

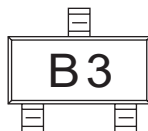
## SOT-323 Plastic-Encapsulate Diodes

### ULTRA HIGH SPEED SWITCHING APPLICATIONS

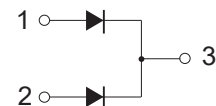
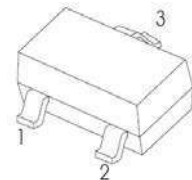
#### ■ Features

- Low forward voltage:  $V_{F(3)} = 0.90 \text{ V (Typ)}$
- Fast reverse recovery time:  $t_{rr} = 1.6 \text{ ns}$
- (Typ) Small total capacitance:  $C_t = 0.9 \text{ pF (Typ)}$

#### ■ Marking



#### SOT-323



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

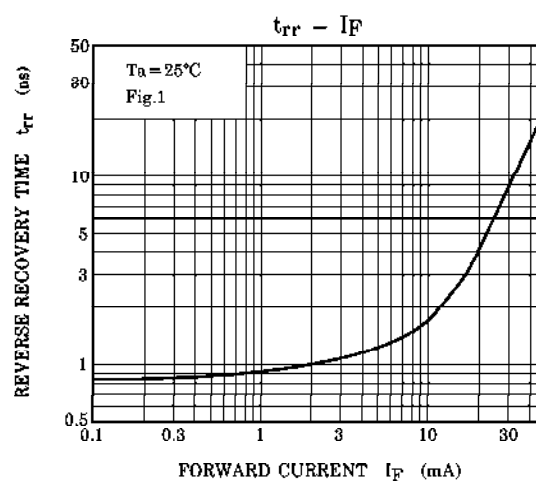
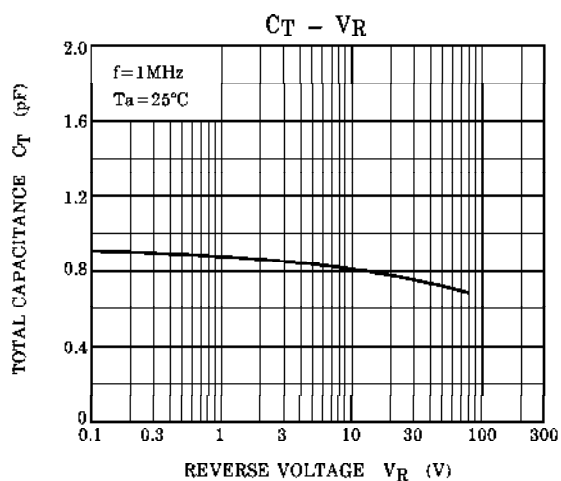
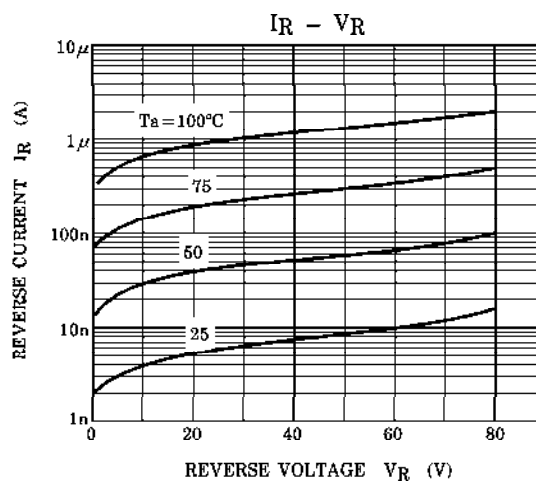
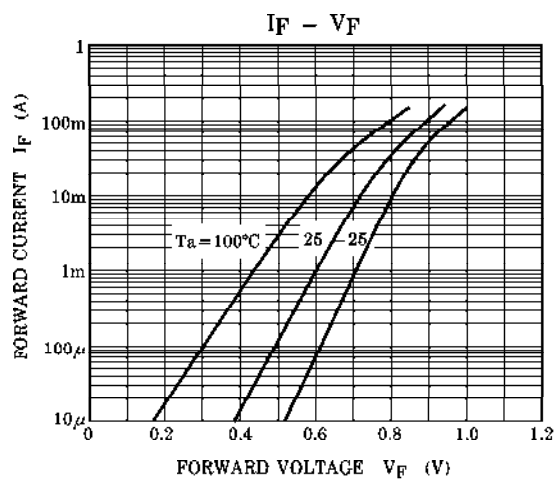
| Parameter                      | Symbol    | Rating      | Unit             |
|--------------------------------|-----------|-------------|------------------|
| Maximum (peak) reverse voltage | $V_{RM}$  | 85          | V                |
| Reverse voltage                | $V_R$     | 80          | V                |
| Maximum (peak) forward current | $I_{FM}$  | 300(*)      | mA               |
| Average forward current        | $I_O$     | 100(*)      | mA               |
| Surge current (10 ms)          | $I_{FSM}$ | 2(*)        | A                |
| Power dissipation              | $P$       | 100         | mW               |
| Junction Temperature           | $T_j$     | 125         | $^\circ\text{C}$ |
| Storage Temperature            | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |

(\*) Unit rating. Total rating = Unit rating  $\times 1.5$

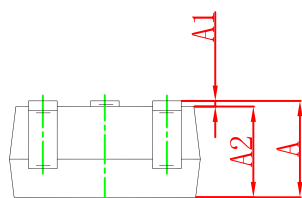
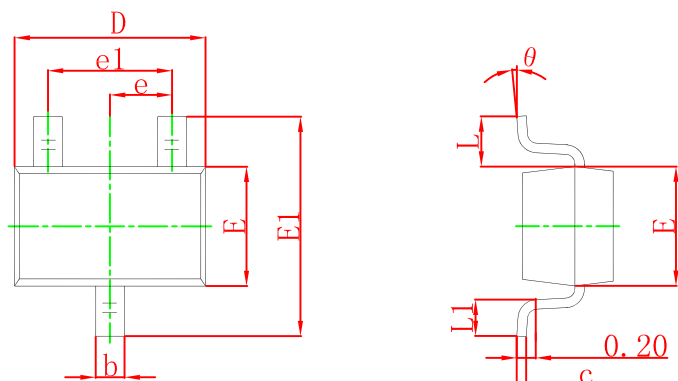
#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter             | Symbol     | Test Conditions                | Min | Typ  | Max | Unit          |
|-----------------------|------------|--------------------------------|-----|------|-----|---------------|
| Forward voltage       | $V_{F(1)}$ | $I_F = 1 \text{ mA}$           |     | 0.60 |     | V             |
|                       | $V_{F(2)}$ | $I_F = 10 \text{ mA}$          |     | 0.72 |     |               |
|                       | $V_{F(3)}$ | $I_F = 100 \text{ mA}$         |     | 0.90 | 1.2 |               |
| Reverse current       | $I_{R(1)}$ | $V_R = 30 \text{ V}$           |     |      | 0.1 | $\mu\text{A}$ |
|                       | $I_{R(2)}$ | $V_R = 80 \text{ V}$           |     |      | 0.5 |               |
| Total capacitance     | $C_t$      | $V_R = 0, f = 1.0 \text{ MHz}$ |     | 0.9  | 3.0 | pF            |
| Reverse recovery time | $t_{rr}$   | $I_F = 10 \text{ mA}$          |     | 1.6  | 4.0 | ns            |

## Typical Characteristics

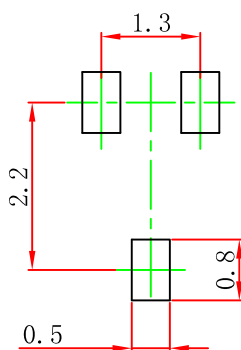


## SOT-323 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.200                     | 0.400 | 0.008                | 0.016 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.450 | 0.085                | 0.096 |
| e      | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF                 |       | 0.021 REF            |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-323 Suggested Pad Layout

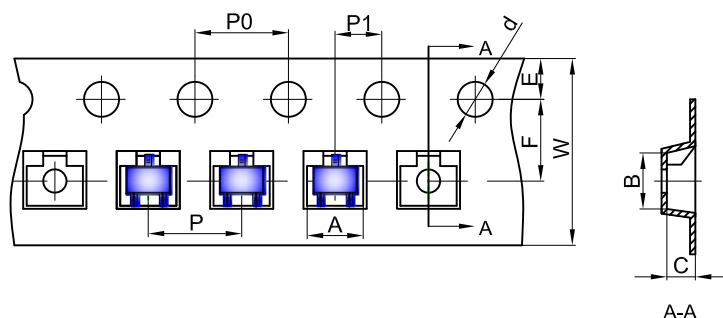


Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

## SOT-323 Tape and Reel

### SOT-323 Embossed Carrier Tape

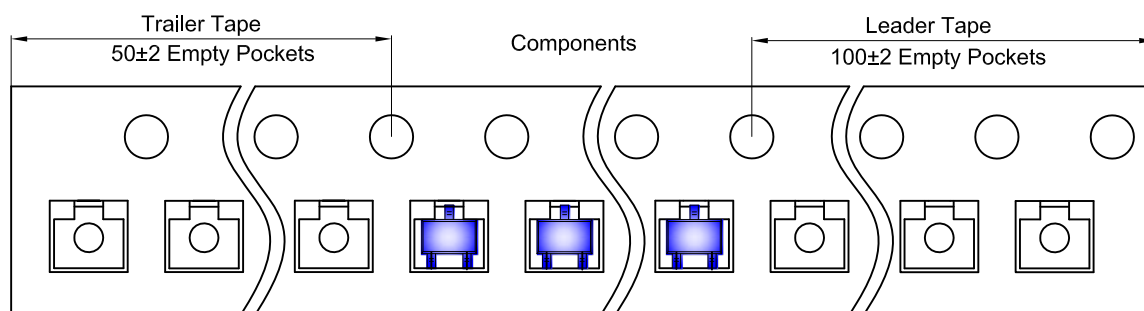


#### Packaging Description:

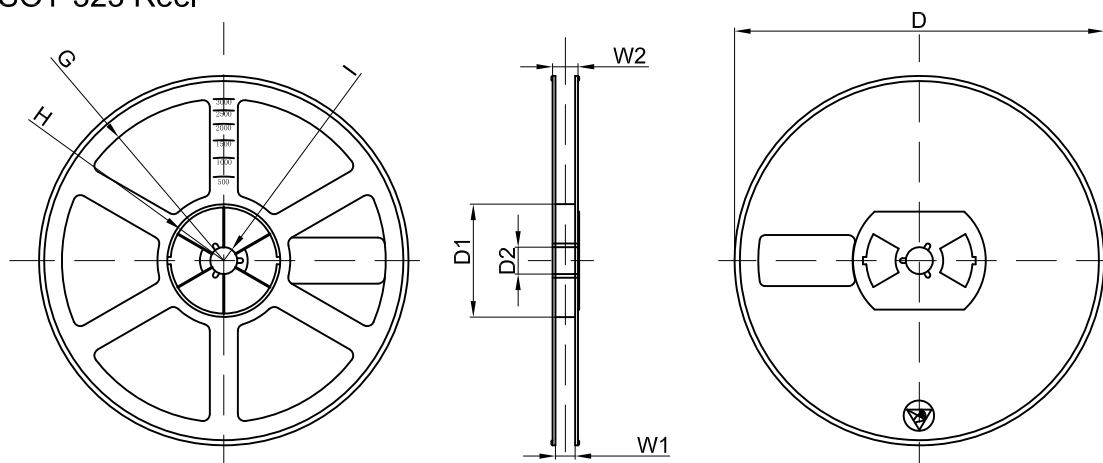
SOT-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |  |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|--|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |  |
| SOT-323                      | 2.25 | 2.55 | 1.19 | Ø1.55 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |  |

### SOT-323 Tape Leader and Trailer



### SOT-323 Reel



| Dimensions are in millimeter |         |       |       |        |        |       |      |       |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option                  | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
| 7"Dia                        | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL     | Reel Size | Box        | Box Size(mm) | Carton      | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch    | 45,000 pcs | 203×203×195  | 180,000 pcs | 438×438×220     |          |