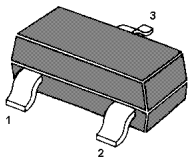
# PNP Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into five groups R, O, Y, P and L, according to its DC current gain. As complementary type the NPN transistor MMBTSC945 is recommended.




1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

## Absolute Maximum Ratings ($T_a$ = 25 °C)

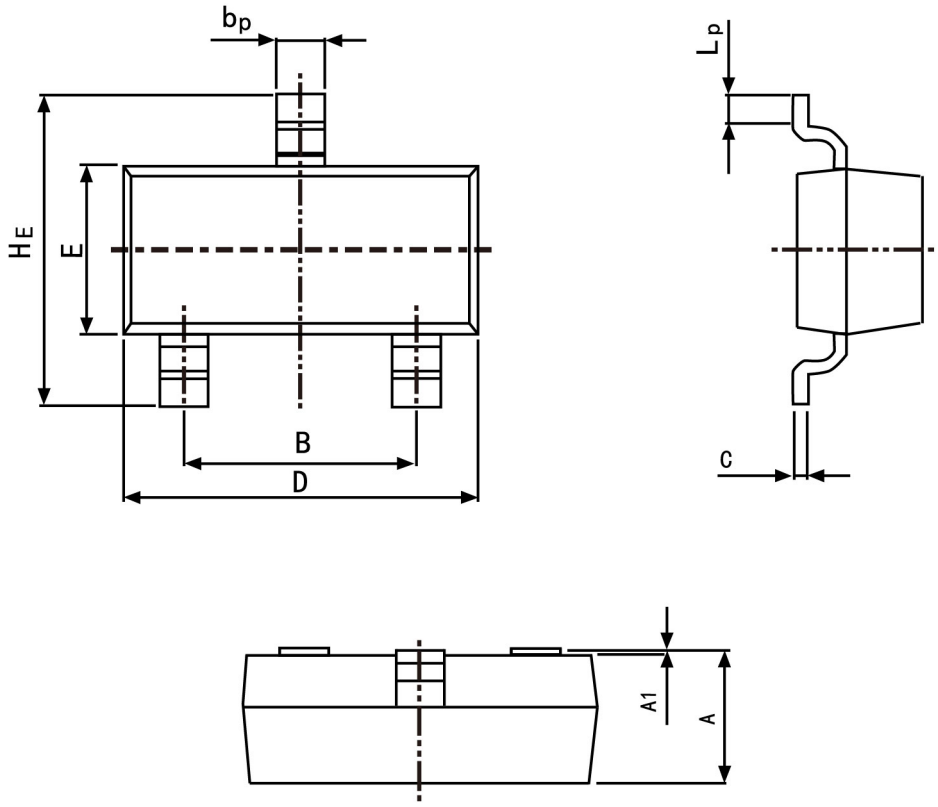
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $-V_{CBO}$ | 60 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 50 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 5 | V |
| Collector Current | $-I_C$ | 150 | mA |
| Power Dissipation | $P_{tot}$ | 200 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_S$ | -55 to +150 | °C |

## Characteristics at $T_{amb}$=25 °C

| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| DC Current Gain at $-V_{CE}$=6V, $-I_C$=1mA | | | | | | |
| Current Gain Group | R | $h_{FE}$ | 40 | - | 80 | - |
| | O | $h_{FE}$ | 70 | - | 140 | - |
| | Y | $h_{FE}$ | 120 | - | 240 | - |
| | P | $h_{FE}$ | 200 | - | 400 | - |
| | L | $h_{FE}$ | 350 | - | 700 | - |
| Collector Base Breakdown Voltage at $-I_C$=100μA | | $-V_{(BR)CBO}$ | 60 | - | - | V |
| Collector Emitter Breakdown Voltage at $-I_C$=10mA | | $-V_{(BR)CEO}$ | 50 | - | - | V |
| Emitter Base Breakdown Voltage at $-I_E$=10μA | | $-V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Cutoff Current at $-V_{CB}$=60V | | $-I_{CBO}$ | - | - | 0.1 | μA |
| Emitter Cutoff Current at $-V_{EB}$=5V | | $-I_{EBO}$ | - | - | 0.1 | μA |
| Collector Saturation Voltage at $-I_C$=100mA, $-I_B$=10mA | | $-V_{CE(sat)}$ | - | - | 0.3 | V |
| Base Emitter Voltage at $-V_{CE}$=6V, $-I_C$=1mA | | $-V_{BE(on)}$ | 0.5 | - | 0.8 | V |
| Gain Bandwidth Product at $-V_{CE}$=6V, $-I_C$=10mA | | $f_T$ | 50 | 180 | - | MHz |
| Output Capacitance at $-V_{CB}$=10V, f=1MHz | | $C_{OB}$ | - | 2.8 | - | pF |
| Noise Figure at $-V_{CE}$=6V, $-I_C$=0.3mA, f=100Hz, $R_S$=10KΩ | | F | - | 6 | 20 | dB |

## PACKAGE OUTLINE

**Plastic surface mounted package; 3 leads** **SOT-23**




**SOT-2**

| Symbol | Dimension in Millimeters | |
|---|---|---|
| | Min | Max |
| A | 0.95 | 1.40 |
| B | 1.78 | 2.04 |
| bp | 0.35 | 0.50 |
| C | 0.08 | 0.19 |
| D | 2.70 | 3.10 |
| E | 1.20 | 1.65 |
| HE | 2.20 | 3.00 |
| A1 | 0.100 | 0.013 |
| Lp | 0.20 | 0.50 |

ses only.