

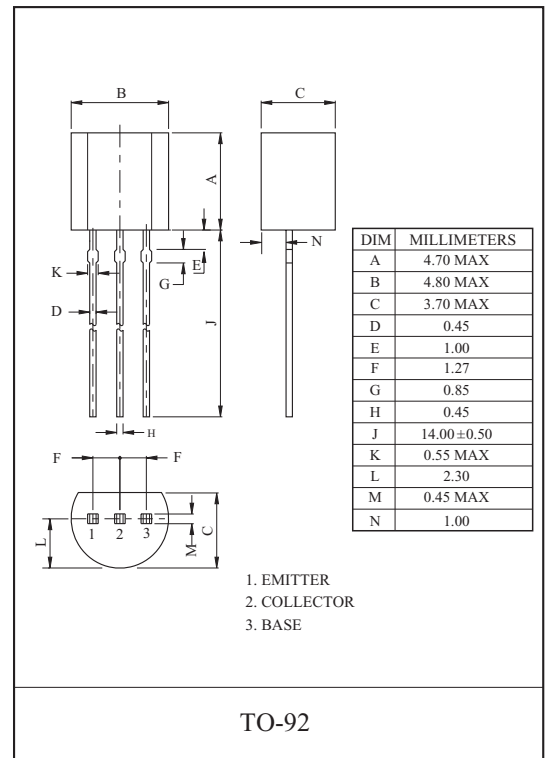
GENERAL PURPOSE APPLICATION.
HIGH VOLTAGE APPLICATION.

FEATURES

- High Collector Breakdwon Voltage
: $V_{CBO} = -160V$, $V_{CEO} = -150V$
- Low Leakage Current.
: $I_{CBO} = -50nA(\text{Max.}) @ V_{CB} = -120V$
- Low Saturation Voltage
: $V_{CE(\text{sat})} = -0.5V(\text{Max.}) @ I_C = -50mA, I_B = -5mA$
- Low Noise : $NF = 8dB(\text{Max.})$

MAXIMUM RATING (Ta=25 °C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|-----------|-----------|------|
| Collector-Base Voltage | V_{CBO} | -160 | V |
| Collector-Emitter Voltage | V_{CEO} | -150 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -600 | mA |
| Base Current | I_B | -100 | mA |
| Collector Power Dissipation (Ta=25 °C) | P_C | 625 | mW |
| Collector Power Dissipation (Tc=25 °C) | P_C | 1.5 | W |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_{stg} | -55 ~ 150 | °C |



2N5401C

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--|----------------|---|------|------|------|---------|
| Collector Cut-off Current | I_{CBO} | $V_{CB}=-120V, I_E=0$ | - | - | -50 | nA |
| | | $V_{CB}=-120V, I_E=0, T_a=100^\circ C$ | - | - | -50 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB}=-3V, I_C=0$ | - | - | -50 | nA |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=-0.1mA, I_E=0$ | -160 | - | - | V |
| Collector-Emitter Breakdown Voltage * | $V_{(BR)CEO}$ | $I_C=-1mA, I_B=0$ | -150 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=-10\mu A, I_C=0$ | -5 | - | - | V |
| DC Current Gain * | $h_{FE}(1)$ | $V_{CE}=-5V, I_C=-1mA$ | 50 | - | - | |
| | $h_{FE}(2)$ | $V_{CE}=-5V, I_C=-10mA$ | 60 | - | 240 | |
| | $h_{FE}(3)$ | $V_{CE}=-5V, I_C=-50mA$ | 50 | - | - | |
| Collector-Emitter Saturation Voltage * | $V_{CE(sat)1}$ | $I_C=-10mA, I_B=-1mA$ | - | - | -0.2 | V |
| | $V_{CE(sat)2}$ | $I_C=-50mA, I_B=-5mA$ | - | - | -0.5 | |
| Base-Emitter Saturation Voltage * | $V_{BE(sat)1}$ | $I_C=-10mA, I_B=-1mA$ | - | - | -1.0 | V |
| | $V_{BE(sat)2}$ | $I_C=-50mA, I_B=-5mA$ | - | - | -1.0 | |
| Transition Frequency | f_T | $V_{CE}=-10V, I_C=-10mA, f=100MHz$ | 100 | - | 300 | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=-10V, I_E=0, f=1MHz$ | - | - | 6 | pF |
| Small-Signal Current Gain | h_{fe} | $V_{CE}=-10V, I_C=-1mA, f=1kHz$ | 40 | - | 200 | |
| Noise Figure | NF | $V_{CE}=-5V, I_C=-250\mu A$ $R_g=1k \Omega, f=10Hz \sim 15.7kHz$ | - | - | 8 | dB |

* Pulse Test : Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.