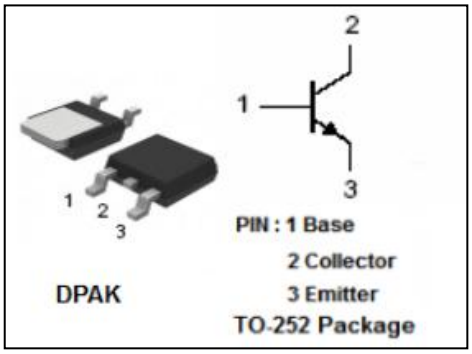
# Isc Silicon NPN Power Transistor — MJE13005D

## DESCRIPTION

- High Voltage Capability
- High Speed Switching
- Wide Area of Safe Operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

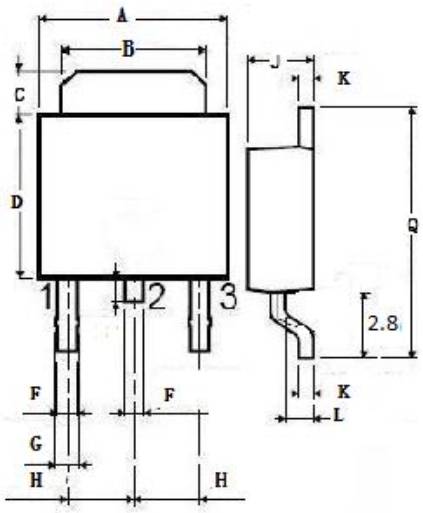



## APPLICATIONS

- Fluorescent lamp
- Electronic ballast
- Electronic transformer
- Switch mode power supply

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 700 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 400 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 9 | V |
| $I_C$ | Collector Current-Continuous | 4 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 65 | W |
| $T_j$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -55~150 | ℃ |




| | mm | |
|---|---|---|
| DIM | MIN | MAX |
| A | 6.4 | 6.6 |
| B | 5.2 | 5.4 |
| C | 1.3 | 1.7 |
| D | 5.2 | 5.7 |
| F | 0.6 | 0.7 |
| G | 0.65 | 0.75 |
| H | 2.1 | 2.5 |
| J | 2.1 | 2.4 |
| K | 0.4 | 0.6 |
| L | 0.9 | 1.1 |
| Q | 9.5 | 10 |

# isc Silicon NPN Power Transistor MJE13005D

## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA ;$I_B$= 0 | 400 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$= 1mA ;$I_C$= 0 | 9 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 2A; $I_B$= 0.5A | | | 1.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 2A; $I_B$= 0.5A | | | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 700V; $I_E$= 0 | | | 0.1 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 9V; $I_C$= 0 | | | 0.1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 5mA ; $V_{CE}$= 5V | 10 | | | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 1A ; $V_{CE}$= 5V | 10 | | 40 | |