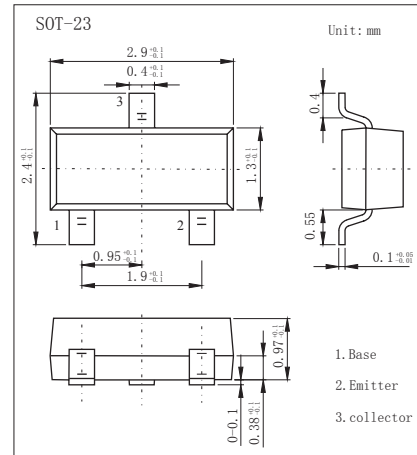


## PNP Transistors

### MMBTA92

#### ■ Features

- High voltage transistor
- Low collector-emitter saturation voltage
- Complementary to MMBTA42 (NPN)



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

| Parameter                              | Symbol          | Rating     | Unit                      |
|----------------------------------------|-----------------|------------|---------------------------|
| Collector - Base Voltage               | $V_{CB0}$       | -300       | V                         |
| Collector - Emitter Voltage            | $V_{CE0}$       | -300       |                           |
| Emitter - Base Voltage                 | $V_{EB0}$       | -5         |                           |
| Collector Current - Continuous         | $I_C$           | -500       | mA                        |
| Collector Power Dissipation            | $P_C$           | 350        | mW                        |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 417        | $^\circ\text{C}/\text{W}$ |
| 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    | $V_{CB0}$     | $I_C = -100 \mu\text{A}$ , $I_E = 0$                                     | -300 |     |       | V             |
| Collector- emitter breakdown voltage | $V_{CE0}$     | $I_C = -1 \text{ mA}$ , $I_B = 0$                                        | -300 |     |       |               |
| Emitter - base breakdown voltage     | $V_{EB0}$     | $I_E = -100 \mu\text{A}$ , $I_C = 0$                                     | -5   |     |       |               |
| Collector-base cut-off current       | $I_{CB0}$     | $V_{CB} = -200 \text{ V}$ , $I_E = 0$                                    |      |     | -0.25 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EB0}$     | $V_{EB} = -5 \text{ V}$ , $I_C = 0$                                      |      |     | -0.1  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -20 \text{ mA}$ , $I_B = -2 \text{ mA}$                           |      |     | -0.2  | V             |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_C = -20 \text{ mA}$ , $I_B = -2 \text{ mA}$                           |      |     | -0.9  |               |
| DC current gain                      | $h_{fe} (1)$  | $V_{CE} = -10 \text{ V}$ , $I_C = -1 \text{ mA}$                         | 60   |     |       |               |
|                                      | $h_{fe} (2)$  | $V_{CE} = -10 \text{ V}$ , $I_C = -10 \text{ mA}$                        | 100  |     | 300   |               |
|                                      | $h_{fe} (3)$  | $V_{CE} = -10 \text{ V}$ , $I_C = -30 \text{ mA}$                        | 60   |     |       |               |
| Transition frequency                 | $f_T$         | $V_{CE} = -20 \text{ V}$ , $I_C = -10 \text{ mA}$ , $f = 30 \text{ MHz}$ | 50   |     |       | MHz           |

#### ■ Classification of $h_{fe}(2)$

| Type    | MMBTA92 | MMBTA92-L |
|---------|---------|-----------|
| Range   | 100-300 | 100-200   |
| Marking | 2D      |           |

# PNP Transistors

## MMBTA92

### ■ Typical Characteristics

