low peak forward voltage

#### Applications

- Rectifier

#### Marking

- SS54L

SMC



### Limiting Values(Absolute Maximum Rating)

| Item                                 | Symbol      | Unit             | Test Conditions                                         | SS54L      |
|--------------------------------------|-------------|------------------|---------------------------------------------------------|------------|
| Repetitive Peak Reverse Voltage      | $V_{RRM}$   | V                |                                                         | 40         |
| Maximum RMS Voltage                  | $V_{RMS}$   | V                |                                                         | 28         |
| Average Forward Current              | $I_{F(AV)}$ | A                | 60Hz Half-sine wave,<br>Resistance load                 | 5.0        |
| Surge(Non-repetitive)Forward Current | $I_{FSM}$   | A                | 60Hz Half-sine wave,<br>1 cycle, $T_a=25^\circ\text{C}$ | 120        |
| Junction Temperature                 | $T_J$       | $^\circ\text{C}$ |                                                         | -55 ~ +150 |
| Storage Temperature                  | $T_{STG}$   | $^\circ\text{C}$ |                                                         | -55 ~ +150 |

### Electrical Characteristics ( $T=25^\circ\text{C}$ Unless otherwise specified)

| Item                           | Symbol           | Unit               | Test Condition                                            |                         | SS54L |
|--------------------------------|------------------|--------------------|-----------------------------------------------------------|-------------------------|-------|
| Peak Forward Voltage           | $V_F$            | V                  | $I_F=1.0\text{A}$                                         | $T_a=25^\circ\text{C}$  | 0.32  |
|                                |                  |                    | $I_F=5.0\text{A}$                                         |                         | 0.42  |
| Peak Reverse Current           | $I_{RRM1}$       | mA                 | $V_{RM}=V_{RRM}$                                          | $T_a=25^\circ\text{C}$  | 0.10  |
|                                | $I_{RRM2}$       |                    |                                                           | $T_a=100^\circ\text{C}$ | 10.0  |
| Thermal Resistance(Typical)    | $R_{\theta J-A}$ | $^\circ\text{C/W}$ | Between junction and ambient                              |                         | 55    |
|                                | $R_{\theta J-L}$ |                    | Between junction and lead                                 |                         | 13    |
| Junction Capacitance (Typical) | $C_j$            | pF                 | Measured at 1MHZ and Applied Reverse Voltage of 4.0 V.D.C |                         | 420   |

#### 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

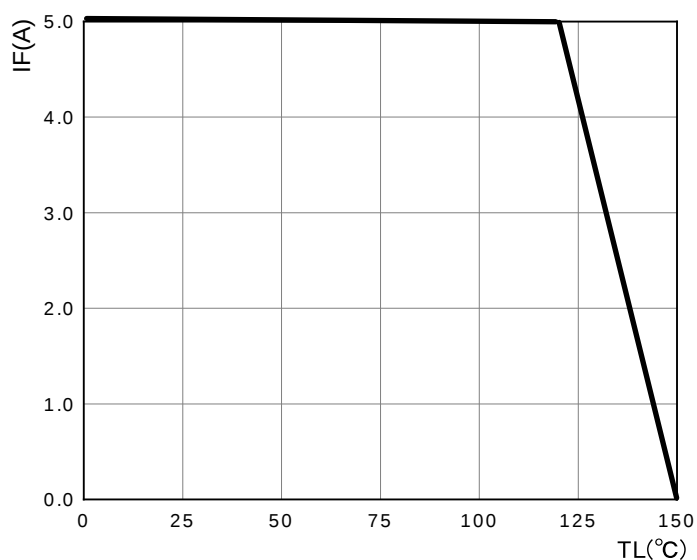


FIG.2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



FIG.3: TYPICAL FORWARD CHARACTERISTICS

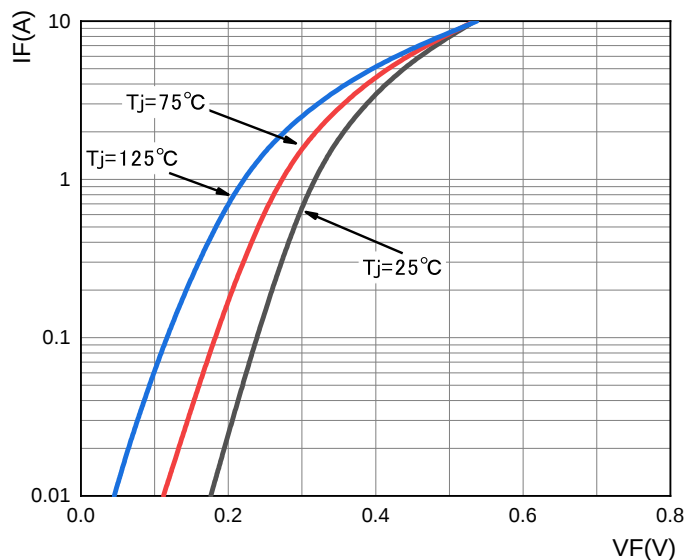
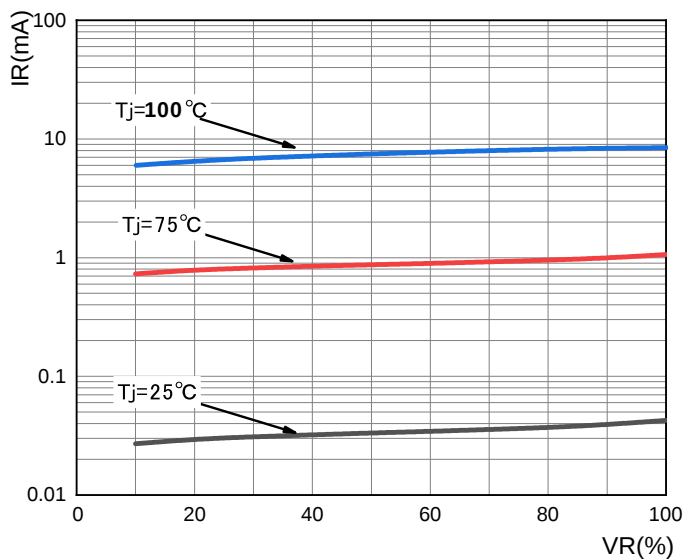
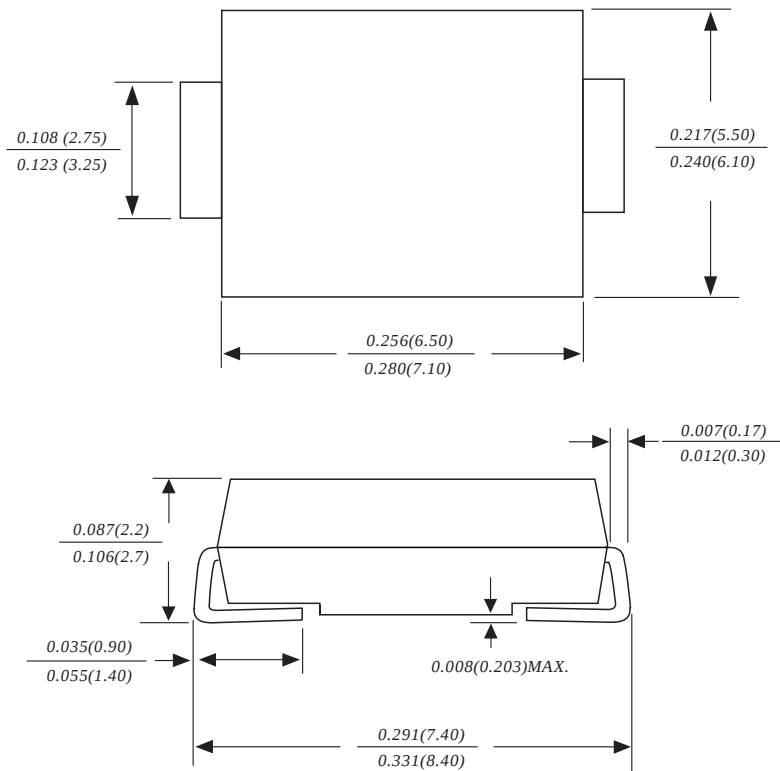


FIG.4: TYPICAL REVERSE CHARACTERISTICS

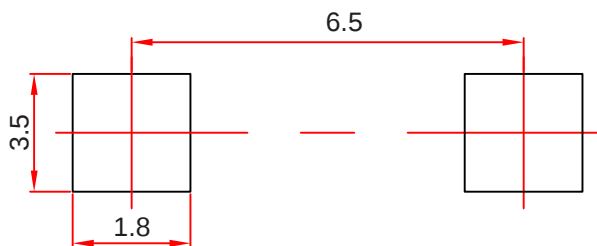


## SMC Package Outline Dimensions



Dimensions in inches and (millimeters)

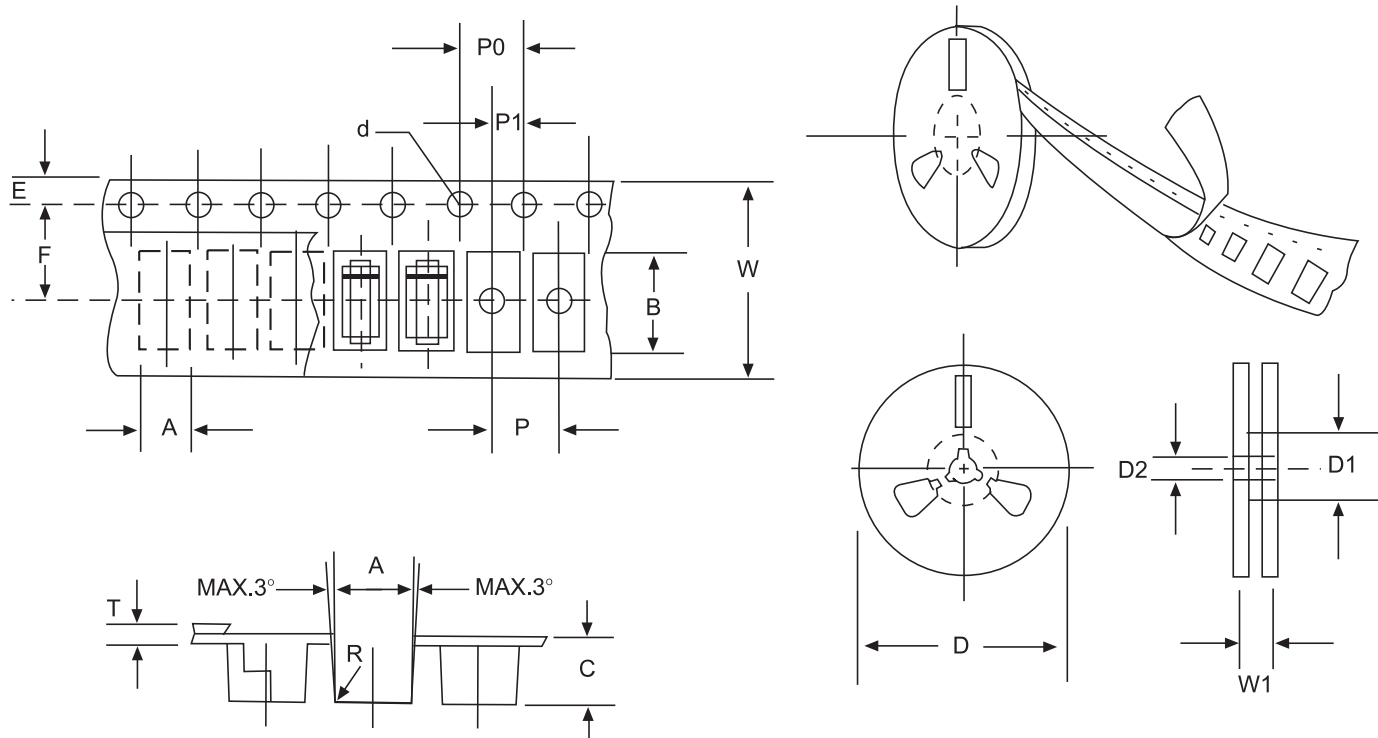
## SMC Suggested Pad Layout



### Note:

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

## Reel Taping Specifications For Surface Mount Devices–SMC



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

| ITEM                   | SYMBOL | SMC mm(inch)           |
|------------------------|--------|------------------------|
| Carrier width          | A      | 6.05±0.1(0.238±0.004)  |
| Carrier length         | B      | 8.31±0.1(0.327±0.004)  |
| Carrier depth          | C      | 2.70±0.1(0.106±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      | 7.65±0.05(0.301±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      | 0.3±0.1(0.012±0.004)   |
| Tape width             | W      | 16.0±0.2(0.630±0.008)  |
| Reel width             | W1     | 24.0±2.0(0.945±0.079)  |

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