



Pb Free Plating Product

## E13005-250

MJE Power Transistor

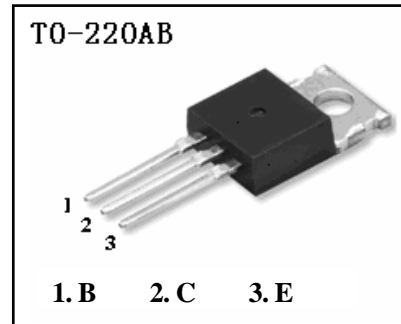
Silicon NPN Power Transistor

Product specification

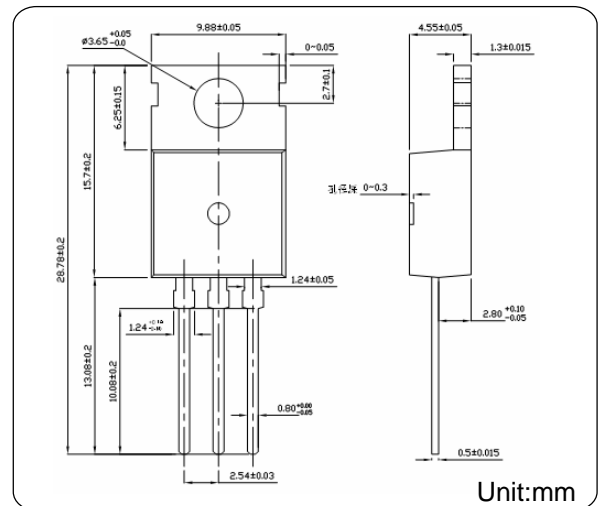
MJE13005 series

## DESCRIPTION

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

Absolute Maximum Ratings (  $T_a = 25^\circ\text{C}$  )

| 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                   | $I_C$     | 5.0     | A                |
| Base Current                        | $I_B$     | 2.0     | A                |
| Total Dissipation at                | $P_{tot}$ | 75      | W                |
| Max. Operating Junction Temperature | $T_j$     | 150     | $^\circ\text{C}$ |
| Storage Temperature                 | $T_{stg}$ | -55~150 | $^\circ\text{C}$ |

Electrical Characteristics (  $T_a = 25^\circ\text{C}$  )

| Parameter                            | Symbol        | Test Conditions                      | Min. | Typ. | Max. | Unit          |
|--------------------------------------|---------------|--------------------------------------|------|------|------|---------------|
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CE}=700\text{V}, I_E=0$          | —    | —    | 10   | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB}=6.0\text{V}, I_C=0$          | —    | —    | 10   | $\mu\text{A}$ |
| Collector-Emitter Sustaining Voltage | $V_{CEO}$     | $I_C=10\text{mA}, I_B=0$             | 400  | —    | —    | V             |
| DC Current Gain                      | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=1.0\text{A}$  | 15   | —    | 30   |               |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=4.0\text{A}, I_B=1.0\text{A}$   | —    | —    | 1.0  | V             |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=2.0\text{A}, I_B=0.5\text{A}$   | —    | —    | 1.5  | V             |
| Current Gain Bandwidth Product       | $f_T$         | $V_{CE}=10\text{V}, I_C=0.5\text{A}$ | 4    | —    | —    | MHz           |
| Turn Off Time                        | $t_S$         | $I_{B1}=-I_{B2}=0.5\text{A}$         | 2.0  | 3.0  | 4.0  | $\mu\text{s}$ |