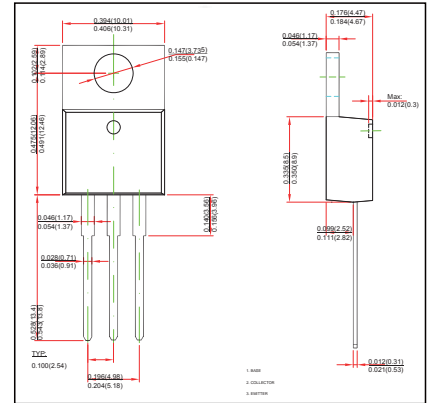


TO-220 Plastic-Encapsulate Transistors
FEATURES

- Power switching applications
- Good high temperature
- Low saturation voltage
- High speed switching
- TRANSISTOR(NPN)

MECHANICAL DATA

- Case style: TO-220L 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} | 700 | V |
| Collector-Emitter Voltage | V_{CEO} | 420 | V |
| Emitter-Base Voltage | V_{EBO} | 9 | V |
| Collector Current -Continuous | I_C | 4 | A |
| Collector Power Dissipation | P_C | 2 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 62.5 | °C/ W |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature | T_{stg} | -55 ~ +150 | °C |

 Electrical Specification ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|------------------|---|--------------|-----|--------------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=1\text{mA}, I_E=0$ | 700 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=10\text{mA}, I_B=0$ | 420 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=1\text{mA}, I_C=0$ | 9 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=700\text{V}, I_E=0$ | | | 100 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=400\text{V}, I_B=0$ | | | 100 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=7\text{V}, I_C=0\text{A}$ | | | 100 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=5\text{V}, I_C=1\text{A}$ | 10 | | 40 | |
| | $h_{FE(2)}$ | $V_{CE}=5\text{V}, I_C=200\text{mA}$ | 10 | | 60 | |
| | $h_{FE(3)}$ | $V_{CE}=5\text{V}, I_C=10\text{mA}$ | 5 | | | |
| | $h_{FE(4)}$ | $V_{CE}=5\text{V}, I_C=4\text{A}$ | 8 | | 40 | |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}$ | $I_C=1\text{A}, I_B=0.2\text{A}$ | | | 0.3 | V |
| | $V_{CE(sat)(2)}$ | $I_C=2\text{A}, I_B=0.4\text{A}$ | 0.15 0.25 | | 0.28 0.35 | V V |
| | $V_{CE(sat)(3)}$ | $I_C=4\text{A}, I_B=1\text{A}$ | | | 0.8 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=2\text{A}, I_B=0.5\text{A}$ | | | 1.6 | V |
| Diode forward voltage | V_{FEC} | $I_C=2\text{A}$ | | | 2 | V |
| Transition frequency | f_T | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$ | 5 | | | MHz |
| Rise time | t_r | $I_C=250\text{mA}$ | | | 0.5 | μs |
| Storage time | t_s | $I_C=250\text{mA}$ | 2.0 | | 4.0 | |
| Fall time | t_f | $I_C=250\text{mA}$ | | | 0.5 | |

RATINGS AND CHARACTERISTIC CURVES

Static Characteristic

