

SPTECH Silicon PNP Power Transistor

MJE15031

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 150V(\text{Min})$
- High Current Gain-Bandwidth Product-
: $f_T = 30\text{MHz}(\text{Min}) @ I_C = 0.5A$
- DC current gain -
: $h_{FE} = 40 (\text{Min}) @ I_C = 3.0 A$
: $h_{FE} = 20 (\text{Min}) @ I_C = 4.0 A$
 - Complement to Type MJE15030

APPLICATIONS

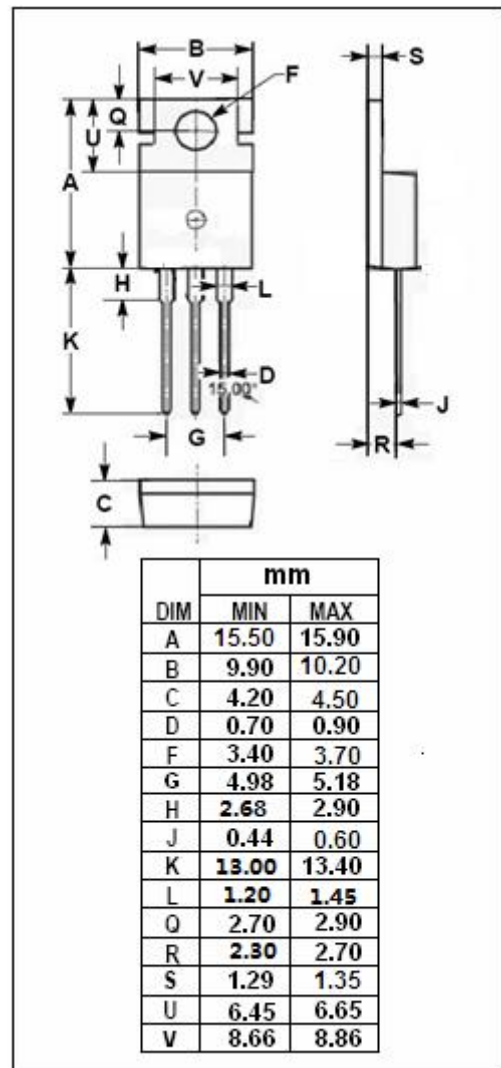
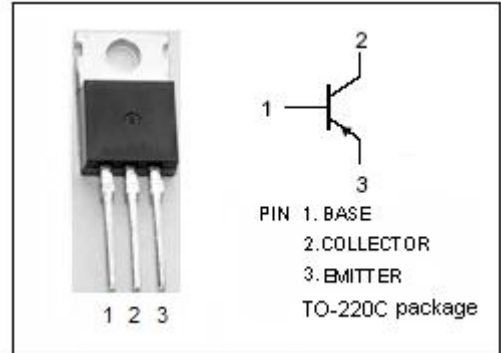
- Designed for use as high-frequency drivers in audio amplifiers.

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | -150 | V |
| V_{CEO} | Collector-Emitter Voltage | -150 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current-Continuous | -8 | A |
| I_{CM} | Collector Current-Peak | -16 | A |
| I_B | Base Current | -2 | A |
| P_C | Collector Power Dissipation @ $T_a=25^\circ\text{C}$ | 2 | W |
| | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 50 | |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -65~150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---|------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 2.5 | $^\circ\text{C/W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 62.5 | $^\circ\text{C/W}$ |



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ELECTRICAL CHARACTERISTICS

 $T_c=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|----------------|--------------------------------------|---|------|------|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C = -10\text{mA}; I_B = 0$ | -150 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -1\text{A}; I_B = -0.1\text{A}$ | | -0.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = -1\text{A}; V_{CE} = -2\text{V}$ | | -1.0 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = -150\text{V}; I_E = 0$ | | -10 | μA |
| I_{CEO} | Collector Cutoff Current | $V_{CE} = -150\text{V}; I_B = 0$ | | -0.1 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -5\text{V}; I_C = 0$ | | -10 | μA |
| h_{FE-1} | DC Current Gain | $I_C = -0.1\text{A}; V_{CE} = -2\text{V}$ | 40 | | |
| h_{FE-2} | DC Current Gain | $I_C = -2\text{A}; V_{CE} = -2\text{V}$ | 40 | 200 | |
| h_{FE-3} | DC Current Gain | $I_C = -3\text{A}; V_{CE} = -2\text{V}$ | 40 | | |
| h_{FE-4} | DC Current Gain | $I_C = -4\text{A}; V_{CE} = -2\text{V}$ | 20 | | |
| f_T | Current Gain-Bandwidth Product | $I_C = -0.5\text{A}; V_{CE} = -10\text{V}; f_{test} = 10\text{MHz}$ | 20 | | MHz |