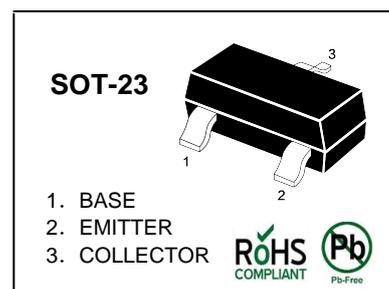


### PNP Silicon Epitaxial Planar Transistor

For switching and general purpose applications.

The transistor is subdivided into three groups P, Q and R, according to its DC current gain.



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

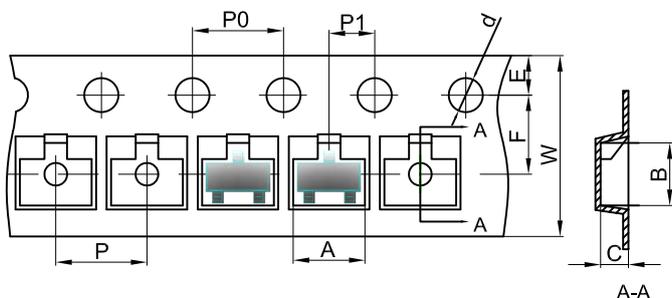
| Parameter                 | Symbol     | Value       | Unit             |
|---------------------------|------------|-------------|------------------|
| Collector Base Voltage    | $-V_{CBO}$ | 40          | V                |
| Collector Emitter Voltage | $-V_{CEO}$ | 32          | V                |
| Emitter Base Voltage      | $-V_{EBO}$ | 5           | V                |
| Collector Current         | $-I_C$     | 500         | mA               |
| Power Dissipation         | $P_{tot}$  | 200         | mW               |
| Junction Temperature      | $T_j$      | 150         | $^\circ\text{C}$ |
| Storage Temperature Range | $T_s$      | -55 to +150 | $^\circ\text{C}$ |

### Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

| Parameter   | Symbol         | Min.     | Typ. | Max. | Unit          |
|---|----------------|----------|------|------|---------------|
| DC Current Gain<br>at $-V_{CE}=3\text{V}$ , $-I_C=100\text{mA}$<br>Current Gain Group   | P              | 82       | -    | 180  | -             |
|   | Q              | 120      | -    | 270  | -             |
|   | R              | 180      | -    | 390  | -             |
|   |                | $h_{FE}$ |      |      |               |
| Collector-base breakdown voltage<br>at $-I_C=100\mu\text{A}$                            | $-V_{(BR)CBO}$ | 40       | -    | -    | V             |
| Collector-emitter breakdown voltage<br>at $-I_C=1\text{mA}$                             | $-V_{(BR)CEO}$ | 32       | -    | -    | V             |
| Emitter-base breakdown voltage<br>at $-I_C=100\mu\text{A}$                              | $-V_{(BR)EBO}$ | 5        | -    | -    | V             |
| Collector Cutoff Current<br>at $-V_{CB}=20\text{V}$                                     | $-I_{CBO}$     | -        | -    | 1    | $\mu\text{A}$ |
| Emitter Cutoff Current<br>at $-V_{EB}=4\text{V}$  | $-I_{EBO}$     | -        | -    | 1    | $\mu\text{A}$ |
| Collector Saturation Voltage<br>at $-I_C=300\text{mA}$ , $-I_B=30\text{mA}$             | $-V_{CE(sat)}$ | -        | -    | 0.6  | V             |
| Transition Frequency<br>at $-V_{CE}=5\text{V}$ , $-I_E=20\text{mA}$ , $f=100\text{MHz}$ | $f_T$          | -        | 200  | -    | MHz           |
| Collector Output Capacitance<br>at $-V_{CB}=10\text{V}$ , $f=1\text{MHz}$               | Cob            | -        | 7    | -    | pF            |

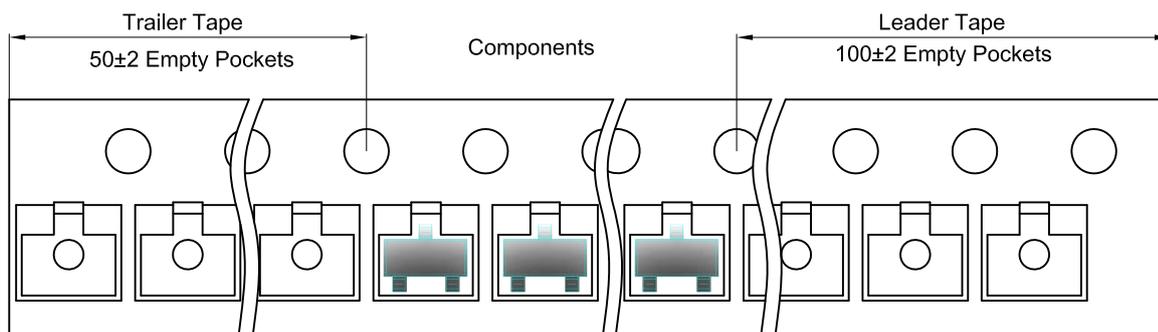
## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

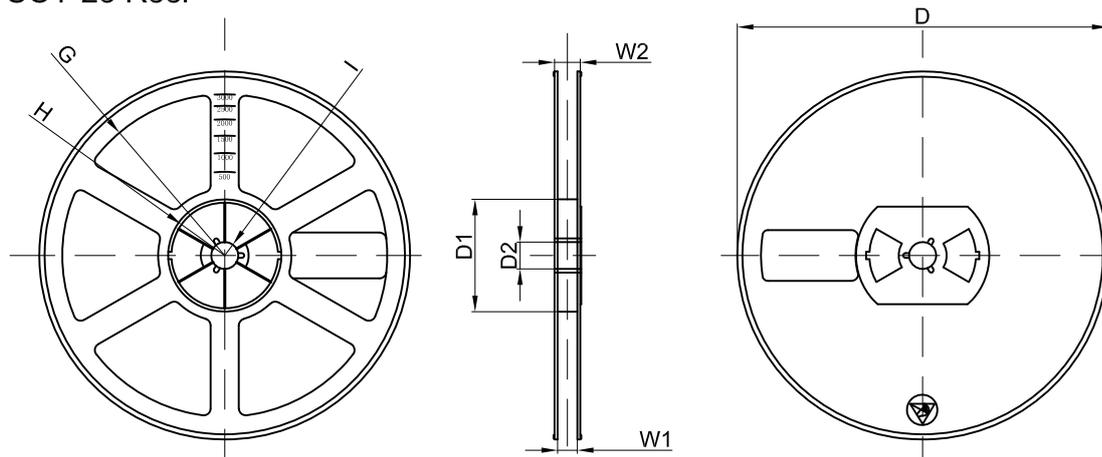


| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOT-23                       | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-23 Tape Leader and Trailer

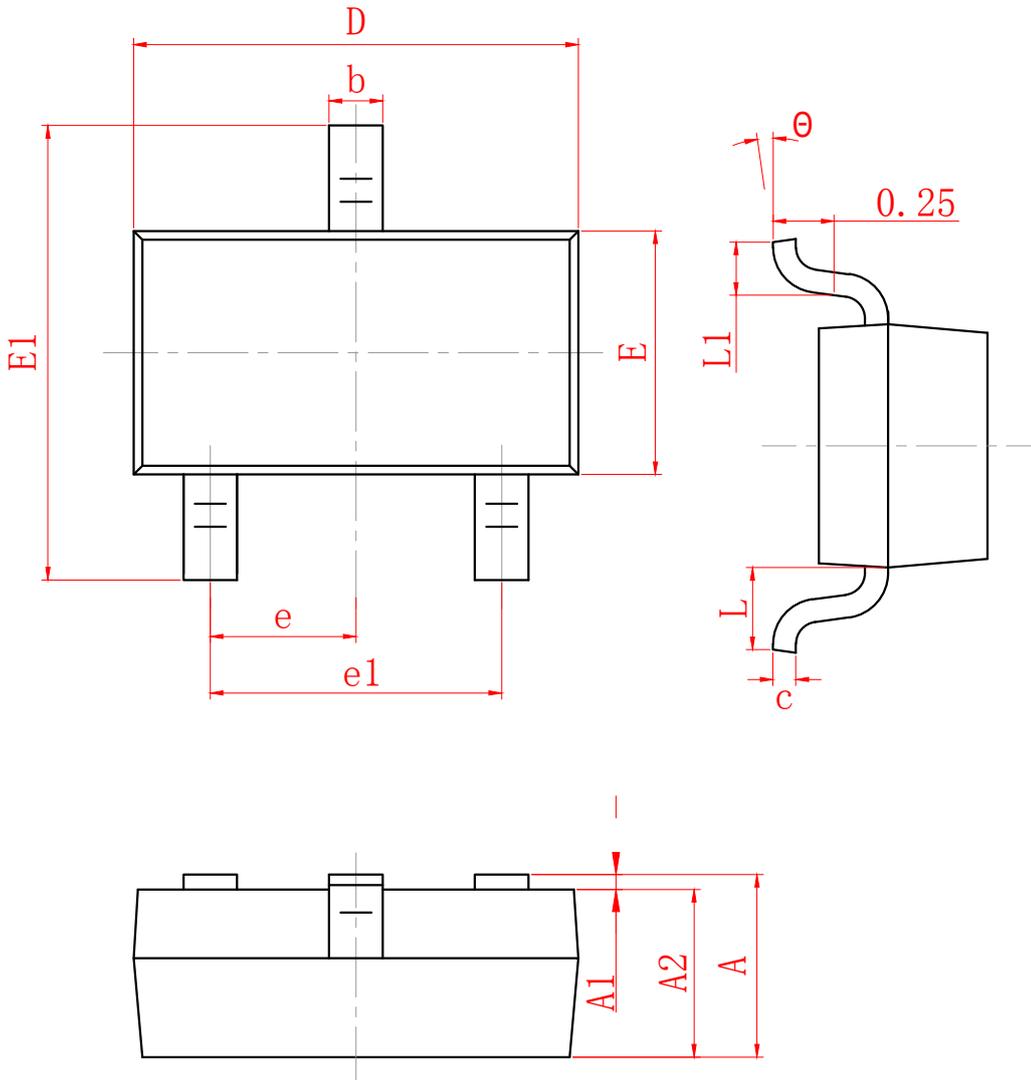


### SOT-23 Reel



| 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     |          |



| SYMBOL   | MILLIMETER |       |
|----------|------------|-------|
|          | MIN        | MAX   |
| A        | 0.900      | 1.150 |
| A1       | 0.000      | 0.100 |
| A2       | 0.900      | 1.050 |
| b        | 0.300      | 0.500 |
| c        | 0.080      | 0.150 |
| D        | 2.800      | 3.000 |
| E        | 1.200      | 1.400 |
| E1       | 2.250      | 2.550 |
| e        | 0.950 TYP  |       |
| e1       | 1.800      | 2.000 |
| L        | 0.550 REF  |       |
| L1       | 0.300      | 0.500 |
| $\theta$ | 0°         | 8°    |

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