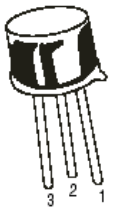
# General Purpose Transistor




**Pin Configuration**
1. Emitter
2. Base
3. Collector

## Features:

- PNP Silicon Planar RF Transistor
- Small Signal General Purpose Amplifier, Transistor

## Absolute Maximum Ratings:

**($T_a$ = 25°C unless otherwise specified)**

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | -80 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | | |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | |
| Collector Current | $I_{CM}$ | -1 | A |
| Power Dissipation at $T_a$ = 25°C<br>Derate above 25°C | $P_D$ | 800<br>4.6 | mW<br>mW/°C |
| Power Dissipation at $T_C$ = 25°C<br>Derate above 25°C | | 4<br>22.85 | W<br>mW/°C |
| Operating and Storage Temperature Range | $T_j$, $T_{stg}$ | -65 to +200 | °C |

## Electrical Characteristics:

**($T_a$ = +25°C unless otherwise specified)**

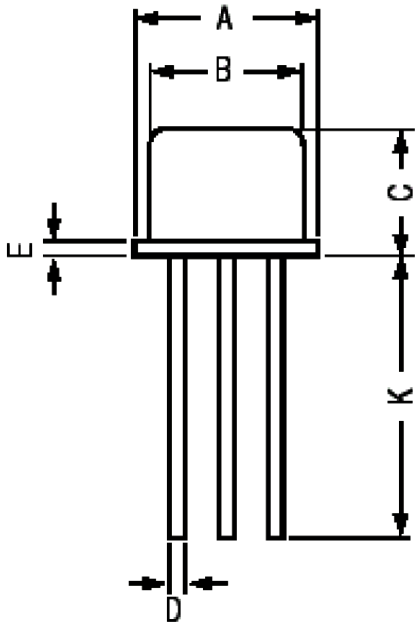
| Parameter | Symbol | Test Condition | Min. | Max. | Unit |
|---|---|---|---|---|---|
| Collector Emitter Breakdown Voltage | $BV_{CEO}$* | $I_C$ = 10mA, $I_B$ = 0 | -80 | - | V |
| Collector Base Breakdown Voltage | $BV_{CBO}$ | $I_C$ = 10µA, $I_E$ = 0 | | | |
| Emitter Base Breakdown Voltage | $BV_{EBO}$ | $I_E$ = 10µA, $I_C$ = 0 | -5 | | |
| Collector Leakage Current | $I_{CBO}$ | $V_{CB}$ = 60V, $I_E$ = 0 | - | 50 | nA |
| | | $V_{CB}$ = 60V, $T_A$ = 150ºC | | | µA |
| Emitter Leakage Current | $I_{EBO}$ | $V_{EB}$ = 5V, $I_C$ = 0 | - | 10 | µA |
| Collector Emitter Saturation Voltage | $V_{CE\ (Sat)}$* | $I_C$ = 150mA, $I_B$ = 15mA | | 0.15 | V |
| | | $I_C$ = 500mA, $I_B$ = 50mA | | 0.5 | |
| Base Emitter Saturation Voltage | $V_{BE(Sat)}$* | $I_C$ = 150mA, $I_B$ = 15mA | | 0.9 | |
| Base Emitter On Voltage | $V_{BE(on)}$* | $I_C$ = 500mA, $V_{CE}$ = 0.5V | | 1.1 | |
| DC Current Gain | $h_{FE}$* | $I_C$ = 100mA, $V_{CE}$ = 5V | 75 | 300 | - |
| | | $I_C$ = 100mA, $V_{CE}$ = 5V | 100 | | |
| | | $I_C$ = 100mA, $V_{CE}$ = 5V, $T_a$ = -55°C | 40 | | |
| | | $I_C$ = 1A, $V_{CE}$ = 5V | 25 | | |

**Small Signal Characteristics**

| | | | | | |
|---|---|---|---|---|---|
| Transition Frequency | $f_T$ | $I_C$ = 50mA, $V_{CE}$ = 10V, f = 100MHz | 150 | 500 | MHz |
| Output Capacitance | $C_{ob}$ | $V_{CB}$ = 10V, $I_E$ = 0, f = 1MHz | - | 20 | pF |
| Input Capacitance | $C_{ib}$ | $V_{BE}$ = 0.5V, $I_C$ = 0, f = 1MHz | | 110 | |
| Turn on Time | $t_{on}$ | $I_C$ = 500mA, $I_{B1}$ = 50mA | | 100 | ns |
| Storage Time | | $I_C$ = 500mA, $I_{B1}$ = $I_{B2}$ = 50mA | | 350 | |
| Fall Time | $t_f$ | $I_C$ = 500mA, $I_{B1}$ = $I_{B2}$ = 50mA | | 50 | |

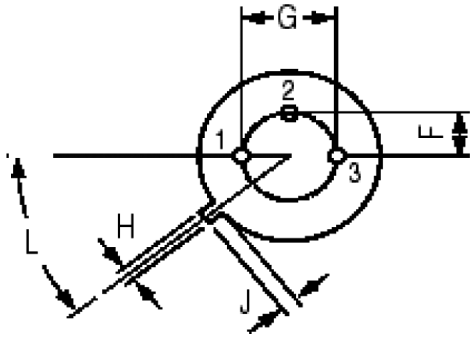
*Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤2%

## TO-39 Metal Can Package




| Dim. | Min. | Max. |
|---|---|---|
| A | 8.5 | 9.39 |
| B | 7.74 | 8.5 |
| C | 6.09 | 6.6 |
| D | 0.4 | 0.53 |
| E | - | 0.88 |
| F | 2.41 | 2.66 |
| G | 4.82 | 5.33 |
| H | 0.71 | 0.86 |
| J | 0.73 | 1.02 |
| K | 12.7 | - |
| L | 42° | 48° |

Dimensions : Millimetres




**Pin Configuration**

1. Emitter
2. Base
3. Collector

### Part Number Table

| Description | Part Number |
|---|---|
| Transistor, PNP, TO-39 | 2N4033 |