# TIGER ELECTRONIC CO.,LTD

**Product specification**

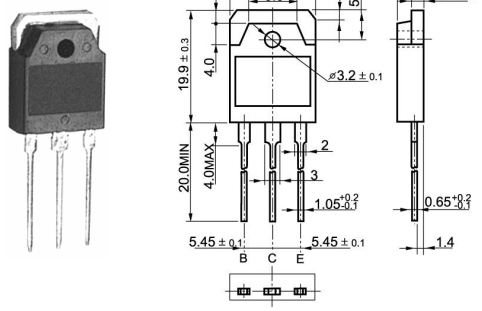
## Silicon NPN Power Transistor — MJE13010A

### DESCRIPTION

Silicon NPN, high power transistors in a plastic envelope, primarily for use in high-speed power switching circuits.

### Absolute Maximum Ratings ( Ta = 25 °C)

| Parameter | I | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 700 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 400 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 9 | V |
| Collector Current | $I_C$ | 13.0 | A |
| Base Current | $I_B$ | 6.0 | A |
| Total Dissipation at | $P_{tot}$ | 110 | W |
| Max. Operating Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature | $T_{stg}$ | -55~150 | °C |




TO-3PN

### Electrical Characteristics ( Ta = 25 °C)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CE}$=700V, $I_E$=0 | — | — | 1.0 | mA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$=9V, $I_C$=0 | — | — | 1.0 | mA |
| Collector-Emitter Sustaining Voltage | $V_{CEO}$ | $I_C$=10mA, $I_B$=0 | 400 | — | — | V |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=5V, $I_C$=5.0A | 8 | — | 40 | |
| | $h_{FE(2)}$ | $V_{CE}$=5V, $I_C$=8.0A | 6 | — | 30 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=12A,$I_B$=3.0A | — | — | 3.0 | V |
| | | $I_C$=8.0A,$I_B$=1.6A | — | — | 1.5 | |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=8.0A,$I_B$=1.6A | — | — | 1.6 | V |
| Current Gain Bandwidth Product | $f_T$ | $V_{CE}$=10V, $I_C$=0.5A,f=1MHz | 4 | — | — | MHz |
| Output Capacitance | $C_{ob}$ | $V_{CB}$=10V,$I_E$=0,f=0.1MHz | — | 180 | — | pF |
| Turn Off Time | $t_S$ | $I_{B1}$=-$I_{B2}$=1.6A,$T_P$=25 μ s | — | 1.7 | 4.0 | us |