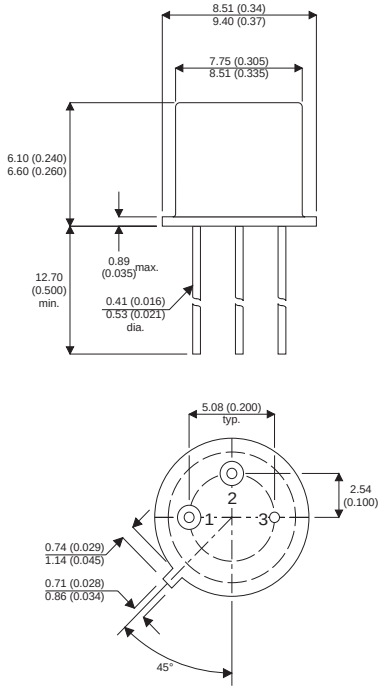
# 2N3720

## MECHANICAL DATA

Dimensions in mm (inches)







**TO–39 (TO205AD)**

**Underside View**

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

# PNP SILICON TRANSISTOR

## FEATURES

- **High Current Gain Bandwidth Product**
- **Hermetic TO39 Package**
- **Full Screening Options Available**

## ABSOLUTE MAXIMUM RATINGS ($T_{case}$ = 25°C unless otherwise stated)

| | | |
|---|---|---|
| $V_{CBO}$ | Collector – Base Voltage | -60V |
| $V_{CEO}$ | Collector – Emitter Voltage ($I_B$ = 0) | -60V |
| $V_{EBO}$ | Emitter – Base Voltage ($I_B$ = 0) | -4V |
| $I_C$ | Collector Current | -1A |
| $I_{C(cont)}$ | Collector Current Continuous | -3A |
| $P_D$ | Total Device Dissipation $T_A$ = 25 °C | 1W |
| | Derate above 25°C | 5.71mW / °C |
| $P_D$ | Total Device Dissipation $T_C$ = 25 °C | 6W |
| | Derate above 25°C | 34.3mW / °C |
| $T_{stg}$ | Storage Temperature | –65 to 200°C |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient | 175°C/W |
| $R_{\theta JC}$ | Thermal Resistance Junction to Case | 29°C/W |

**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.**

**Semelab plc.** Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Document Number 6018
Issue 1

SEME LAB

# 2N3720

## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25°C unless otherwise stated)

| Parameter | | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector – Emitter Breakdown Voltage | $I_C$ = -20mA $I_B$ = 0 | -60 | | | V |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = -60V $I_E$ = 0 | | | -10 | µA |
| $I_{CEX}$ | Collector Cut-off Current | $V_{CE}$ = -60V $V_{BE(off)}$=-2V | | | -10 | µA |
| | | $V_{CE}$ = -60V $V_{BE(off)}$=-2V $T_{amb}$ = 150°C | | | -1.0 | mA |
| $I_{EBO}$ | Emitter Cut-off Current | $V_{BE}$ = -4V $I_C$ = 0 | | | -1.0 | mA |
| $V_{CE(sat)}$ | Collector – Emitter Saturation Voltage | $I_C$ =-1A, $I_B$ =-100mA | | | -0.75 | V |
| | | $I_C$ =-3A, $I_B$ =-300mA | | | -1.5 | |
| $V_{BE(sat)}$ | Base – Emitter Saturation Voltage | $I_C$ =-1A, $I_B$ =-100mA | | | -1.5 | V |
| | | $I_C$ =-3A, $I_B$ =-300mA | | | -2.3 | |
| hFE | DC Current Gain | $I_C$ =-500mA, $V_{CE}$ =-1.5V | 20 | | | — |
| | | $I_C$ =-1A, $V_{CE}$ =-1.5V | 25 | | 180 | |
| | | $I_C$ =-1A, $V_{CE}$=-1.5V, $T_C$=-40°C | 15 | | | |

## DYNAMIC CHARACTERISTICS ($T_{case}$ = 25°C unless otherwise stated)

| Parameter | | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $f_T$ | Transition Frequency | $I_C$ =-500mA $V_{CE}$ = -10V f = 30MHz | 60 | | | MHz |
| $C_{obo}$ | Output Capacitance | $V_{CB}$ = -10V $I_E$ = 0 f = 0.1MHz | | | 120 | pF |
| $C_{ibo}$ | Input Capacitance | $V_{EB}$ = 0.5V $I_C$ = 0 f = 0.1MHz | | | 1000 | pF |
| $t_{on}$ | Turn on Time | $V_{CC}$=-12V,$V_{BE(off)}$ =0V,$I_C$ =1A,$I_{B1}$ =0.1A | | | 100 | ns |
| $t_{off}$ | Turn off Time | $V_{CC}$=-12V, $I_C$ =1A, $I_{B1}$ = $I_{B2}$=100mA | | | 400 | ns |

(1) Pulse test : Pulse Width < 300µs ,Duty Cycle < 2%

**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.**

**Semelab plc.** Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Document Number 6018
Issue 1