SZCJ Shenzhen Changji Semiconductor Co., LTD.

# SMAG Plastic-Encapsulate Diodes

## ES1JS Super Fast Recovery Rectifier Diodes

### Features

- $I_{F(AV)}$ 1A
- $V_{RRM}$ 600V
- High surge current capability
- Polarity: Color band denotes cathode

### Applications

- Rectifier

**SMAG**





### Marking




XXXX : Date Code

### Limiting Values (Absolute Maximum Rating)

| Item | Symbol | Unit | Test Conditions | ES1JS |
|---|---|---|---|---|
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | | 600 |
| Maximum RMS Voltage | $V_{RMS}$ | V | | 420 |
| Average Forward Current | $I_{F(AV)}$ | A | 60Hz Half-sine wave, Resistance load | 1.0 |
| Surge(Non-repetitive)Forward Current | $I_{FSM}$ | A | 60Hz Half-sine wave, 1 cycle, Ta=25℃ | 30 |
| Operation Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | ℃ | | -55 ~ +150 |

### Electrical Characteristics (T=25 ℃Unless otherwise specified )

| Item | Symbol | Unit | Test Condition | | ES1JS |
|---|---|---|---|---|---|
| Peak Forward Voltage | $V_F$ | V | $I_F$=1.0A | | 1.7 |
| Maximum reverse recovery time | $t_{rr}$ | ns | $I_F$=0.5A,$I_R$=1.0A,$I_{rr}$=0.25A | | 35 |
| Peak Reverse Current | $I_{RRM1}$ | μA | $V_{RM}$=$V_{RRM}$ | Ta =25℃ | 5 |
| | $I_{RRM2}$ | | | Ta =125℃ | 50 |
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | ℃/W | Between junction and ambient | | 75 |
| | $R_{\theta J-L}$ | | Between junction and terminal | | 27 |
| Juction Capacitance (Typical) | Cj | pF | Measured at 1MHZ and Applied Reverse Voltage of 4.0 V.D.C | | 8.5 |

**Notes:**

Thermal resistance from junction to ambient and from junction to lead mounted on 1" x 1"(25.4mm x 25.4mm) FR4 PCB, double sided copper, with minimum pad layout

## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

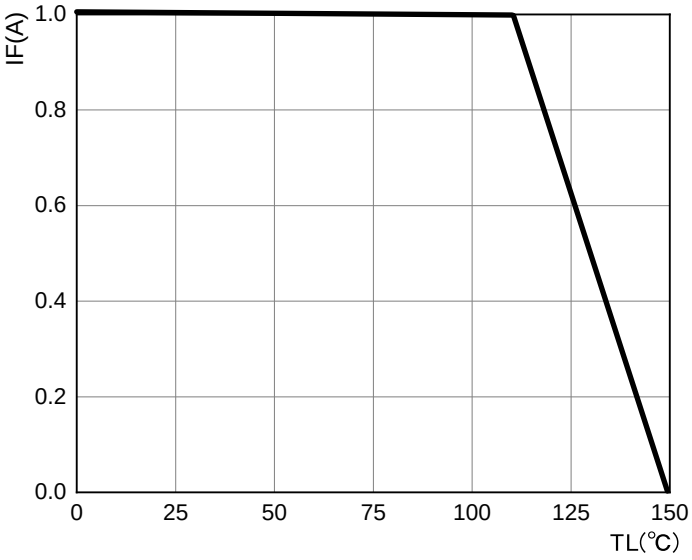



FIG 2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

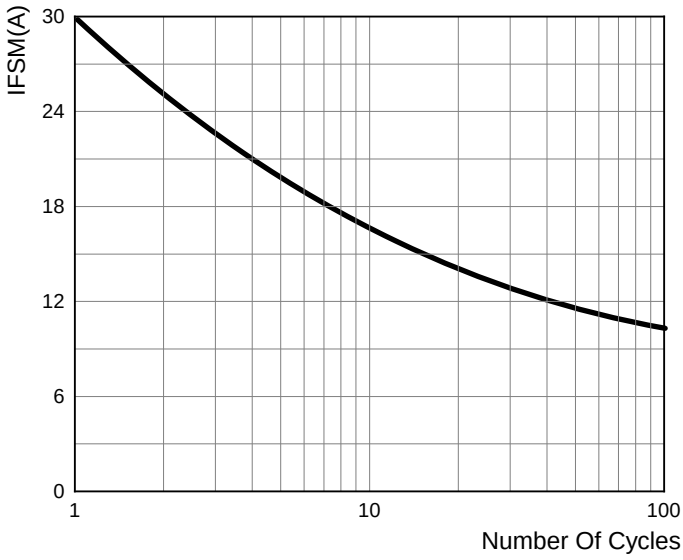



FIG.3 : TYPICAL FORWARD CHARACTERISTICS

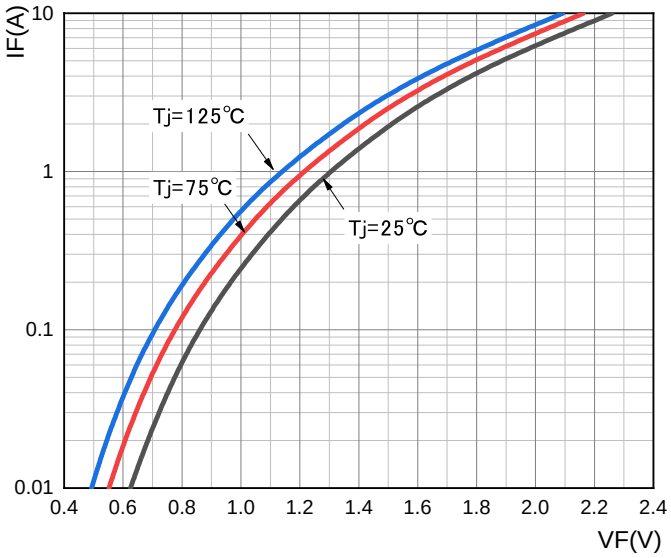
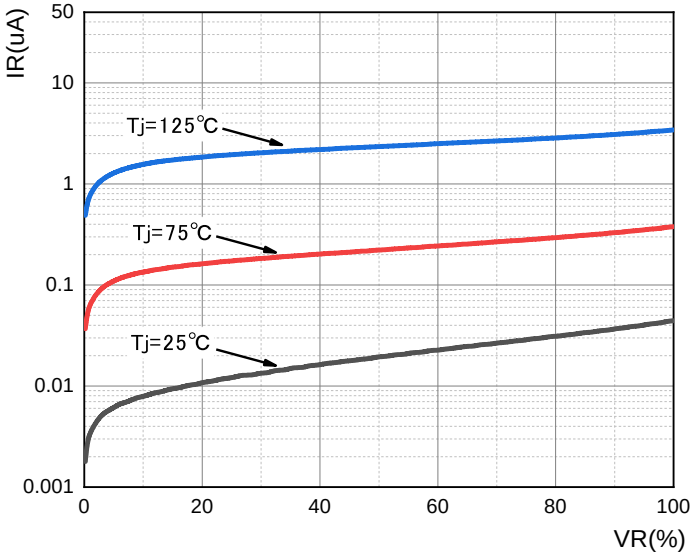
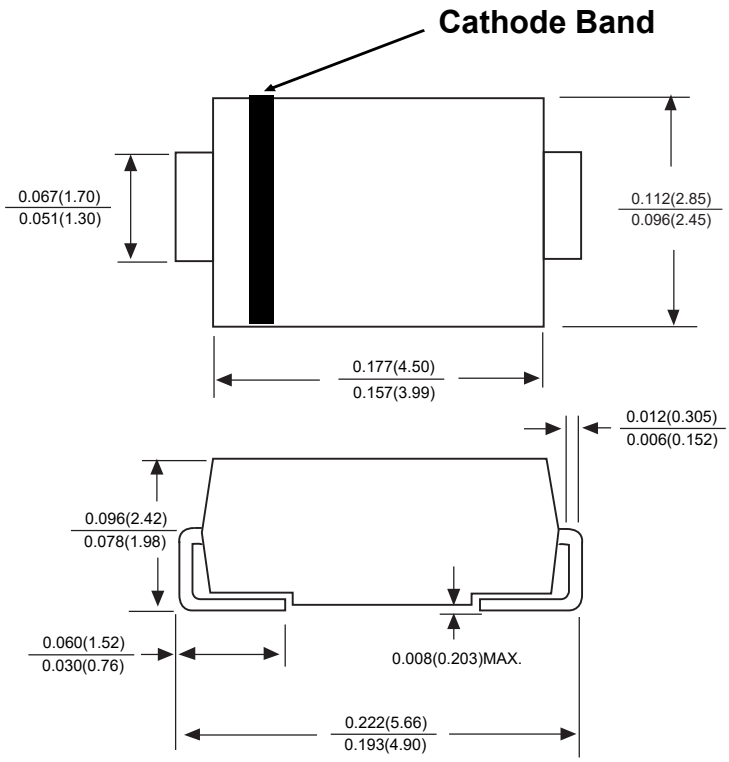



FIG.4 TYPCAL REVERSE CHARACTERISTICS

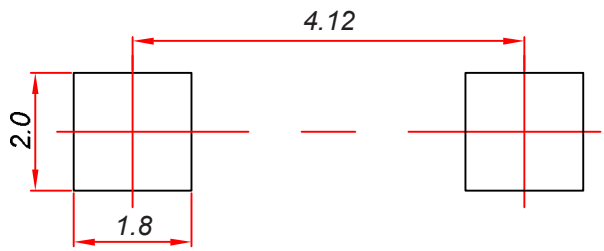


## SMAG Package Outline Dimensions




*Dimensions in inches and (millimeters)*

## SMAG Suggested Pad Layout




**Note:**
1.Controlling dimension: in millimeters.
2.General tolerance:±0.05 mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enha nts,improvements,corrections or other es without further notice to any product herein.SZCJ does not assume any liability arising out of the application or use of any product described .

## Reel Taping Specifications For Surface Mount Devices- SMAG

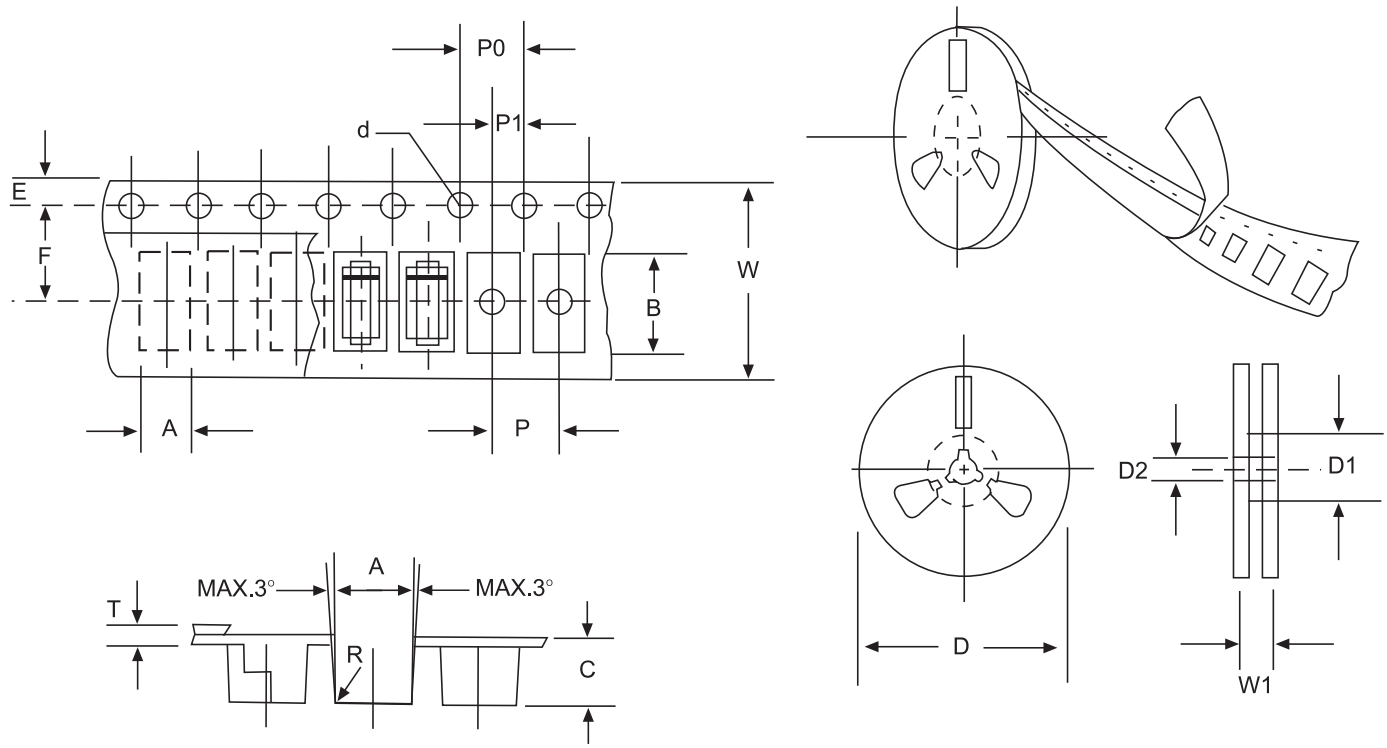



FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

| ITEM | SYMBOL | SMAG mm (inch) |
|---|---|---|
| Carrier width | A | 2.79±0.1 (0.110±0.004) |
| Carrier length | B | 5.33±0.1 (0.210±0.004) |
| Carrier depth | C | 2.36±0.1 (0.093±0.004) |
| Sprocket hole | d | 1.55±0.05 (0.061±0.002) |
| Reel outside diameter | D | 279±2.0 (11±0.079) |
| Reel inside diameter | D1 | 75±1.0 (2.95±0.039) |
| Feed hole position | D2 | 13±0.5 (0.512±0.020) |
| Stroket hole position | E | 1.75±0.1 (0.069±0.004) |
| Punch hole position | F | 5.5±0.05 (0.217±0.002) |
| Punch hole pitch | P | 4.0±0.1 (0.157±0.004) |
| Stroket 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 | 0.28±0.02 (0.011±0.0008) |
| Tape width | W | 12.0±0.2 (0.472±0.008) |
| Reel width | W1 | 16.8±2.0 (0.661±0.069) |

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