

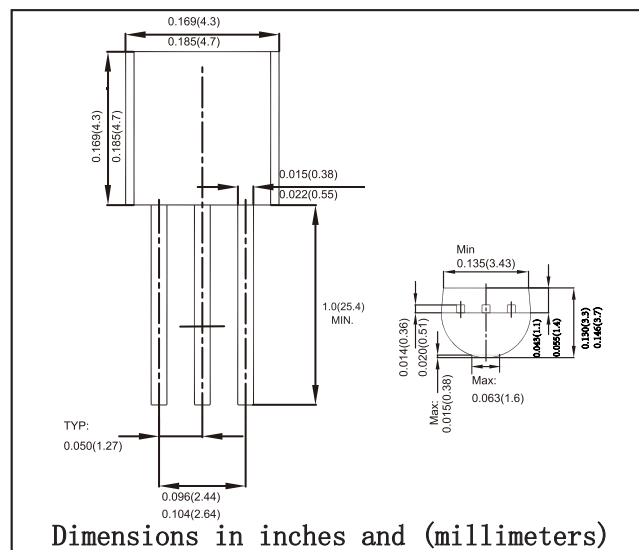
## TO-92 Plastic-Encapsulate Transistors

### FEATURES

- Switching and amplification in high voltage
- Applications such as telephony
- Low current
- High voltage
- NPN Transistors

### MECHANICAL DATA

- Case style:TO-92 molded plastic
- Mounting position:any



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter                                   | Symbol    | Value     | Unit  |
|---------------------------------------------|-----------|-----------|-------|
| Collector-Base Voltage                      | $V_{CBO}$ | 350       | V     |
| Collector-Emitter Voltage                   | $V_{CEO}$ | 350       | V     |
| Emitter-Base Voltage                        | $V_{EBO}$ | 6         | V     |
| Collector Current -Continuous               | $I_C$     | 0.5       | A     |
| Collector Power Dissipation                 | $k_D$     | 625       | mW    |
| Thermal Resistance from Junction to Ambient | $R_{KJA}$ | 200       | °C /W |
| Junction Temperature                        | $T_j$     | 150       | °C    |
| Storage Temperature                         | $T_{stg}$ | -55 ~+150 | °C    |

| Parameter                            | Symbol        | Test conditions                 | Min | Typ | Max  | Unit |
|--------------------------------------|---------------|---------------------------------|-----|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=0.1mA, I_E=0$              | 350 |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$                | 3   |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=0.01mA, I_C=0$             |     |     |      | V    |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=250V, I_E=0$            |     |     | 0.05 | μA   |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5V, I_C=0$              |     |     | 0.05 | μA   |
| DC current gain                      | $h_{FE}$      | $V_{CE}=10V, I_C=1mA$           | 2   |     |      |      |
|                                      |               | $V_{CE}=10V, I_C=10mA$          | 3   |     |      |      |
|                                      |               | $V_{CE}=10V, I_C=30mA$          | 3   |     | 200  |      |
|                                      |               | $V_{CE}=10V, I_C=50mA$          | 2   |     | 200  |      |
|                                      |               | $V_{CE}=10V, I_C=100mA$         | 1   |     |      |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=1mA$             |     |     | 0.3  | V    |
|                                      |               | $I_C=50mA, I_B=5mA$             |     |     | 1    | V    |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=10mA, I_B=1mA$             |     |     | 0.75 |      |
|                                      |               | $I_C=20mA, I_B=2mA$             |     |     | 0.85 |      |
|                                      |               | $I_C=30mA, I_B=3mA$             |     |     | 0.9  | V    |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=10V, I_C=100mA$         |     |     | 2    | V    |
| Transition frequency                 | $f_T$         | $V_{CE}=20V, I_C=10mA, f=20MHz$ |     |     | 200  | M    |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=20V, I_E=0, f=1MHz$     |     |     | 6    | pF   |

\*Pulse test: pulse width ≤300μs, duty cycles ≤2.0%.

## RATINGS AND CHARACTERISTIC CURVES

Fig. 1 - Static Characteristics

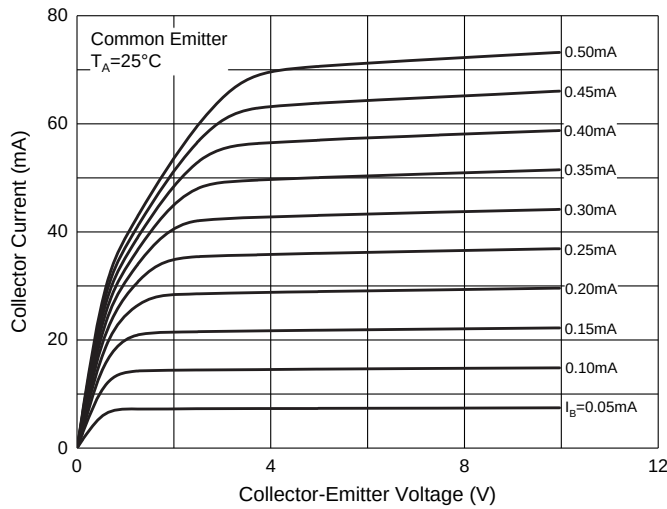


Fig. 2 - DC Current Gain Characteristics

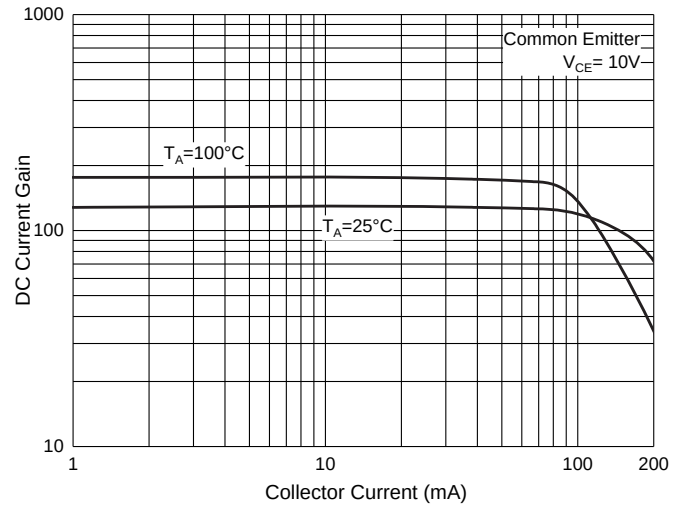


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

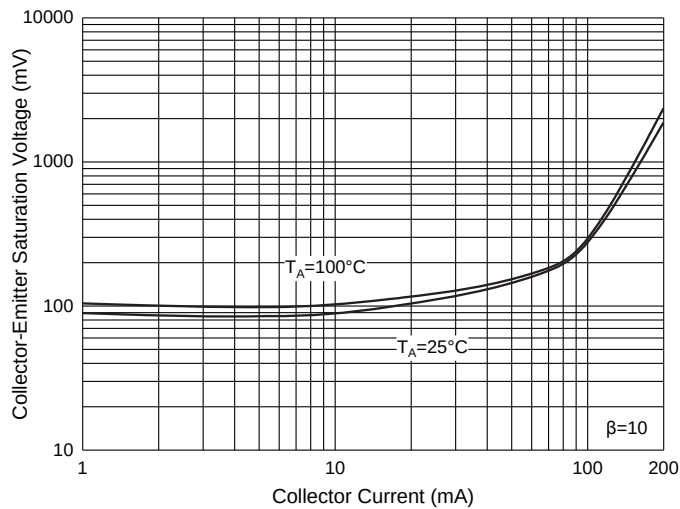


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

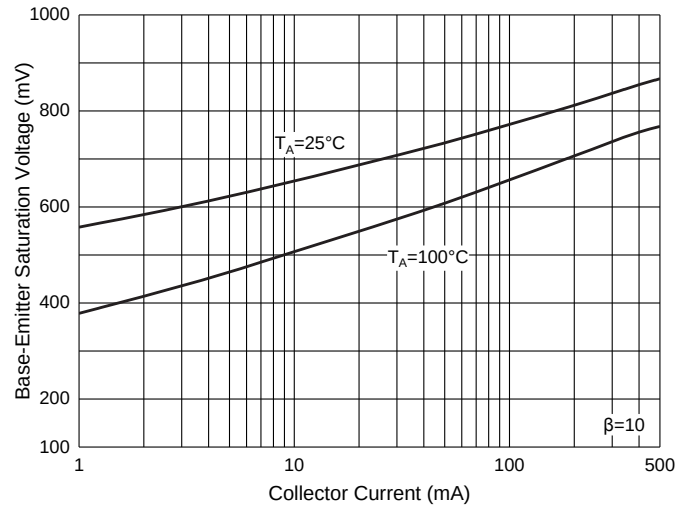


Fig. 5 - Base-Emitter Voltage Characteristics

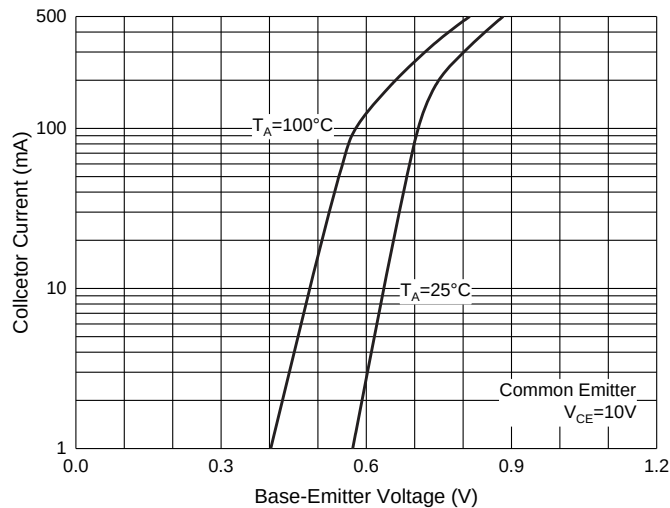


Fig. 6 - Collector Power Derating Curve

