



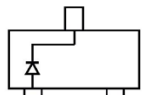
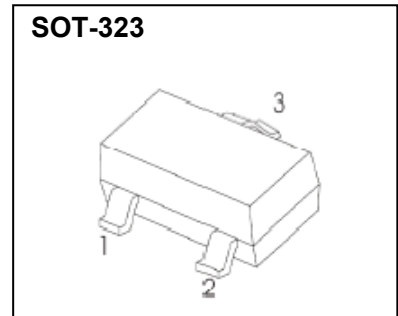
## SOT-323 Plastic-Encapsulate Diodes

### BAT54W/AW/CW/SW

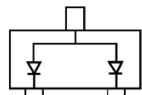
SCHOTTKY BARRIER DIODE

#### FEATURES

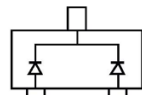
- Low Turn-on Voltage
- Extremely Fast Switching Speed
- PN Junction Guard Ring for Transient and ESD Protection



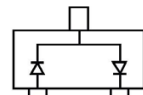
BAT54W Marking: KL5



BAT54AW Marking: KL6



BAT54CW Marking: KL7



BAT54SW Marking: KL8

#### MARKING:

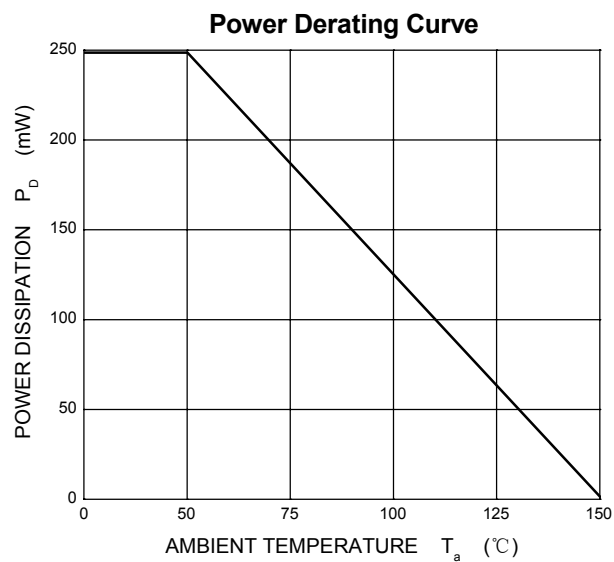
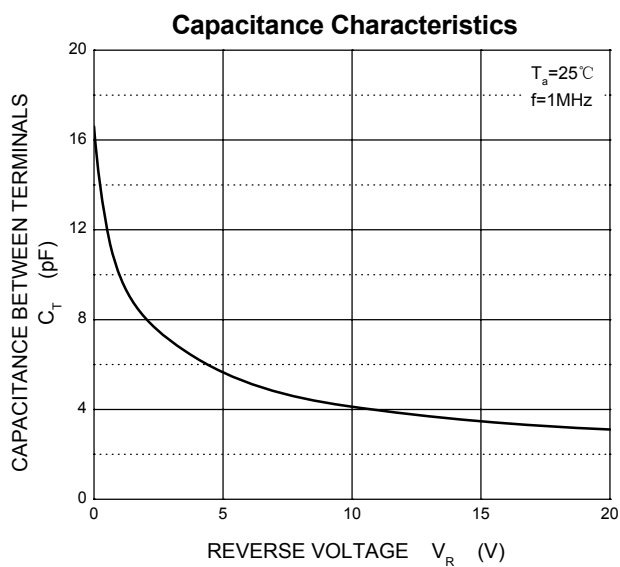
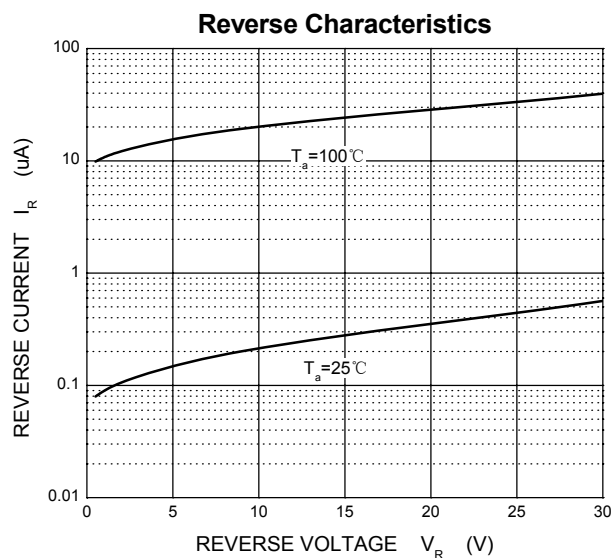
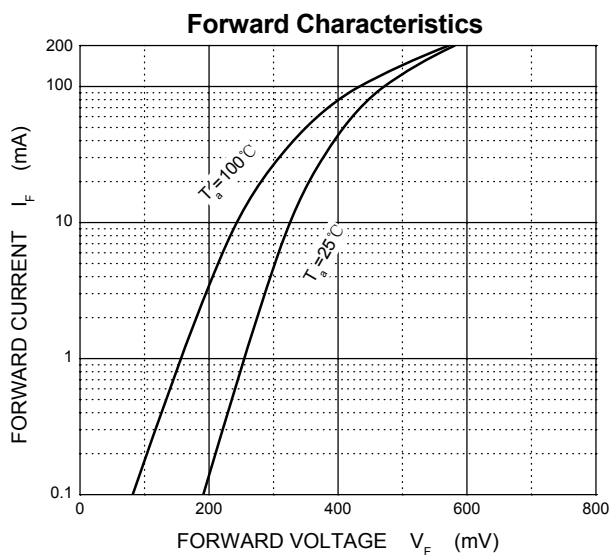
| BAT54W | BAT54AW | BAT54CW | BAT54SW |
|--------|---------|---------|---------|
|        |         |         |         |

#### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )

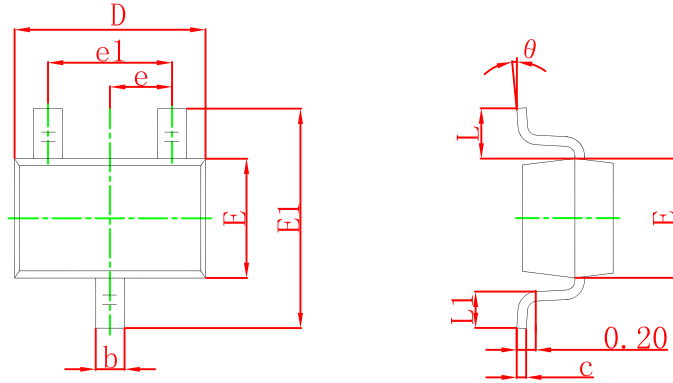
| Parameter   | Symbol          | Value    | Unit                      |
|---|-----------------|----------|---------------------------|
| Peak Repetitive Reverse Voltage                                       | $V_{RRM}$       | 30       | V                         |
| Working Peak Reverse Voltage  | $V_{RWM}$       |          |                           |
| DC Blocking Voltage   | $V_R$           |          |                           |
| Forward Continuous Current  | $I_{FM}$        | 200      | mA                        |
| Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$          | $I_{FSM}$       | 600      | mA                        |
| Repetitive Peak Forward Current @ $t \leq 1\text{s}, \delta \leq 0.5$ | $I_{FRM}$       | 300      | mA                        |
| Power Dissipation   | $P_D$           | 250      | mW                        |
| Thermal Resistance from Junction to Ambient                           | $R_{\theta JA}$ | 500      | $^\circ\text{C}/\text{W}$ |
| Junction Temperature  | $T_j$           | 150      | $^\circ\text{C}$          |
| Storage Temperature   | $T_{stg}$       | -55~+150 | $^\circ\text{C}$          |

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

| Parameter             | Symbol     | Test conditions   | Min | Typ | Max  | Unit          |
|-----------------------|------------|---|-----|-----|------|---------------|
| Reverse voltage       | $V_{(BR)}$ | $I_R=100\mu\text{A}$  | 30  |     |      | V             |
| Reverse current       | $I_R$      | $V_R=25\text{V}$  |     |     | 0.50 | $\mu\text{A}$ |
| Forward voltage       | $V_F$      | $I_{F1}=0.1\text{mA}$   |     |     | 0.24 | V             |
|                       |            | $I_{F2}=1\text{mA}$   |     |     | 0.32 | V             |
|                       |            | $I_{F3}=10\text{mA}$  |     |     | 0.40 | V             |
|                       |            | $I_{F4}=30\text{mA}$  |     |     | 0.50 | V             |
|                       |            | $I_{F5}=100\text{mA}$   |     |     | 1    | V             |
| Diode capacitance     | $C_D$      | $V_R=1\text{V}, f=1\text{MHz}$                                  |     |     | 10   | pF            |
| Reverse recovery time | $t_{rr}$   | $I_F=I_R=10\text{mA}$<br>$I_{rr}=0.1 \times I_R, R_L=100\Omega$ |     |     | 5    | ns            |

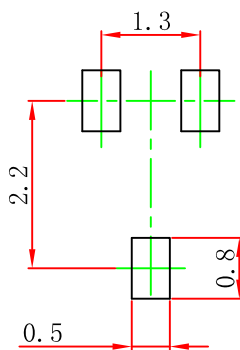


## SOT-323 Package Outline Dimensions



| 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 |
| theta  | 0°                        | 8°    | 0°                   | 8°    |

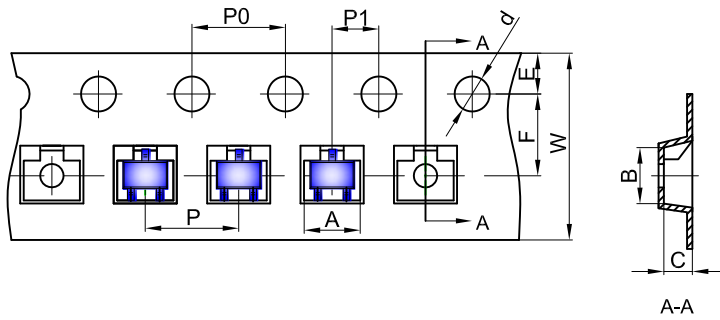
## SOT-323 Suggested Pad Layout



- 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

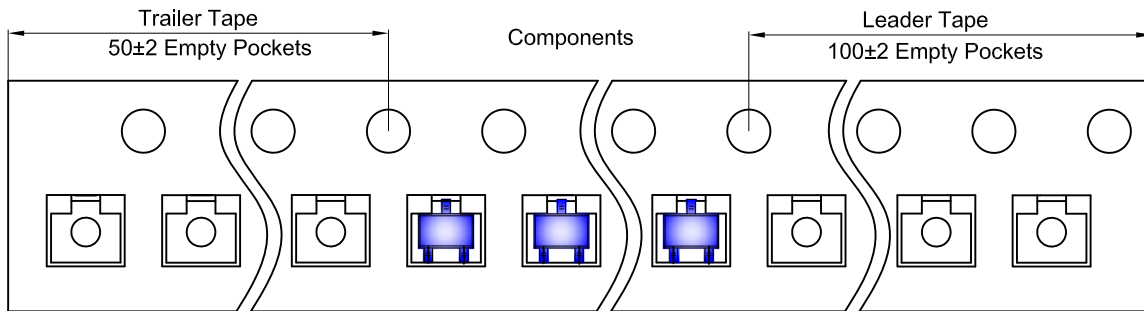
## SOT-323 Embossed Carrier Tape



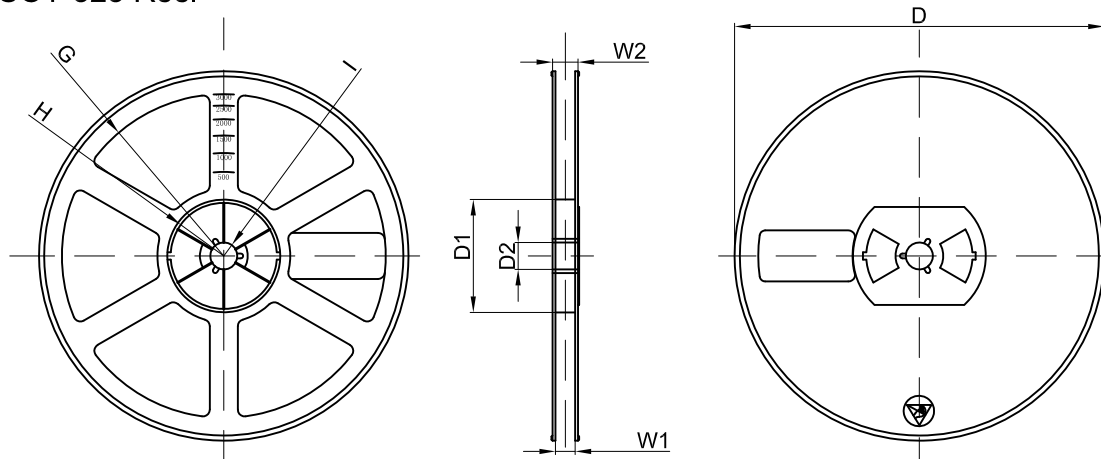
**Packaging Description:**  
 SOT-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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     |          |