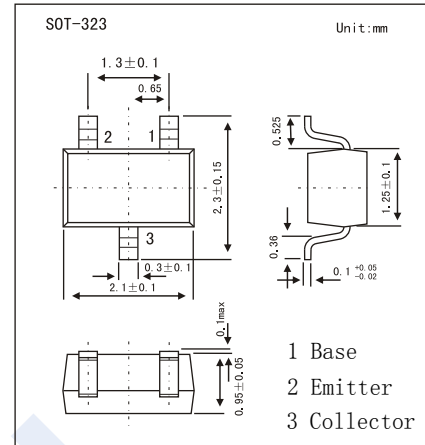


## PNP Transistors

## 2SB1219

## ■ Features

- Large collector current  $I_c$
- Complementary to 2SD1820

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

| Parameter                      | Symbol    | Rating     | Unit             |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage       | $V_{CBO}$ | -30        | V                |
| Collector - Emitter Voltage    | $V_{CEO}$ | -25        |                  |
| Emitter - Base Voltage         | $V_{EBO}$ | -5         |                  |
| Collector Current - Continuous | $I_c$     | -0.5       | A                |
| Collector Current - Pulse      | $I_{CP}$  | -1         |                  |
| Collector Power Dissipation    | $P_C$     | 150        | mW               |
| Junction Temperature           | $T_J$     | 150        | $^\circ\text{C}$ |
| Storage Temperature range      | $T_{stg}$ | -55 to 150 |                  |

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

| Parameter                            | Symbol        | Test Conditions                                                 | Min | Typ   | Max  | Unit          |
|--------------------------------------|---------------|-----------------------------------------------------------------|-----|-------|------|---------------|
| Collector- base breakdown voltage    | $V_{CBO}$     | $I_C = -100 \mu\text{A}, I_E = 0$                               | -30 |       |      | V             |
| Collector- emitter breakdown voltage | $V_{CEO}$     | $I_C = -2 \text{ mA}, I_B = 0$                                  | -25 |       |      |               |
| Emitter - base breakdown voltage     | $V_{EBO}$     | $I_E = -100 \mu\text{A}, I_C = 0$                               | -5  |       |      |               |
| Collector-base cut-off current       | $I_{CBO}$     | $V_{CB} = -20\text{V}, I_E = 0$                                 |     |       | -0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4\text{V}, I_C = 0$                                  |     |       | -0.1 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$                   |     | -0.35 | -0.6 | V             |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$                   |     | -1.1  | -1.5 |               |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -10\text{V}, I_C = -150 \text{ mA}$                   | 85  |       | 340  |               |
|                                      |               | $V_{CE} = -10\text{V}, I_C = -500 \text{ mA}$                   | 40  |       |      |               |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$                |     | 6     | 15   | pF            |
| Transition frequency                 | $f_T$         | $V_{CE} = -10\text{V}, I_C = -50 \text{ mA}, f = 200\text{MHz}$ |     | 200   |      | MHz           |

■ Classification of  $h_{FE}(1)$ 

| Type    | 2SB1219-Q | 2SB1219-R | 2SB1219-S | 2SB1219 |
|---------|-----------|-----------|-----------|---------|
| Range   | 85-170    | 120-240   | 170-340   | 85-340  |
| Marking | CQ        | CR        | CS        | C       |

## PNP Transistors

## 2SB1219

## ■ Typical Characteristics

