

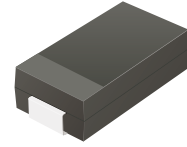
## S1A-HF Thru. S1M-HF

**Reverse Voltage: 50 to 1000 V**

**Forward Current: 1.0 A**

**RoHS Device**

**Halogen Free**

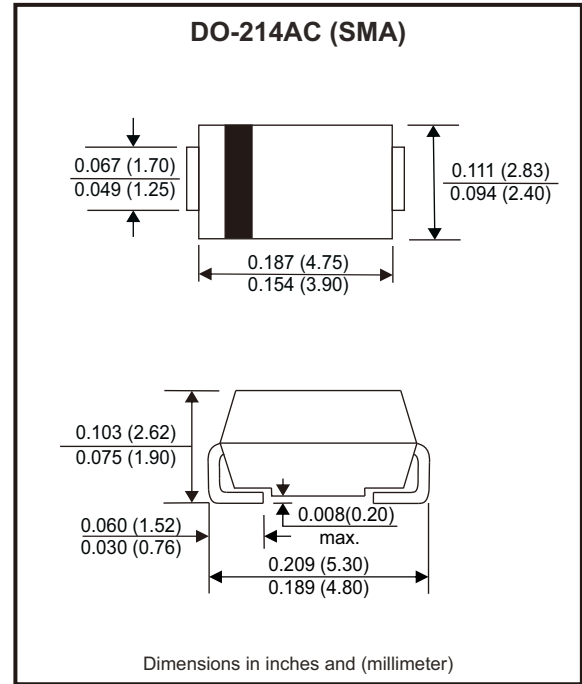


### Features

- 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.

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

Fig.1 - Forward Current Derating Curve

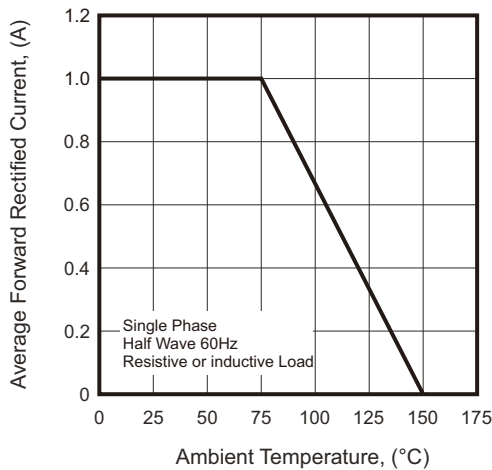


Fig.2 - Max. Non-Repetitive Peak Forward Surge Current

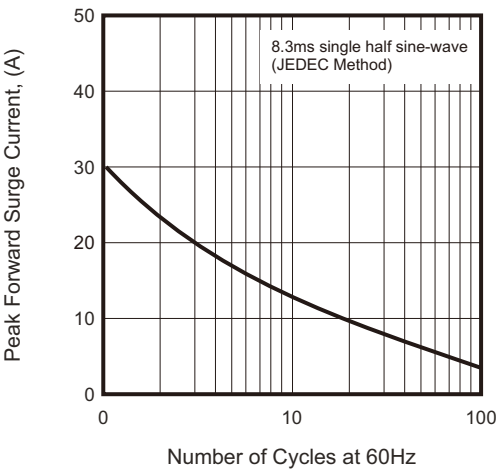


Fig.3 - Typical Instantaneous Forward Characteristics

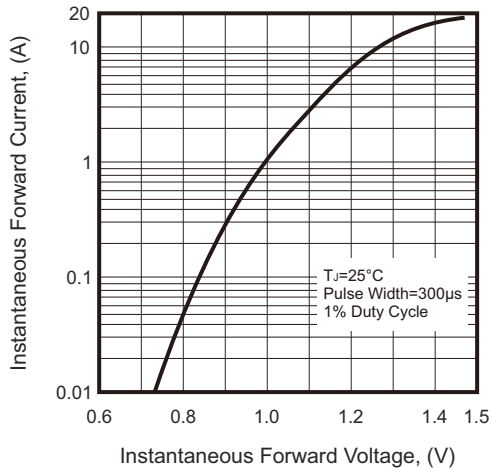
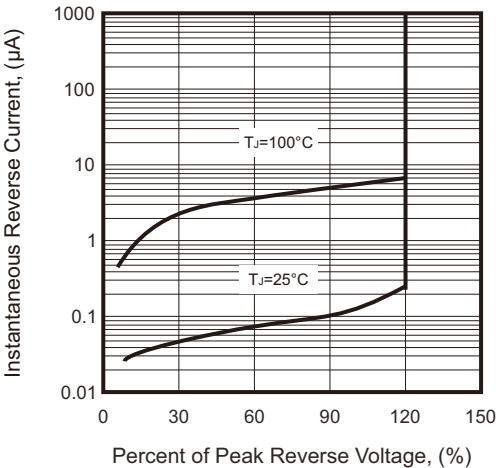
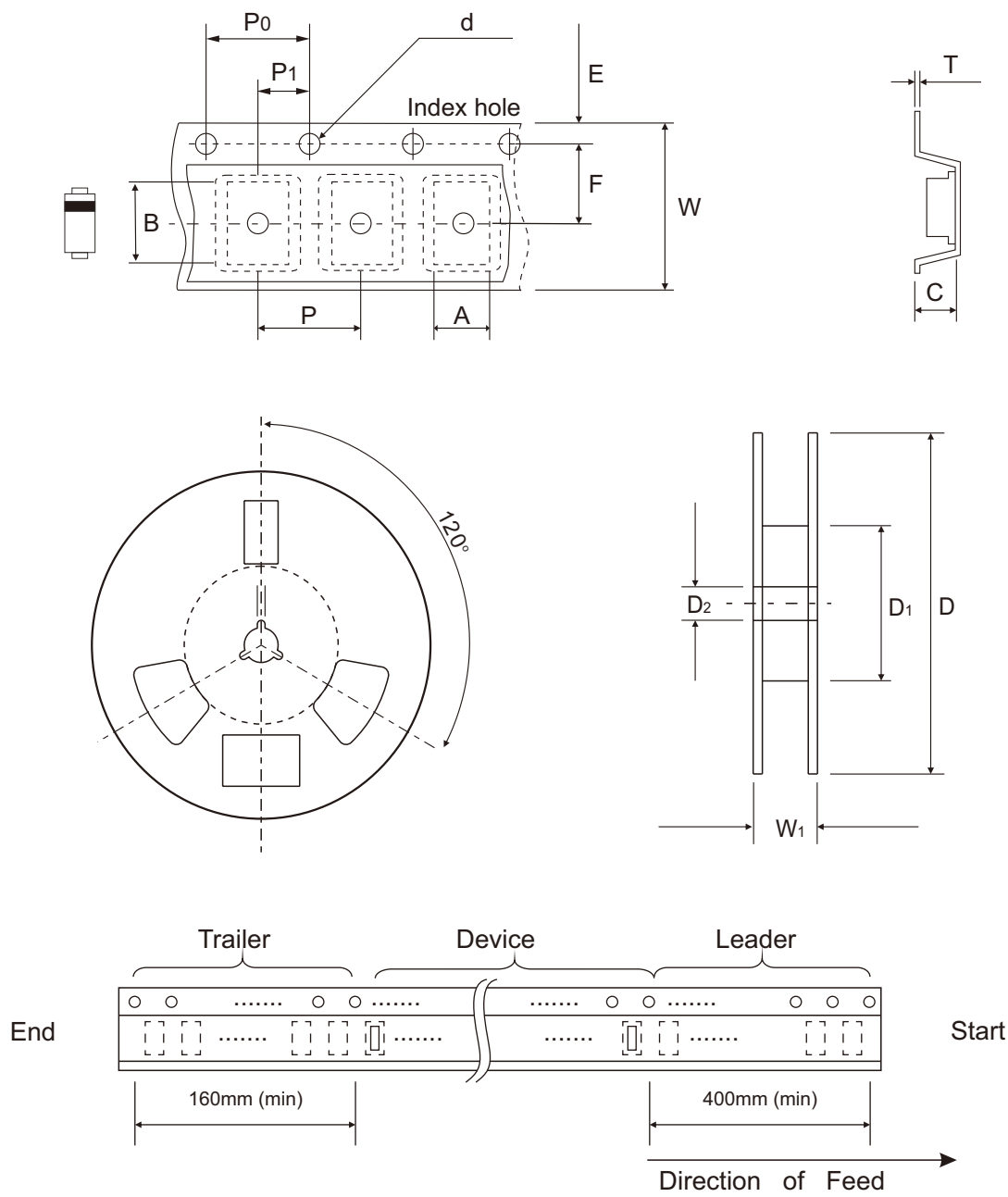


Fig.4 - Typical Reverse Characteristics



Reel Taping Specification

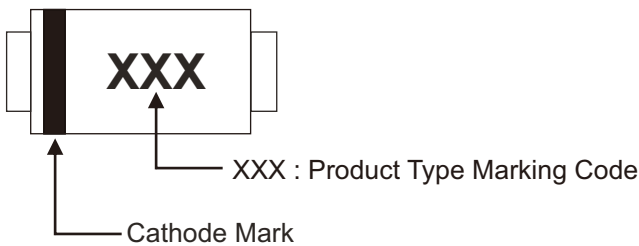


| DO-214AC<br>(SMA) | SYMBOL | A             | B             | C             | d             | D              | D1         | D2            |
|-------------------|--------|---------------|---------------|---------------|---------------|----------------|------------|---------------|
|                   | (mm)   | 2.80 ± 0.10   | 5.33 ± 0.10   | 2.36 ± 0.10   | 1.55 ± 0.10   | 330 ± 2.00     | 50 MIN.    | 13.50 ± 2.00  |
|                   | (inch) | 0.110 ± 0.004 | 0.210 ± 0.004 | 0.093 ± 0.004 | 0.061 ± 0.004 | 12.992 ± 0.079 | 1.969 MIN. | 0.531 ± 0.079 |

| DO-214AC<br>(SMA) | SYMBOL | E             | F             | P             | P0            | P1            | W             | W1         | T             |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|------------|---------------|
|                   | (mm)   | 1.75 ± 0.10   | 5.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.10   | 12.00 ± 0.10  | 18.40 MAX. | 0.25 ± 0.10   |
|                   | (inch) | 0.069 ± 0.004 | 0.217 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.472 ± 0.004 | 0.724 MAX. | 0.010 ± 0.004 |

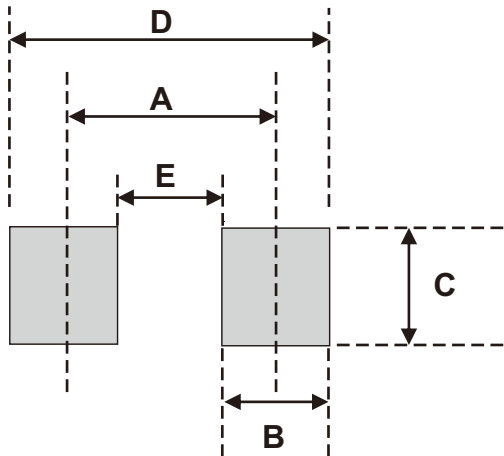
Marking Code

| Part Number | Marking code |
|-------------|--------------|
| S1A-HF      | S1A          |
| S1B-HF      | S1B          |
| S1D-HF      | S1D          |
| S1G-HF      | S1G          |
| S1J-HF      | S1J          |
| S1K-HF      | S1K          |
| S1M-HF      | S1M          |



Suggested P.C.B. 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                  |