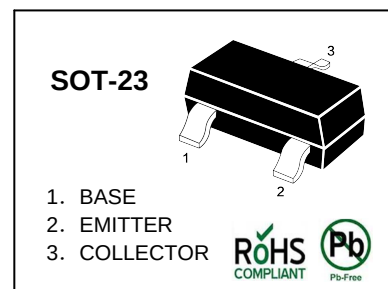


### NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

#### FEATURES

- 400 Volt  $V_{CEO}$
- COMPLEMENTARY TYPE - FMMT558
- Marking :458



#### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                  | SYMBOL         | VALUE       | UNIT        |
|--------------------------------------------|----------------|-------------|-------------|
| Collector-Base Voltage                     | $V_{CBO}$      | 400         | V           |
| Collector-Emitter Voltage                  | $V_{CEO}$      | 400         | V           |
| Emitter-Base Voltage                       | $V_{EBO}$      | 5           | V           |
| Continuous Collector Current               | $I_C$          | 225         | mA          |
| Peak Pulse Current                         | $I_{CM}$       | 1           | A           |
| Base Current                               | $I_B$          | 200         | mA          |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | $P_{tot}$      | 500         | mW          |
| Operating and Storage Temperature Range    | $T_j: T_{stg}$ | -55 to +150 | $^{\circ}C$ |

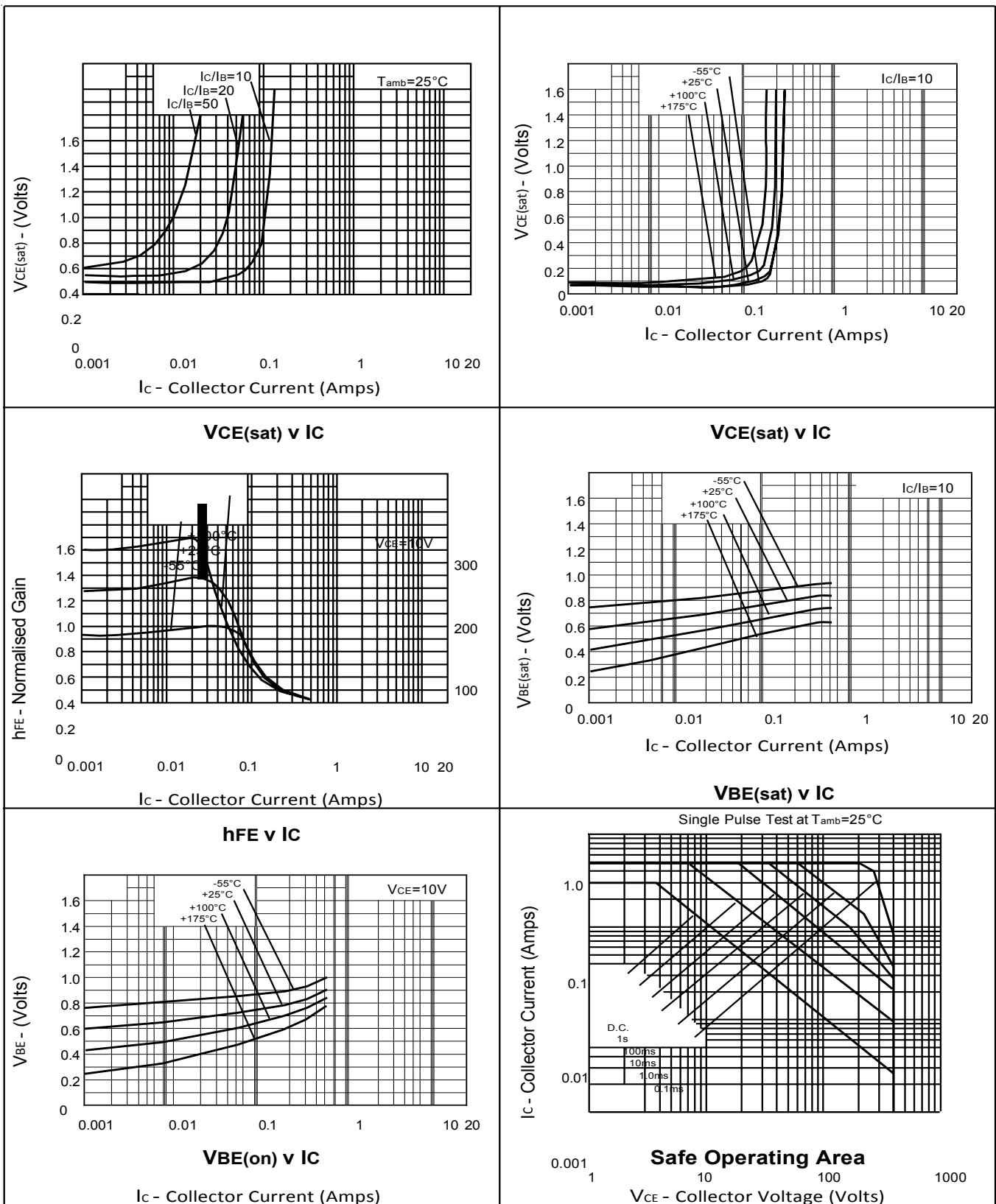
#### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ ).

| PARAMETER                             | SYMBOL                | MIN.                        | MAX.       | UNIT     | CONDITIONS.                                                                    |
|---------------------------------------|-----------------------|-----------------------------|------------|----------|--------------------------------------------------------------------------------|
| Collector-Base Breakdown Voltage      | $V_{(BR)CBO}$         | 400                         |            | V        | $I_C=100\mu A$                                                                 |
| Collector-Emitter Breakdown Voltage   | $V_{CEO(sus)}$        | 400                         |            | V        | $I_C=10mA^*$                                                                   |
| Emitter-Base Breakdown Voltage        | $V_{(BR)EBO}$         | 5                           |            | V        | $I_E=100\mu A$                                                                 |
| Collector Cut-Off Current             | $I_{CBO}$             |                             | 100        | nA       | $V_{CB}=320V$                                                                  |
| Collector Cut-Off Current             | $I_{CES}$             |                             | 100        | nA       | $V_{CE}=320V$                                                                  |
| Emitter Cut-Off Current               | $I_{EBO}$             |                             | 100        | nA       | $V_{EB}=4V$                                                                    |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$         |                             | 0.2<br>0.5 | V        | $I_C=20mA, I_B=2mA^*$<br>$I_C=50mA, I_B=6mA^*$                                 |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$         |                             | 0.9        | V        | $I_C=50mA, I_B=5mA^*$                                                          |
| Base-Emitter Turn On Voltage          | $V_{BE(on)}$          |                             | 0.9        | V        | $I_C=50mA, V_{CE}=10V^*$                                                       |
| Static Forward Current Transfer Ratio | $h_{FE}$              | 100<br>100<br>15            | 300        |          | $I_C=1mA, V_{CE}=10V$<br>$I_C=50mA, V_{CE}=10V^*$<br>$I_C=100mA, V_{CE}=10V^*$ |
| Transition Frequency                  | $f_T$                 | 50                          |            | MHz      | $I_C=10mA, V_{CE}=20V$<br>$f=20MHz$                                            |
| Output Capacitance                    | $C_{obo}$             |                             | 5          | pF       | $V_{CB}=20V, f=1MHz$                                                           |
| Switching times                       | $t_{on}$<br>$t_{off}$ | 135 Typical<br>2260 Typical |            | ns<br>ns | $I_C=50mA, V_{CC}=100V$<br>$I_{B1}=5mA, I_{B2}=-10mA$                          |

\*Measured under pulsed conditions.

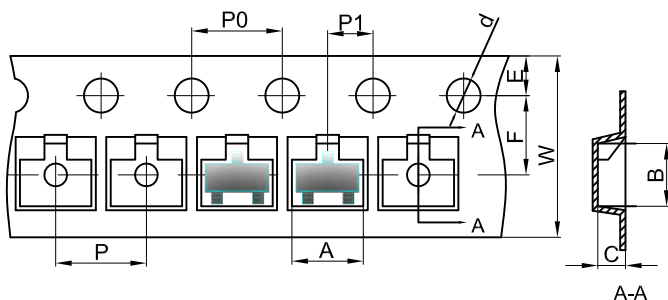
Spice parameter data is available upon request for this device

### Typical Characteristics



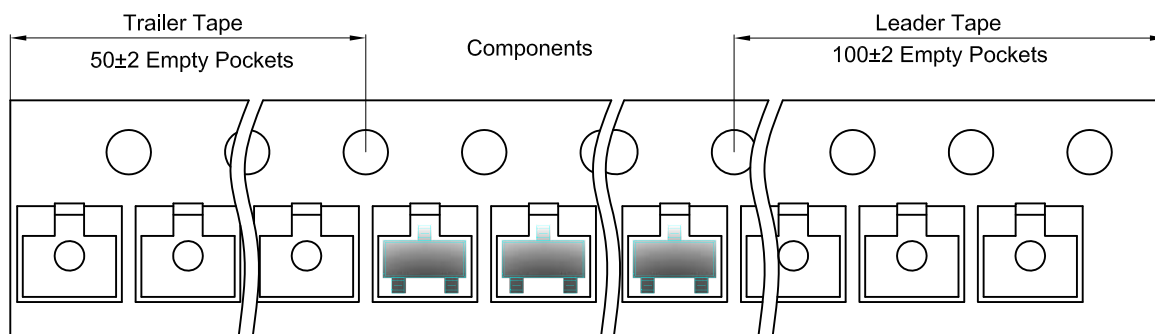
## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

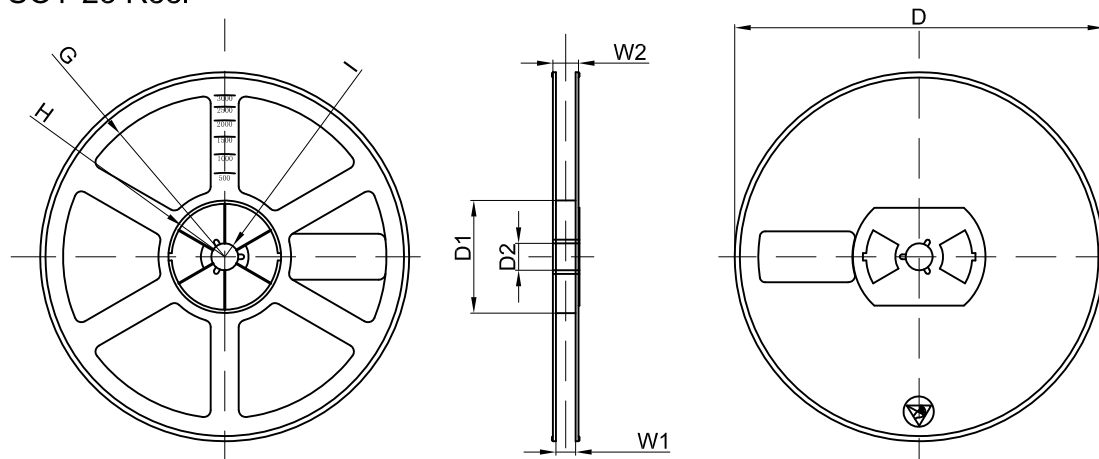


| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | 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

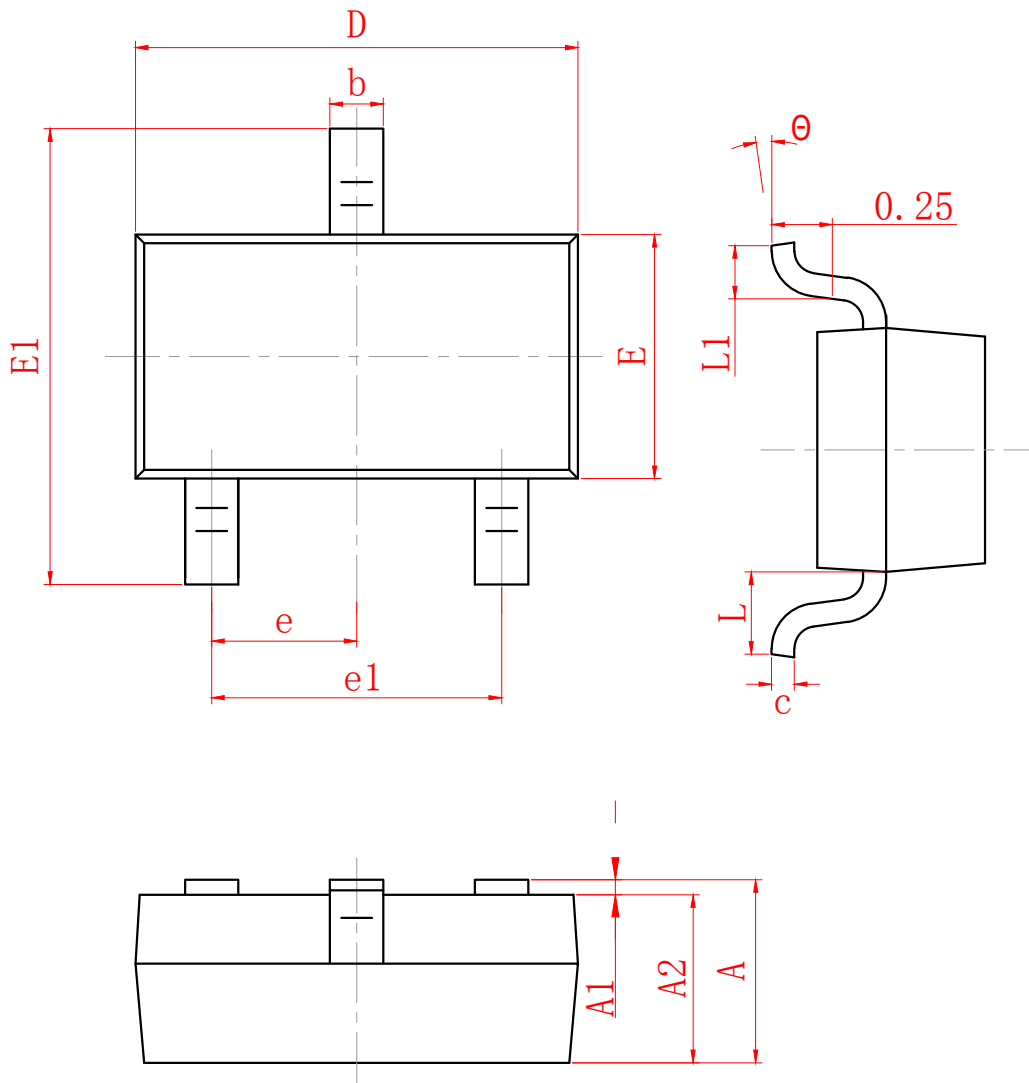


### SOT-23 Reel



| 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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