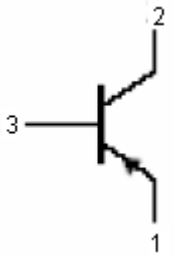
# Silicon PNP Power Transistor

## Features:

- Collector- emitter sustaining voltage : $V_{CEO(SUS)}$ = -80 V
- DC Current Gain - : $h_{FE}$ = 30 (Minimum) at $I_C$ = -0.5 A
  = 12 (Minimum) at $I_C$ = -1.5 A

## Applications:

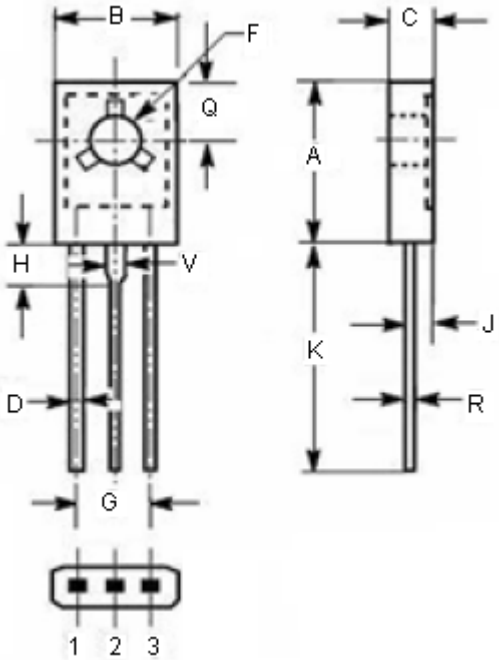
Low power audio amplifier
Low current high speed switching applications




## Pin

1. Emitter
2. Collector
3. Base

## TO-126




| Dimensions | mm | |
|---|---|---|
| | Minimum | Maximum |
| A | 10.7 | 10.9 |
| B | 7.7 | 7.9 |
| C | 2.6 | 2.8 |
| D | 0.66 | 0.86 |
| F | 3.1 | 3.3 |
| G | 4.48 | 4.68 |
| H | 2 | 2.2 |
| J | 1.35 | 1.55 |
| K | 16.1 | 16.3 |
| Q | 3.7 | 3.9 |
| R | 0.4 | 0.6 |
| V | 1.17 | 1.37 |

Dimensions : Millimetres

## Absolute Maximum Ratings ($T_a$ = 25°C)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector - base voltage | -100 | V |
| $V_{CEO}$ | Collector - emitter voltage | -80 | V |
| $V_{EBO}$ | Emitter - base voltage | -7 | V |
| $I_C$ | Collector current - continuous | -3 | A |
| $I_{CM}$ | Collector current - peak | -6 | A |
| $I_B$ | Base current | -1 | A |
| $P_C$ | Collector power dissipation at $T_C$ = 25°C | 1.5 | W |
| | Collector power dissipation at $T_C$ = 25°C | 12.5 | W |
| $T_j$ | Junction temperature | 150 | °C |
| $T_{stg}$ | Storage temperature range | -65 to 150 | °C |

## Electrical Characteristics ($T_C$ = 25°C Unless Otherwise Specified)

| Symbol | Parameter | Conditions | Minimum | Maximum | Unit |
|---|---|---|---|---|---|
| $V_{CEO\ (SUS)}$ | Collector - emitter sustaining voltage | $I_C$ = -10 mA; $I_B$ = 0 | -80 | - | V |
| $V_{CE\ (sat)-1}$ | Collector - emitter saturation voltage | $I_C$ = -0.5 A; $I_B$ = -50 mA | - | -0.3 | V |
| $V_{CE\ (sat)-2}$ | Collector - emitter saturation voltage | $I_C$ = -1.5 A; $I_B$ = -0.15 A | - | -0.9 | V |
| $V_{CE\ (sat)-3}$ | Collector - emitter saturation voltage | $I_C$ = -3 A; $I_B$ = -0.6 A | - | -1.7 | V |
| $V_{BE\ (sat)-1}$ | Base - emitter saturation voltage | $I_C$ = -1.5 A; $I_B$ = -0.15 A | - | -1.5 | V |
| $V_{BE\ (sat)-2}$ | Base - emitter saturation voltage | $I_C$ = -3 A; $I_B$ = 0.6 A | - | -2 | V |
| $V_{BE\ (on)}$ | Base - emitter on voltage | $V_{CE}$ = -1 V; $I_C$ = -0.5 A | - | -1.2 | V |
| $I_{CBO}$ | Collector cut off current | $V_{CB}$ = -100 V; $I_E$ = 0<br>$V_{CB}$ = -100 V; $I_E$ = 0; $T_C$ = 150°C | - | -0.1<br>-0.1 | µA<br>mA |
| $I_{EBO}$ | Emitter cut off current | $V_{EB}$ = -7 V; $I_C$ = 0 | - | -0.1 | µA |
| $h_{FE-1}$ | DC current gain | $I_C$ = 0.1 A; $V_{CE}$ = -1 V | 50 | 250 | - |
| $h_{FE-2}$ | DC current gain | $I_C$ = 0.5 A; $V_{CE}$ = -1 V | 30 | - | - |
| $-h_{FE-3}$ | DC current gain | $I_C$ = 1.5 A; $V_{CE}$ = -1 V | 12 | - | - |
| $f_T$ | Current-gain - bandwidth product | $I_C$ = 0.1 A; $V_{CE}$ = -1 V; | 50 | - | MHz |
| $C_{OB}$ | Output Capacitance | $I_E$ = 0; $V_{CB}$ = -10 V; $f_{test}$ = 1 MHz | - | 60 | pF |

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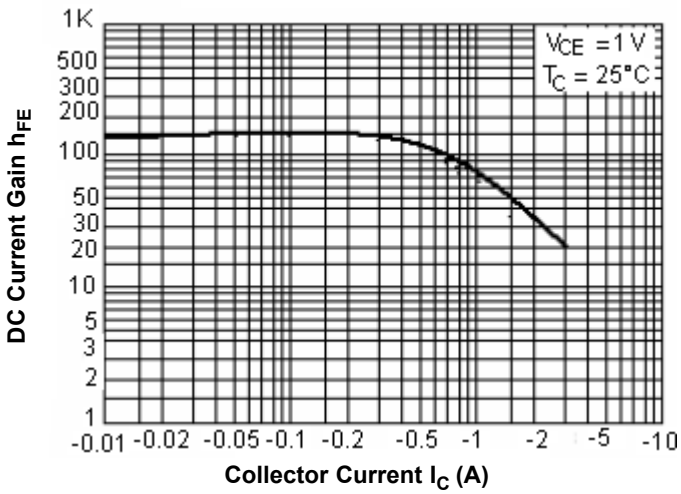
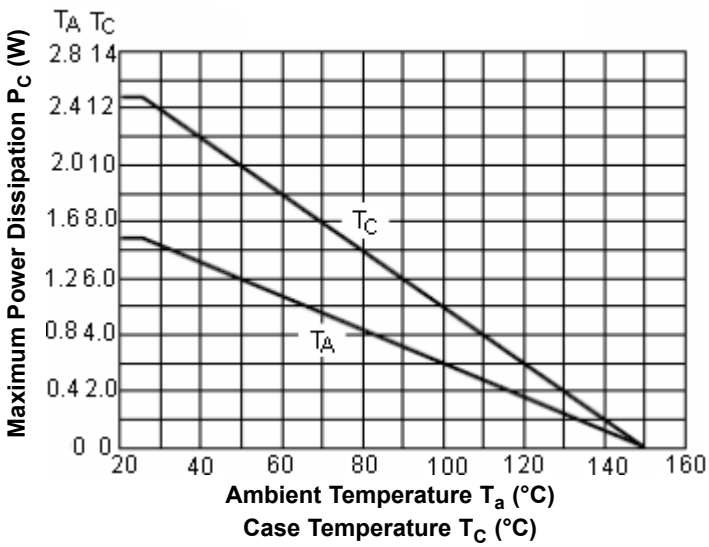
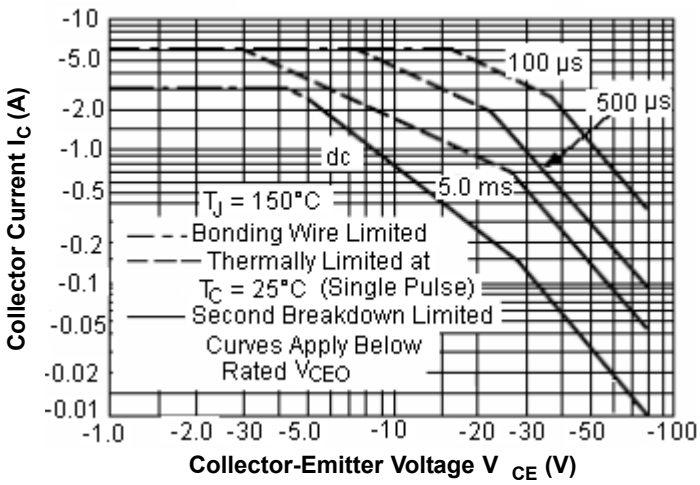
**$h_{FE}$-$I_C$ Characteristics**




**Power Derating**




**Safe Operating Area**




## Part Number Table

| Description | Part Number |
|---|---|
| Silicon PNP Power Transistor | MJE172 |