

Small Signal Product

Features

- ◇ Fast switching device($T_{rr}<4.0ns$)
- ◇ Surface device type mounting
- ◇ Moisture sensitivity level 1
- ◇ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ◇ Pb free version and RoHS compliant
- ◇ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

SOD-323F



Mechanical Data

- ◇ Case : Flat lead SOD-323F small outline plastic package
- ◇ Terminal : Matte tin plated, solderable per MIL-STD-202, method 208 guaranteed
- ◇ High temperature soldering guaranteed : 260°C/10s
- ◇ Polarity : Indicated by cathode band
- ◇ Weight : 4.85 ± 0.5 mg
- ◇ Marking Code : S1, S2, S3



Ordering Information (example)

| Part No. | Package | Packing | Packing code | Packing code (Green) | Manufacture code |
|----------|----------|--------------|--------------|----------------------|------------------|
| 1N4148WS | SOD-323F | 3K / 7" Reel | RR | RRG | |

Note : Detail please see "Ordering Information(detail, example)" below.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

| Parameter | Symbol | Value | Units |
|------------------------------------------|-----------------|--------------|-------|
| Power Dissipation | P_D | 200 | mW |
| Non-Repetitive Peak Reverse Voltage | V_{RM} | 100 | V |
| Repetitive Peak Reverse Voltage | V_{RRM} | 75 | V |
| Reverse Voltage | V_R | 100 | V |
| Non-Repetitive Peak Forward Current | I_{FRM} | 300 | mA |
| Mean Forward Current | I_O | 150 | mA |
| Thermal Resistance (Junction to Ambient) | $R_{\theta JA}$ | 625 | °C/W |
| Junction and Storage Temperature Range | T_J, T_{STG} | -65 to + 150 | °C |

Electrical Characteristics

| Parameter | Symbol | Min | Max | Units | |
|---------------------------|------------|-------------------------------------|------|-------|---------|
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R=100\mu A$ | 100 | - | V |
| | | $I_R=5\mu A$ | 75 | - | |
| Forward Voltage | V_F | 1N4448WS, 1N914BWS $I_F=5.0mA$ | 0.62 | 0.72 | V |
| | | 1N4148WS $I_F=10.0mA$ | - | 1.0 | |
| | | 1N4448WS, 1N914BWS $I_F=100.0mA$ | - | 1.0 | |
| Reverse Leakage Current | I_R | $V_R=20V$ | - | 25 | nA |
| | | $V_R=75V$ | - | 5.0 | μA |
| Junction Capacitance | C_J | - | 4.0 | pF | |
| Reverse Recovery Time | T_{rr} | - | 4.0 | ns | |

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RATINGS AND CHARACTERISTIC CURVES

Fig. 1 Forward Voltage VS. Forward Current

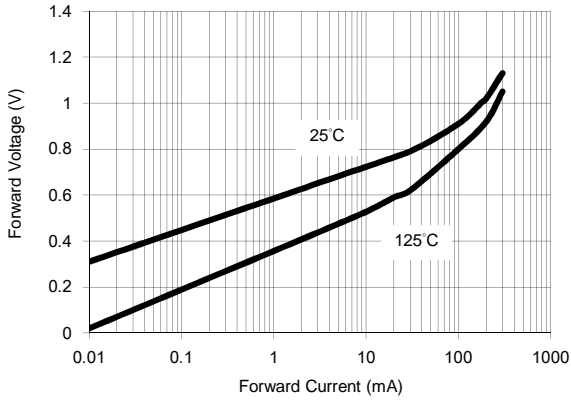


Fig. 2 Reverse Current vs Reverse Voltage

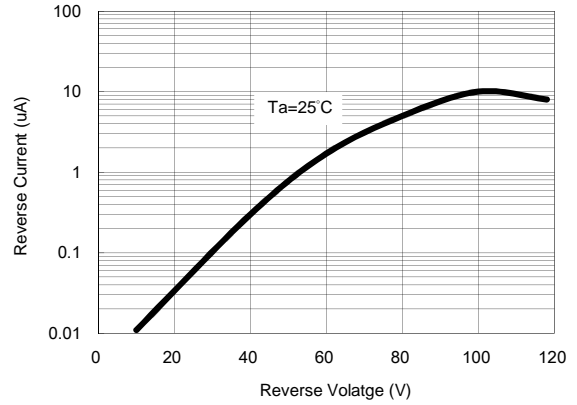


Fig. 3 Admissible Power Dissipation Curve

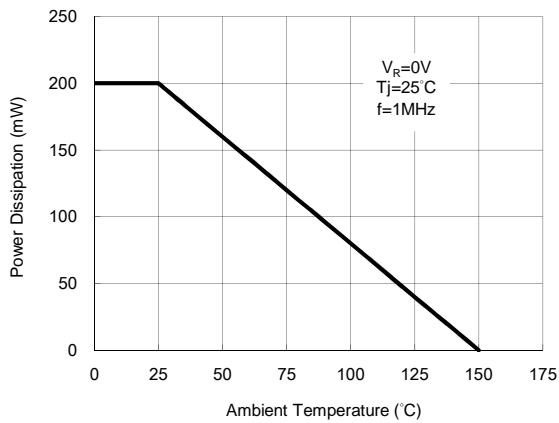
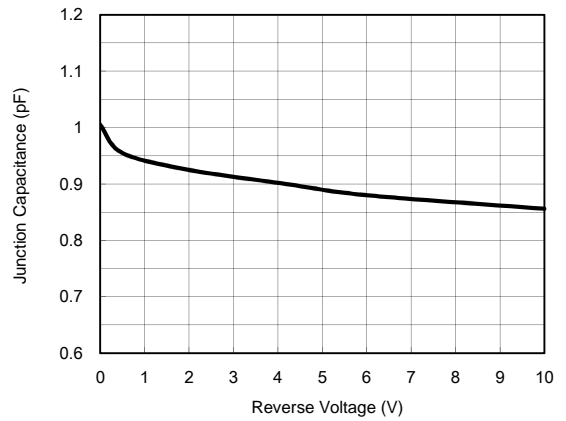


Fig. 4 Typical Junction Capacitance



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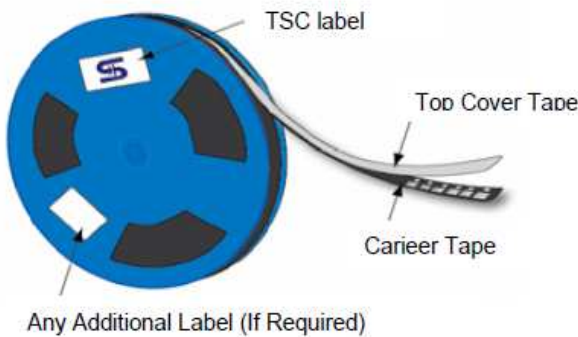
Ordering information (Detail, example)

| Part No. | Package | Packing | Packing code | Packing code (Green) | Manufacture code |
|----------------------|---------|--------------|--------------|----------------------|------------------|
| 1NxxxxWS (Note 1) | SOD-323 | 3K / 7" Reel | RR | RRG | (Note 2) |
| | | 3K / 7" Reel | RQ | RQG | |
| 1N4148WS | SOD-323 | 3K / 7" Reel | RR | RRG | |
| 1N4148WS | SOD-323 | 3K / 7" Reel | RR | RRG | |

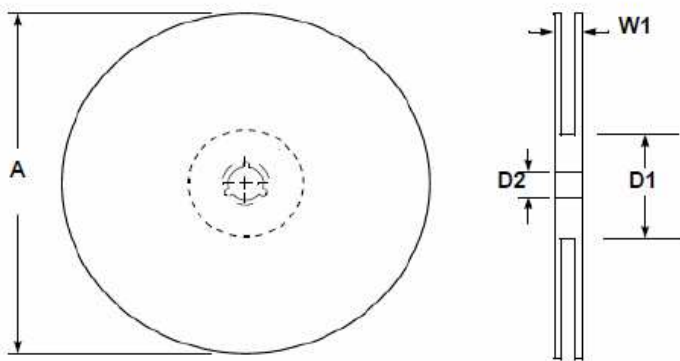
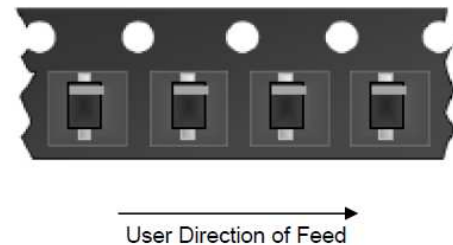
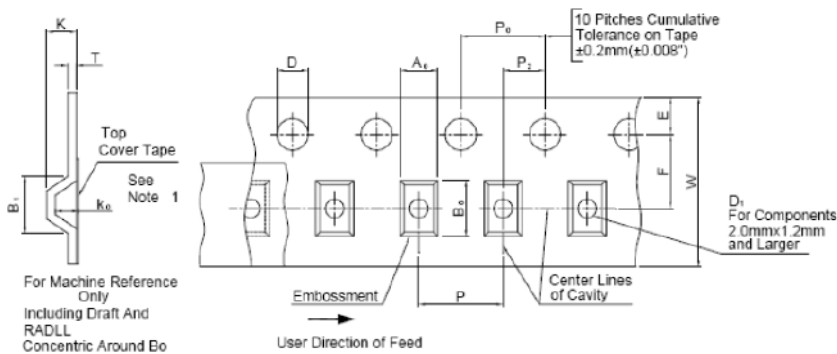
Note 1 : "xxxx" is Device Code from "4148" to "914B".

Note 2 : Manufacture special control, if empty means no special control requirement.

Tape & Reel specification



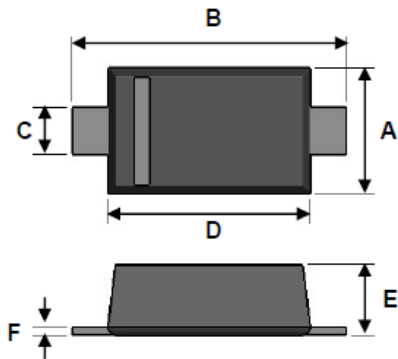
| Item | Symbol | Dimension(mm) |
|------------------------|--------|---------------|
| Carrier depth | K | 2.40 Max. |
| Sprocket hole | D | 1.5 ± 0.1 |
| Reel outside diameter | A | 178 ± 1 |
| Reel inner diameter | D1 | 50 Min. |
| Feed hole width | D2 | 13.0 ± 0.5 |
| Sprocket hole position | E | 1.75 ± 0.10 |
| Punch hole position | F | 3.50 ± 0.05 |
| Sprocket hole pitch | P0 | 4.00 ± 0.10 |
| Embossment center | P1 | 2.00 ± 0.10 |
| Overall tape thickness | T | 0.6 Max. |
| Tape width | W | 8.30 Max. |
| Reel width | W1 | 14.4 Max |



Note 1 : A_0 , B_0 , and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max. The component cannot rotate more than 10° within the determined cavity.

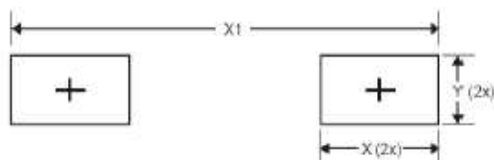
Note 2 : If B_1 exceeds 4.2mm(0.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.

Dimensions



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 1.15 | 1.35 | 0.045 | 0.053 |
| B | 2.30 | 2.80 | 0.091 | 0.110 |
| C | 0.25 | 0.40 | 0.010 | 0.016 |
| D | 1.60 | 1.80 | 0.063 | 0.071 |
| E | 0.80 | 1.10 | 0.031 | 0.043 |
| F | 0.05 | 0.25 | 0.002 | 0.010 |

Suggested PAD Layout



| DIM. | Unit(mm) | Unit(inch) |
|------|----------|------------|
| | Typ. | Typ. |
| X | 0.710 | 0.028 |
| X1 | 2.900 | 0.114 |
| Y | 0.403 | 0.016 |

Marking

| Part No. | Marking |
|----------|---------|
| 1N4148WS | S1 |
| 1N4448WS | S2 |
| 1N914BWS | S3 |

Note : 1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application.