



## SMCG Plastic-Encapsulate Diodes

### RS3A THRU RS3M Fast Recovery Rectifier Diodes

#### Features

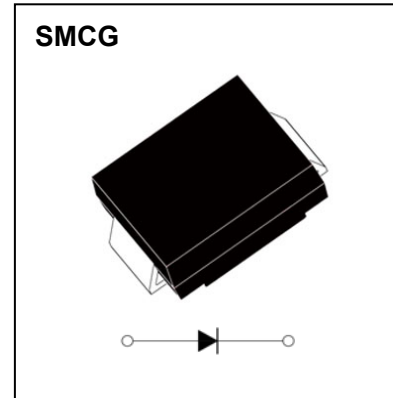
- $I_{F(AV)}$  3A
- $V_{RRM}$  50V-1000V
- High surge current capability
- Polarity: Color band denotes cathode

#### Applications

- Rectifier

#### Marking

- RS3X
- X : From A To M



#### Limiting Values(Absolute Maximum Rating)

| Item   | Symbol         | Unit             | Test Conditions   | RS3        |     |     |     |     |     |      |
|--|----------------|------------------|---|------------|-----|-----|-----|-----|-----|------|
|  |                |                  |   | A          | B   | D   | G   | J   | K   | M    |
| Repetitive Peak Reverse Voltage                  | $V_{RRM}$      | V                |   | 50         | 100 | 200 | 400 | 600 | 800 | 1000 |
| Maximum RMS Voltage                              | $V_{RMS}$      | V                |   | 35         | 70  | 140 | 280 | 420 | 560 | 700  |
| Average Forward Current                          | $I_{F(AV)}$    | A                | 60Hz Half-sine wave, Resistance load, $T_L=110^\circ\text{C}$ | 3.0        |     |     |     |     |     |      |
| Surge(Non-repetitive)Forward Current             | $I_{FSM}$      | A                | 60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$          | 100        |     |     |     |     |     |      |
| Operation Junction and Storage Temperature Range | $T_J, T_{STG}$ | $^\circ\text{C}$ |   | -55 ~ +150 |     |     |     |     |     |      |

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

| Item                          | Symbol           | Unit                      | Test Condition  | RS3                     |   |   |     |   |     |   |
|-------------------------------|------------------|---------------------------|---|-------------------------|---|---|-----|---|-----|---|
|                               |                  |                           |   | A                       | B | D | G   | J | K   | M |
| Peak Forward Voltage          | $V_F$            | V                         | $I_F=3.0\text{A}$                                       | 1.3                     |   |   |     |   |     |   |
| Maximum reverse recovery time | $t_{rr}$         | ns                        | $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$ | 150                     |   |   | 250 |   | 500 |   |
| Peak Reverse Current          | $I_{RRM1}$       | $\mu\text{A}$             | $V_{RM}=V_{RRM}$  | $T_a=25^\circ\text{C}$  |   |   |     |   |     |   |
|                               | $I_{RRM2}$       |                           |   | $T_a=100^\circ\text{C}$ |   |   |     |   |     |   |
| Thermal Resistance(Typical)   | $R_{\theta J-A}$ | $^\circ\text{C}/\text{W}$ | Between junction and ambient                            | 50                      |   |   |     |   |     |   |
|                               | $R_{\theta J-L}$ |                           | Between junction and terminal                           | 15                      |   |   |     |   |     |   |

#### 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

# Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

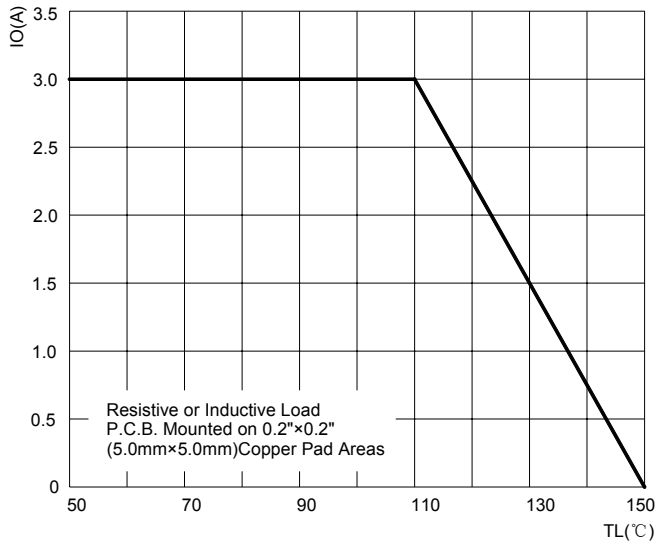


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

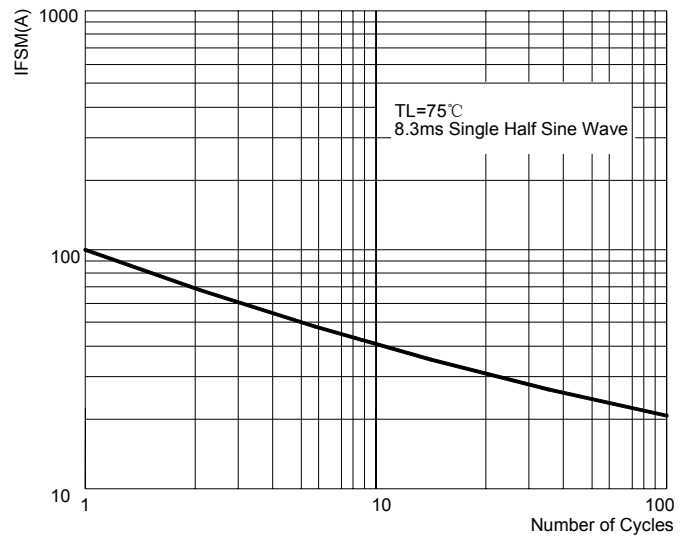


FIG.3: TYPICAL FORWARD CHARACTERISTICS

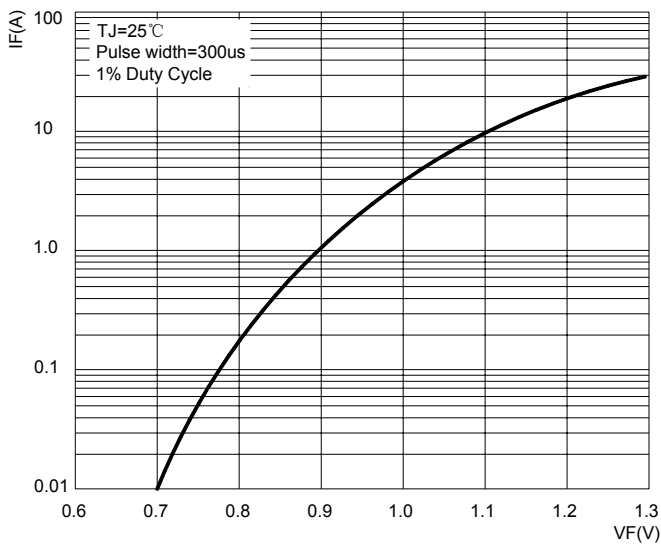


FIG.4: TYPICAL REVERSE CHARACTERISTICS

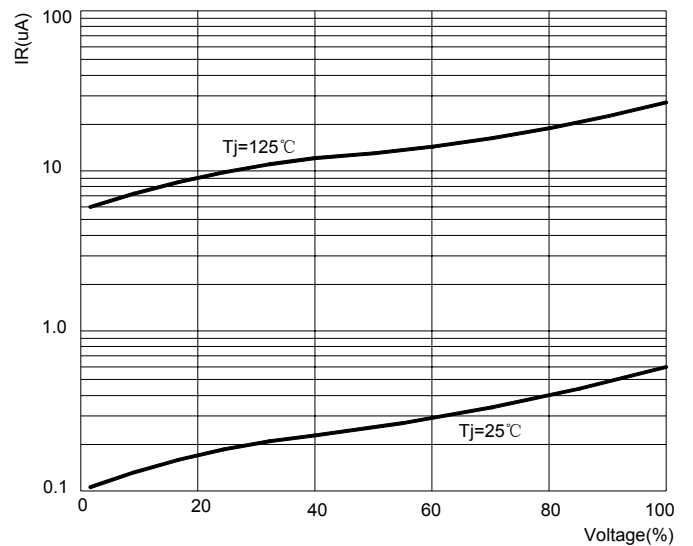
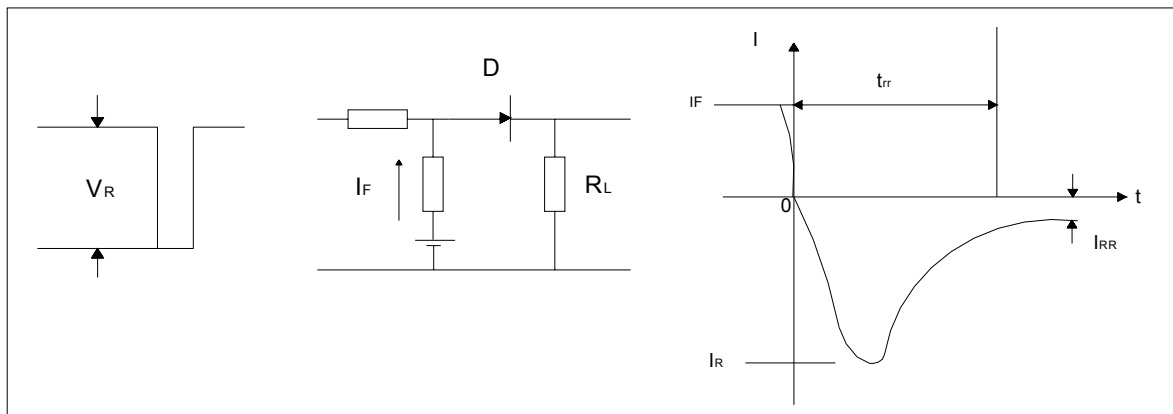


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

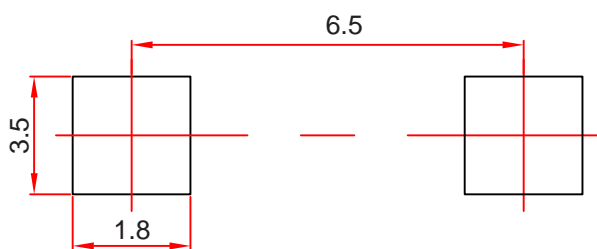


## SMCG Package Outline Dimensions



Dimensions in inches and (millimeters)

## SMCG 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–SMCG



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

| ITEM                   | SYMBOL | SMCG 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)      |
| Sprocket 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)     |
| Total 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.

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