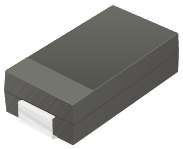
# S1A-HF Thru. S1M-HF

## Reverse Voltage: 50 to 1000 Volts
## Forward Current: 1.0 Amp
## RoHS Device
## Halogen Free



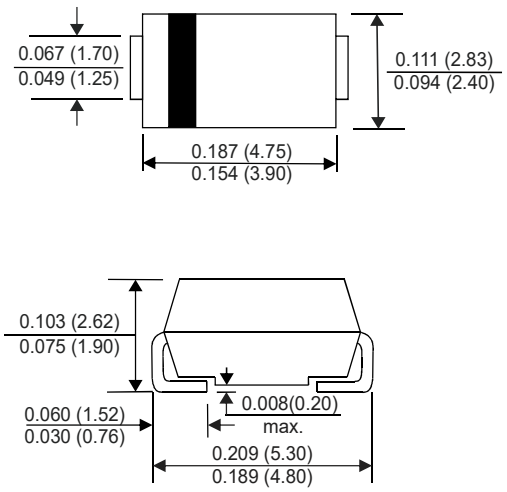
### Features

- 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.

**DO-214AC (SMA)**




Dimensions in inches and (millimeter)

### 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 forwardsurge 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°C | $I_R$ | 5 | | | | | | | μA |
| DC blocking voltage | | | | | | | | | | |
| Typical thermal resistance (Note 1) | | $R_{\theta JA}$ | 75 | | | | | | | °C/W |
| Operating temperature range | | $T_J$ | -55 to +150 | | | | | | | °C |
| Storage temperature range | | $T_{STG}$ | -55 to +150 | | | | | | | °C |

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

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

Fig.1 - Forward Current Derating Curve

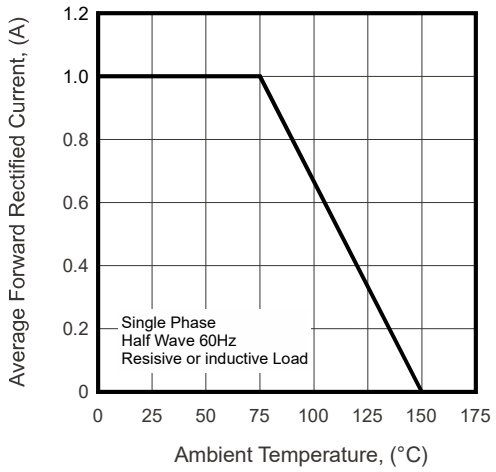



Fig.2 - Max. Non-Repetitive Peak Forward Surge Current

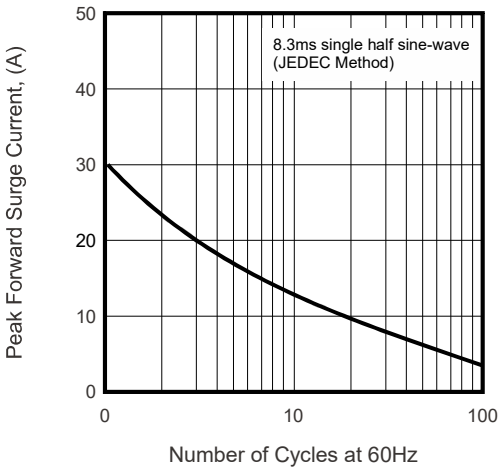



Fig.3 - Typical Instantaneous Forward Characteristics

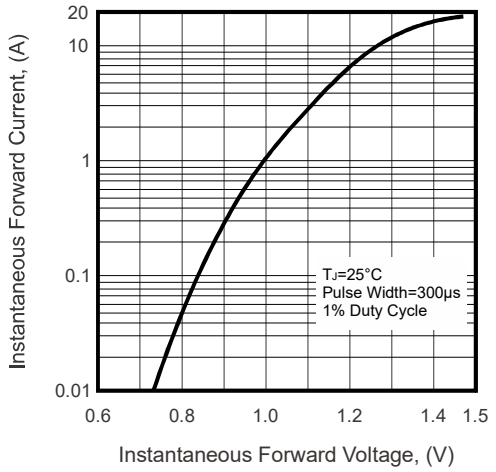
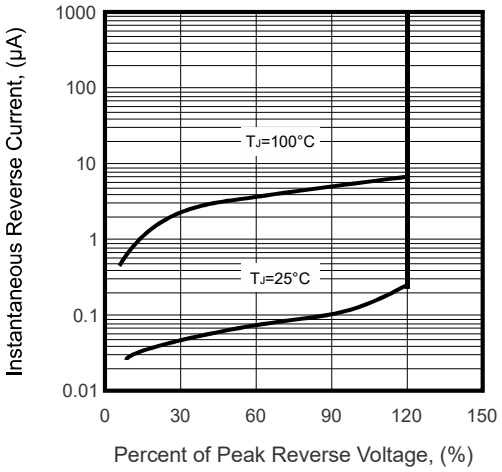
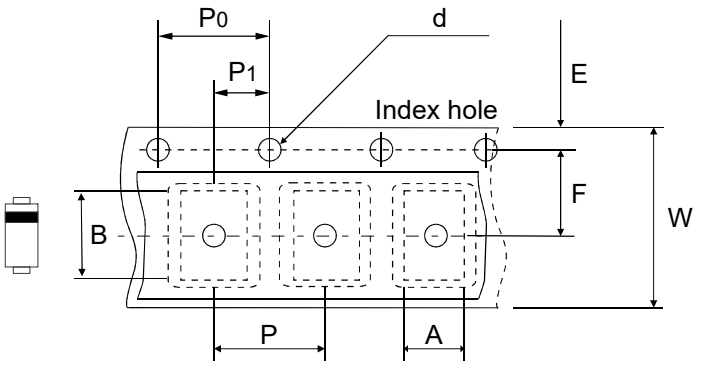
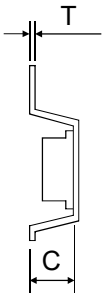


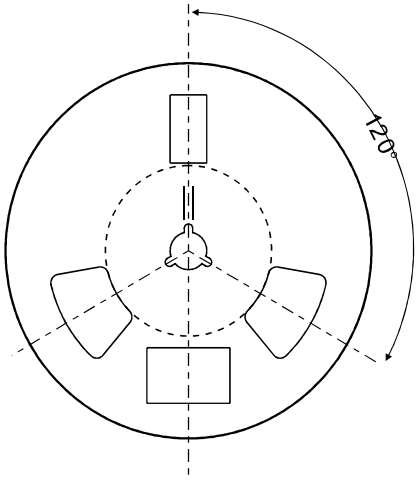

Fig.4 - Typical Reverse Characteristics

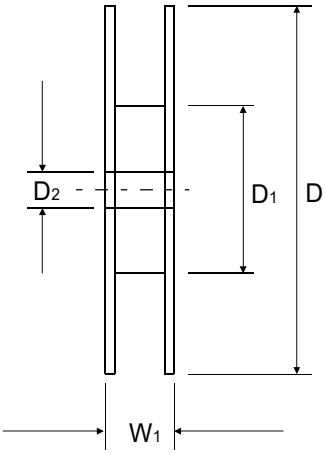


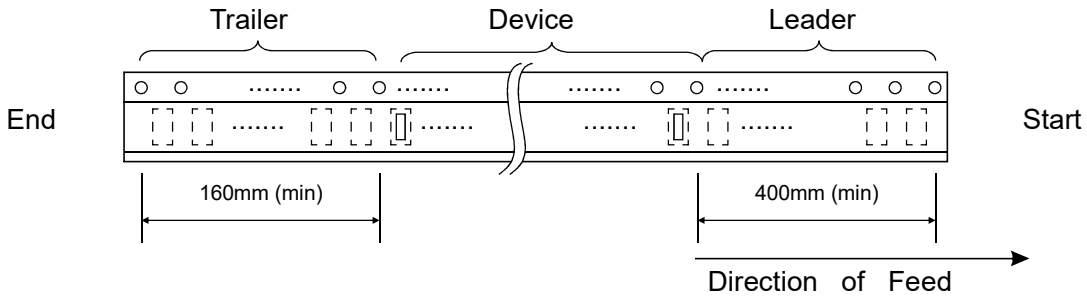
# Reel Taping Specification




| | SYMBOL | A | B | C | d | D | D1 | D2 |
|---|---|---|---|---|---|---|---|---|
| DO-214AC (SMA) | (mm) | 2.80 ± 0.10 | 5.33 ± 0.10 | 2.36 ± 0.10 | 1.55 ± 0.10 | 330 ± 2.00 | | 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 | | 0.531 ± 0.079 |

| | SYMBOL | E | F | P | P0 | P1 | W | W1 | T |
|---|---|---|---|---|---|---|---|---|---|
| DO-214AC (SMA) | (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 | | 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 | | 0.010 ± 0.004 |

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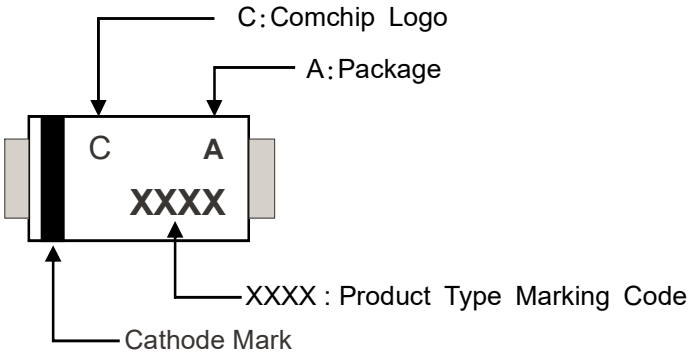
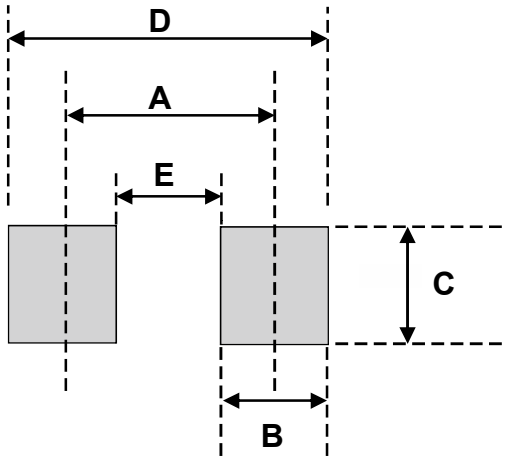
## Marking Code

| 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 ( pcs ) | Reel Size (inch) |
| DO-214AC (SMA) | 5,000 | 13 |