

## S1A-HF Thru. S1M-HF

**Reverse Voltage: 50 to 1000 Volts**

**Forward Current: 1.0 Amp**

**RoHS Device**

**Halogen Free**

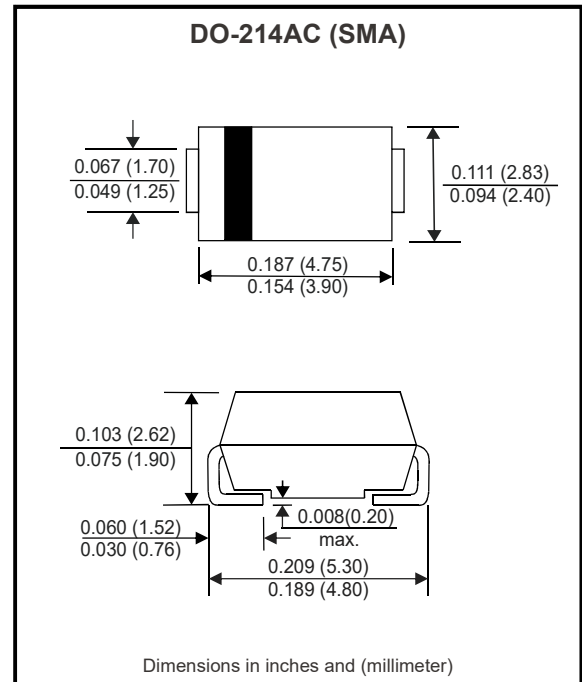


### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0.
- For surface mounted applications.
- Low reverse leakage.
- Built-in strain relief, ideal for automated placement.
- High forward surge current capability.
- High temperature soldering guaranteed : 250°C/10 seconds at terminals.
- Glass passivated chip junction.

### Mechanical data

- Case: JEDEC SMA molded plastic body over passivated chip.
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity: Color band denotes cathode end.
- Mounting position: Any.



### Circuit diagram



### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Parameter                                                                          | Symbol                          | S1A-HF      | S1B-HF | S1D-HF | S1G-HF | S1J-HF | S1K-HF | S1M-HF | Units              |
|------------------------------------------------------------------------------------|---------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------------------|
| Repetitive peak reverse voltage                                                    | $V_{RRM}$                       | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V                  |
| DC blocking voltage                                                                | $V_R$                           | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V                  |
| RMS voltage                                                                        | $V_{RMS}$                       | 35          | 70     | 140    | 280    | 420    | 560    | 700    | V                  |
| Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$                       | 30.0        |        |        |        |        |        |        | A                  |
| Average forward current                                                            | $I_{F(AV)}$                     | 1.0         |        |        |        |        |        |        | A                  |
| Forward voltage at 1.0A                                                            | $V_F$                           | 1.1         |        |        |        |        |        |        | V                  |
| DC reverse current                                                                 | $T_J=25^\circ\text{C}$<br>$I_R$ | 5           |        |        |        |        |        |        | $\mu\text{A}$      |
| DC blocking voltage                                                                |                                 |             |        |        |        |        |        |        |                    |
| Typical thermal resistance (Note 1)                                                | $R_{\theta JA}$                 | 75          |        |        |        |        |        |        | $^\circ\text{C/W}$ |
| Operating temperature range                                                        | $T_J$                           | -55 to +150 |        |        |        |        |        |        | $^\circ\text{C}$   |
| Storage temperature range                                                          | $T_{STG}$                       | -55 to +150 |        |        |        |        |        |        | $^\circ\text{C}$   |

Notes: 1. P.C.B mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas.

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

Rating and Characteristic Curves (S1A-HF thru. S1M-HF)

Fig.1 - Forward Current Derating Curve

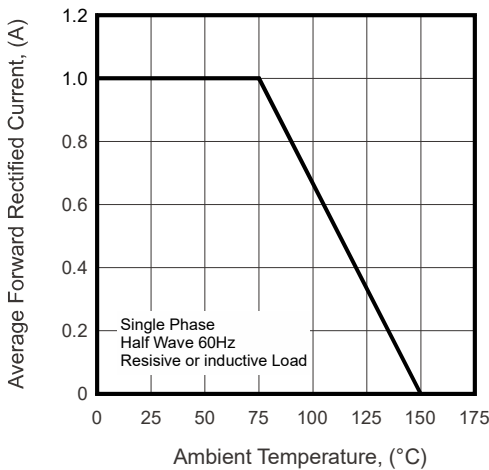


Fig.2 - Max. Non-Repetitive Peak Forward Surge Current

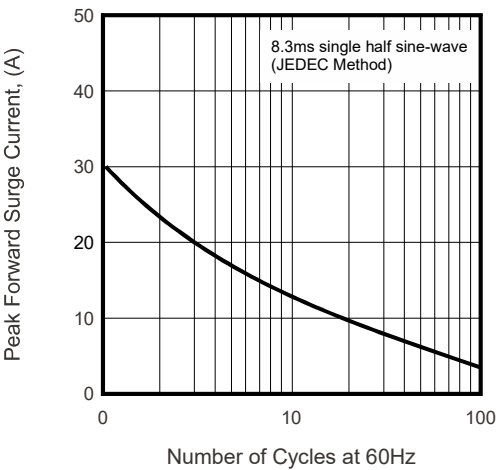


Fig.3 - Typical Instantaneous Forward Characteristics

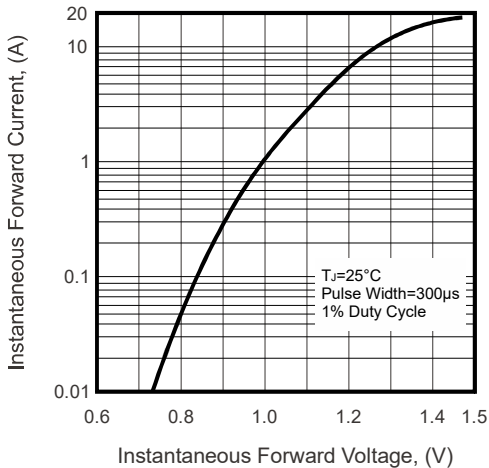
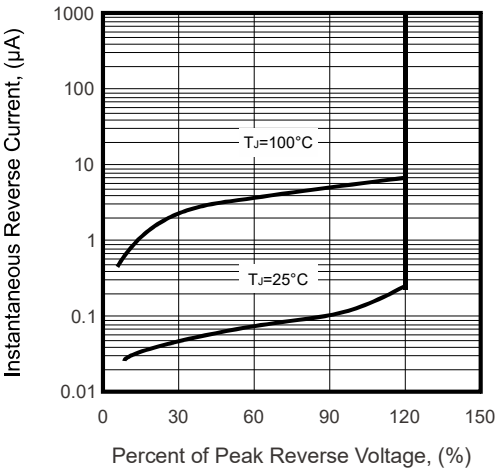
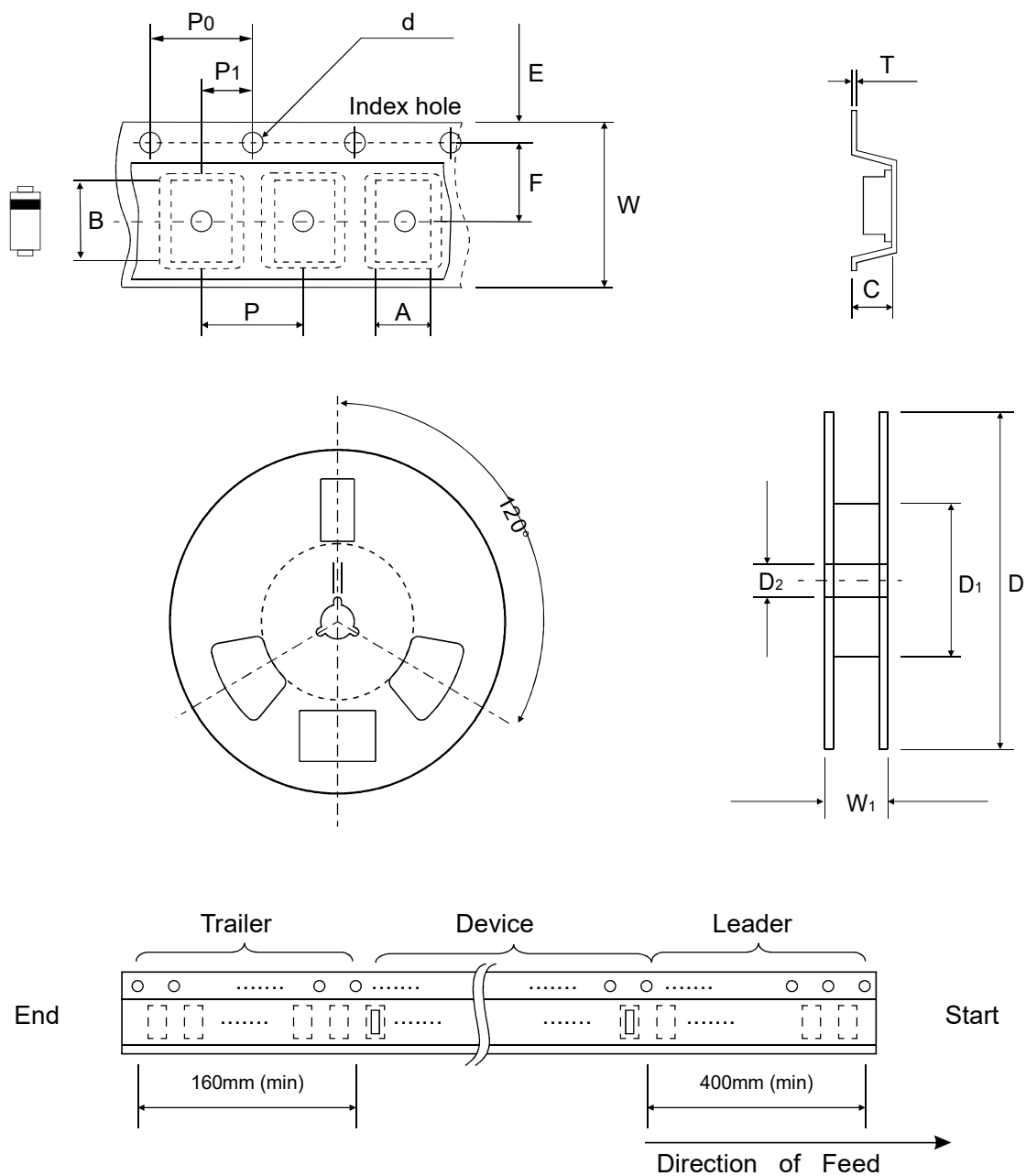


Fig.4 - Typical Reverse Characteristics



## Reel Taping Specification



| DO-214AC (SMA) | SYMBOL | A                 | B                 | C                 | d                 | D                  | D1 | D2                |
|----------------|--------|-------------------|-------------------|-------------------|-------------------|--------------------|----|-------------------|
|                | (mm)   | $2.80 \pm 0.10$   | $5.33 \pm 0.10$   | $2.36 \pm 0.10$   | $1.55 \pm 0.10$   | $330 \pm 2.00$     |    | $13.50 \pm 2.00$  |
|                | (inch) | $0.110 \pm 0.004$ | $0.210 \pm 0.004$ | $0.093 \pm 0.004$ | $0.061 \pm 0.004$ | $12.992 \pm 0.079$ |    | $0.531 \pm 0.079$ |

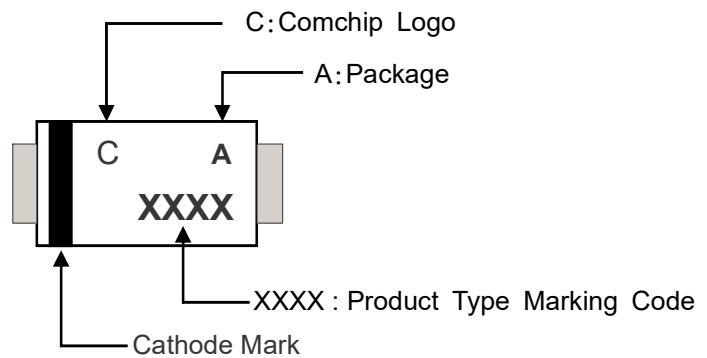
| DO-214AC (SMA) | SYMBOL | E                 | F                 | P                 | P <sub>0</sub>    | P <sub>1</sub>    | W                 | W <sub>1</sub> | T                 |
|----------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|-------------------|
|                | (mm)   | $1.75 \pm 0.10$   | $5.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $12.00 \pm 0.10$  |                | $0.25 \pm 0.10$   |
|                | (inch) | $0.069 \pm 0.004$ | $0.217 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.472 \pm 0.004$ |                | $0.010 \pm 0.004$ |

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REV:A

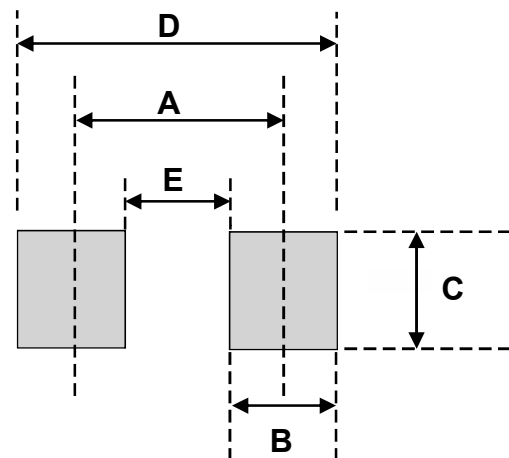
## Marking Code

| Part Number | Marking code |
|-------------|--------------|
| S1A-HF      | GS1A         |
| S1B-HF      | GS1B         |
| S1D-HF      | GS1D         |
| S1G-HF      | GS1G         |
| S1J-HF      | GS1J         |
| S1K-HF      | GS1K         |
| S1M-HF      | GS1M         |



## Suggested PAD Layout

| SIZE | DO-214AC (SMA) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 4.00           | 0.157  |
| B    | 2.50           | 0.100  |
| C    | 1.80           | 0.071  |
| D    | 6.50           | 0.256  |
| E    | 1.50           | 0.060  |



## Standard Packaging

| Case Type         | REEL PACK       |                     |
|-------------------|-----------------|---------------------|
|                   | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DO-214AC<br>(SMA) | 5,000           | 13                  |