

# AS1AHS-HF Thru. AS1JHS-HF

Reverse Voltage: 50 to 600 V

Forward Current: 1 A

RoHS Device

Halogen Free



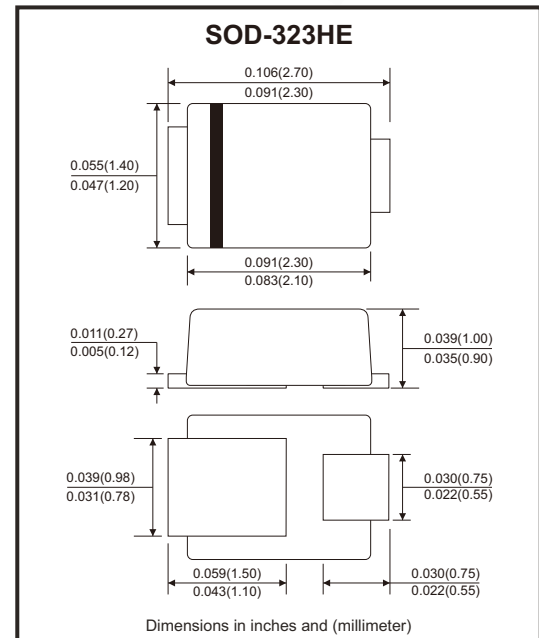
## Features

- Low profile package.
- Ideal for automated placement.
- Glass passivated chip junction.
- High forward surge capability.
- AEC-Q101 Qualified.

## Mechanical data

- Case: SOD-323HE, molded plastic.
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102.
- Polarity: Cathode line denotes the cathode end.
- Mounting position: Any.

## Circuit Diagram



## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20%.

| Parameter                                                                                                | Symbols                       | AS1AHS-HF   | AS1BHS-HF | AS1DHS-HF | AS1GHS-HF | AS1JHS-HF | Units            |
|----------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-----------|-----------|-----------|-----------|------------------|
| Maximum repetitive peak reverse voltage                                                                  | V <sub>RRM</sub>              | 50          | 100       | 200       | 400       | 600       | V                |
| Maximum RMS voltage                                                                                      | V <sub>RMS</sub>              | 35          | 70        | 140       | 280       | 420       | V                |
| Maximum average forward rectified current at TL (Fig.1)                                                  | I <sub>O</sub>                | 1           |           |           |           |           | A                |
| Surge (non-repetitive) forward current @60Hz half-sine wave, 1 cycle, T <sub>J</sub> =25°C               | I <sub>FSM</sub>              | 18          |           |           |           |           | A                |
| Current squared time @ 1ms ≤ t < 8.3ms T <sub>J</sub> =25°C                                              | I <sup>2</sup> <sub>t</sub>   | 1.34        |           |           |           |           | A <sup>2</sup> s |
| Maximum instantancous forward voltage drop per diode @ I <sub>F</sub> =1A                                | V <sub>F</sub>                | 1.1         |           |           |           |           | V                |
| Typical junction capacitance @ V <sub>R</sub> =4V, 1MHz                                                  | C <sub>J</sub>                | 5           |           |           |           |           | pF               |
| Maximum DC reverse current at rated DC blocking voltage<br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C | I <sub>R</sub>                | 5<br>50     |           |           |           |           | μA               |
| Thermal resistance                                                                                       | (Note 1)<br>R <sub>θJA</sub>  | 270         |           |           |           |           | °C/W             |
|                                                                                                          | (Note 1)<br>R <sub>θJL</sub>  | 90          |           |           |           |           |                  |
|                                                                                                          | (Note 2)<br>R <sub>θJSP</sub> | 10          |           |           |           |           |                  |
| Operating Junction temperature range                                                                     | T <sub>J</sub>                | -55 to +175 |           |           |           |           | °C               |
| Storage temperature range                                                                                | T <sub>STG</sub>              | -55 to +175 |           |           |           |           | °C               |

Notes: 1. Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B without copper pad areas.

2. Thermal resistance between junction and cathode tab solder point.

Typical Rating and Characteristic Curves (AS1AHS-HF Thru. AS1JHS-HF)

Fig.1 - Forward Current Derating Curve

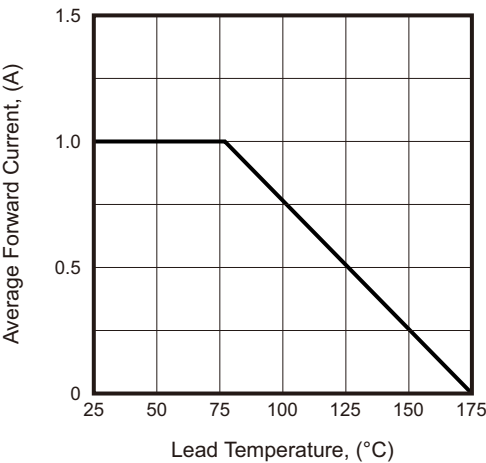


Fig.2 - Forward Surge Current Capability

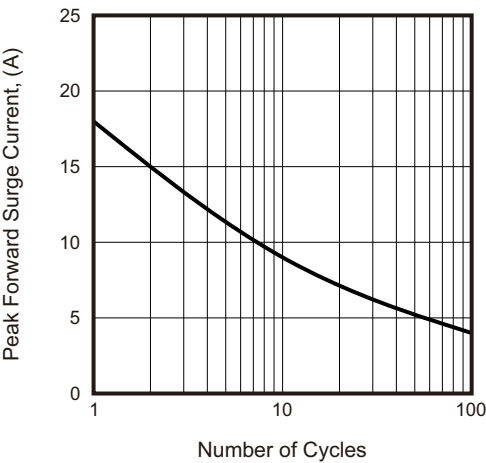


Fig.3 - Typical Instantaneous Forward Characteristic

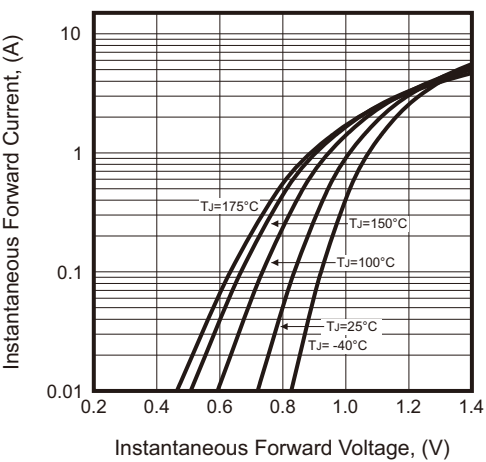
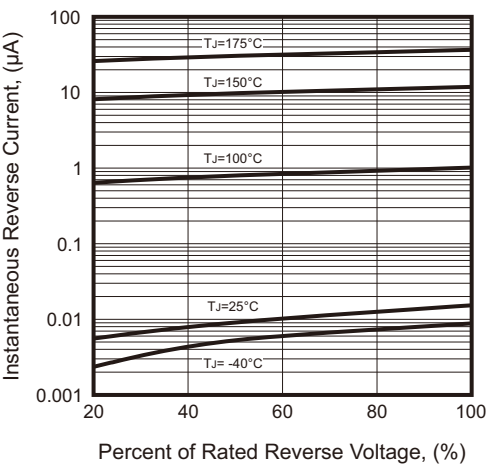
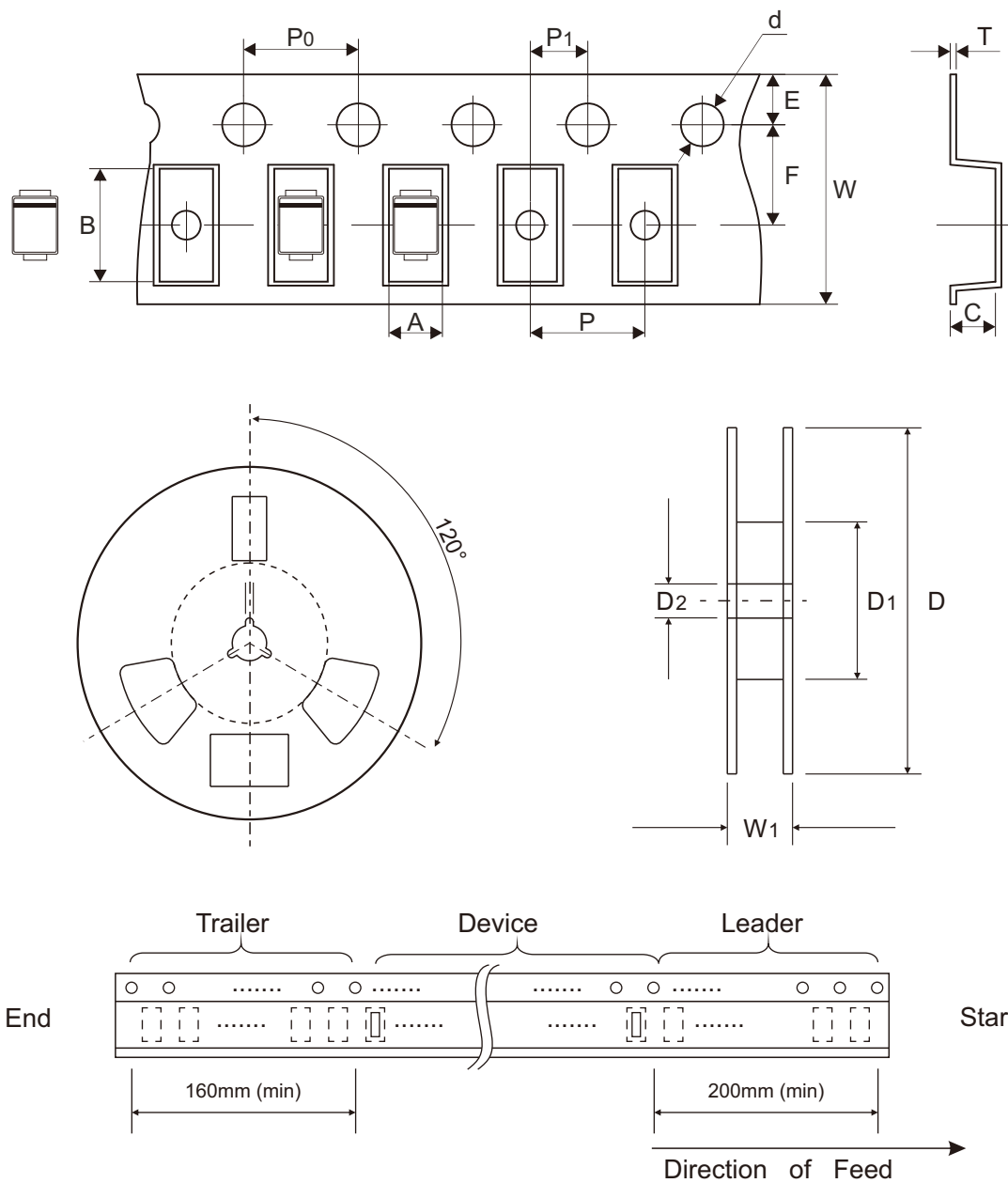


Fig.4 - Typical Reverse Characteristics



Reel Taping Specification

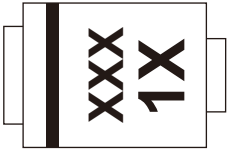


| SOD-323HE | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|           | (mm)   | 1.50 ± 0.10   | 2.80 ± 0.10   | 1.20 ± 0.10   | 1.55 ± 0.05   | 178.00 ± 1.00 | 55.00 ± 0.50  | 13.30 ± 0.20  |
|           | (inch) | 0.059 ± 0.004 | 0.110 ± 0.004 | 0.047 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.039 | 2.165 ± 0.020 | 0.524 ± 0.008 |

| SOD-323HE | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1            |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|           | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.20 ± 0.02   | 8.00 ± 0.10   | 11.40 ± 0.30  |
|           | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.001 | 0.315 ± 0.004 | 0.449 ± 0.012 |

Marking Code

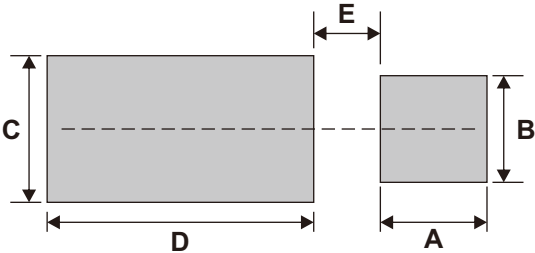
| Part Number | Marking Code |
|-------------|--------------|
| AS1AHS-HF   | 1A           |
| AS1BHS-HF   | 1B           |
| AS1DHS-HF   | 1D           |
| AS1GHS-HF   | 1G           |
| AS1JHS-HF   | 1J           |



█ = Cathode band  
XXX = Control code  
1X = Product type marking code

Suggested P.C.B. PAD Layout

| SIZE | SOD-323HE |        |
|------|-----------|--------|
|      | (mm)      | (inch) |
| A    | 0.80      | 0.031  |
| B    | 0.80      | 0.031  |
| C    | 1.10      | 0.043  |
| D    | 2.00      | 0.079  |
| E    | 0.50      | 0.020  |



Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOD-323HE | 3,000           | 7                   |