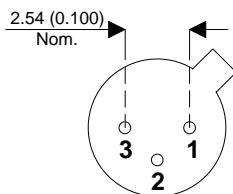
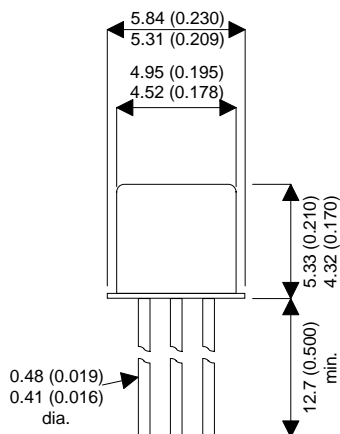


MECHANICAL DATA

Dimensions in mm (inches)



TO18

Underside View

PIN1 – EMITTER PIN 2 – BASE PIN 3 – COLLECTOR

PNP SILICON TRANSISTOR

FEATURES

- SILICON PNP TRANSISTOR
- HIGH SPEED, LOW SATURATION SWITCH

APPLICATIONS:

GENERAL PURPOSE SWITCHING APPLICATIONS

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

| | | |
|----------------|---|------------------------------|
| V_{CBO} | Collector – Base Voltage | -12V |
| V_{CEO} | Collector – Emitter Voltage | -12V |
| V_{EBO} | Emitter – Base Voltage | -4V |
| I_C | Collector Current | 200mA |
| P_D | Total Device Dissipation @ $T_A = 25^\circ\text{C}$ | 360mW |
| | Derate above 25°C | 2.06mW / $^\circ\text{C}$ |
| P_D | Total Device Dissipation @ $T_C = 25^\circ\text{C}$ | 1.2W |
| | Derate above 25°C | 6.85mW / $^\circ\text{C}$ |
| T_{STG}, T_J | Operating and Storage Temperature Range | -65 to +200 $^\circ\text{C}$ |

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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Document Number 4081

Issue 1

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|--|---|-------|------|-------|---------------|
| $BV_{CEO(SUS)}$ Collector – Base Breakdown Voltage | $I_C = -10\text{mA}$ $I_B = 0$ | -12 | | | V |
| BV_{CES} Collector – Emitter Breakdown Voltage | $I_C = -10\mu\text{A}$ $V_{BE} = 0$ | -12 | | | |
| BV_{CBO} Collector – Base Breakdown Voltage | $I_C = -10\mu\text{A}$ $I_E = 0$ | -12 | | | |
| BV_{EBO} Emitter Base Breakdown Voltage | $I_E = 100\mu\text{A}$ $I_C = 0$ | -4 | | | |
| I_{CBO} Collector Cut-off Current | $V_{CB} = -6\text{V}$ $T_{amb} = 125^\circ\text{C}$ | | | -10 | μA |
| I_{CES} Collector Cut-off Current | $V_{CE} = -6\text{V}$ $V_{BE} = 0$ | | | -80 | nA |
| I_B Base Current | $V_{CE} = -6\text{V}$ $V_{BE} = 0$ | | | -80 | |
| $V_{CE(sat)}$ Collector – Emitter Saturation Voltage | $I_C = -10\text{mA}$ $I_B = -1\text{mA}$ | | | -0.15 | V |
| | $I_C = -30\text{mA}$ $I_B = -3\text{mA}$ | | | -0.2 | |
| | $I_C = -100\text{mA}$ $I_B = -10\text{mA}$ | | | -0.5 | |
| $V_{BE(sat)}$ Base – Emitter On Voltage | $I_C = -10\text{mA}$ $I_B = -1\text{mA}$ | -0.78 | | -0.98 | V |
| | $I_C = -30\text{mA}$ $I_B = -3\text{mA}$ | -0.85 | | -1.2 | |
| | $I_C = -100\text{mA}$ $I_B = -10\text{mA}$ | | | -1.7 | |
| h_{FE} DC Current Gain | $I_C = -10\text{mA}$ $V_{CE} = -0.3\text{V}$ | 30 | | | — |
| | $I_C = -30\text{mA}$ $V_{CE} = -0.5\text{V}$ | 40 | | 150 | |
| | $I_C = -30\text{mA}$ $V_{CE} = -0.5\text{V}$ $T_{amb} = -55^\circ\text{C}$ | 17 | | | |
| | $I_C = -30\text{mA}$ $V_{CE} = -0.5\text{V}$ | 25 | | | |
| f_T Current Gain Bandwidth Product | $V_{CE} = -10\text{V}$ $f = 100\text{MHz}$ $I_C = -30\text{mA}$ | 400 | | | MHz |
| C_{ob} Output Capacitance | $V_{CB} = -5\text{V}$ $I_E = 0$ $f = 140\text{KHz}$ | | | 6 | pF |
| C_{ib} Input Capacitance | $V_{BE} = -0.5\text{V}$ $I_C = 0$ $f = 140\text{KHz}$ | | | 6 | |
| t_{on} Turn on Time | $V_{CC} = -2\text{V}$ $I_C = -30\text{mA}$ | | | 60 | ns |
| t_{off} Turn off Time | $I_{B1} = - I_{B2} = 1.5\text{mA}$ | | | 90 | |

* Pulse Test: $t_p \leq 300\mu\text{s}$, $\delta \leq 1\%$.