

Silicon NPN Power Transistors

MJE15030

DESCRIPTION

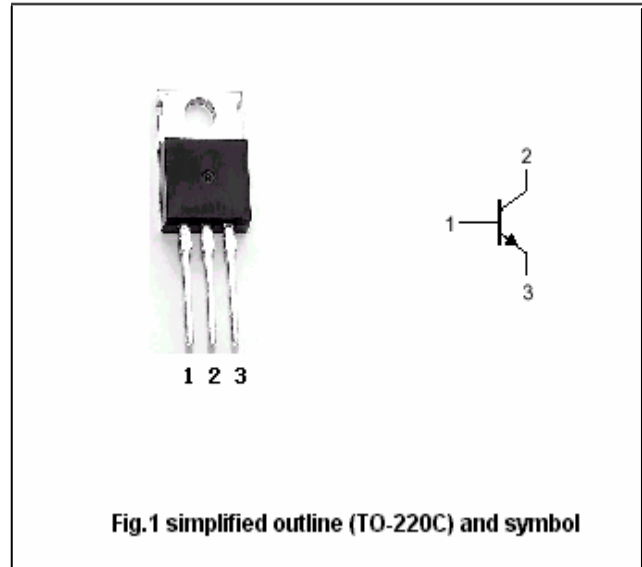
- With TO-220C package
- Complement to type MJE15031
- High transition frequency
- DC current gain specified to 4.0 amperes
 - $h_{FE} = 40$ (Min) @ $I_C = 3.0$ Adc
 - $h_{FE} = 20$ (Min) @ $I_C = 4.0$ Adc

APPLICATIONS

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

PINNING

| PIN | DESCRIPTION |
|-----|--------------------------------------|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |



Absolute maximum ratings (Tc=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|------------------------|---------|------|
| V_{CBO} | Collector-base voltage | Open emitter | 150 | V |
| V_{CEO} | Collector-emitter voltage | Open base | 150 | V |
| V_{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I_C | Collector current (DC) | | 8 | A |
| I_{CM} | Collector current-Peak | | 16 | A |
| I_B | Base current | | 2 | A |
| P_D | Total power dissipation | $T_a=25^\circ\text{C}$ | 2 | W |
| | | $T_c=25^\circ\text{C}$ | 50 | |
| T_j | Junction temperature | | 150 | °C |
| T_{stg} | Storage temperature | | -65~150 | °C |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|-------------|--|------|------|
| R_{thj-c} | Thermal resistance ; junction to case | 2.5 | °C/W |
| R_{thj-a} | Thermal resistance , junction to ambient | 62.5 | °C/W |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---|-----|------|-----|------|
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | I _C =10mA; I _B =0 | 150 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =1A; I _B =0.1A | | | 0.5 | V |
| V _{BE} | Base-emitter on voltage | I _C =1A; V _{CE} =2V | | | 1.0 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =150V; I _E =0 | | | 10 | μA |
| I _{CEO} | Collector cut-off current | V _{CE} =150V; I _B =0 | | | 0.1 | mA |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 10 | μA |
| h _{FE-1} | DC current gain | I _C =0.1A; V _{CE} =2V | 40 | | | |
| h _{FE-2} | DC current gain | I _C =2A; V _{CE} =2V | 40 | | | |
| h _{FE-3} | DC current gain | I _C =3A; V _{CE} =2V | 40 | | | |
| h _{FE-4} | DC current gain | I _C =4A; V _{CE} =2V | 20 | | | |
| f _T | Transition frequency | I _C =0.5A; V _{CE} =10V; f=10MHz | 30 | | | MHz |

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PACKAGE OUTLINE

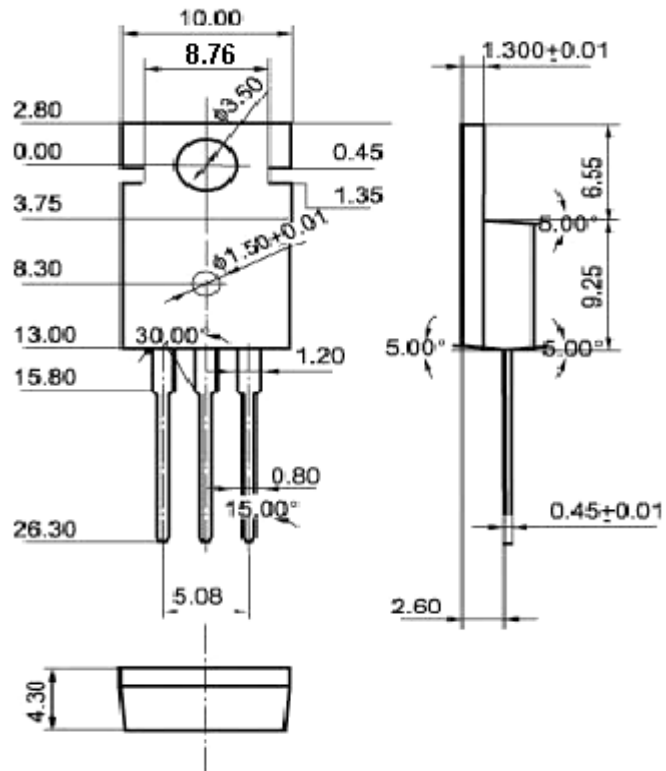


Fig.2 Outline dimensions (unindicated tolerance: $\pm 0.10\text{mm}$)

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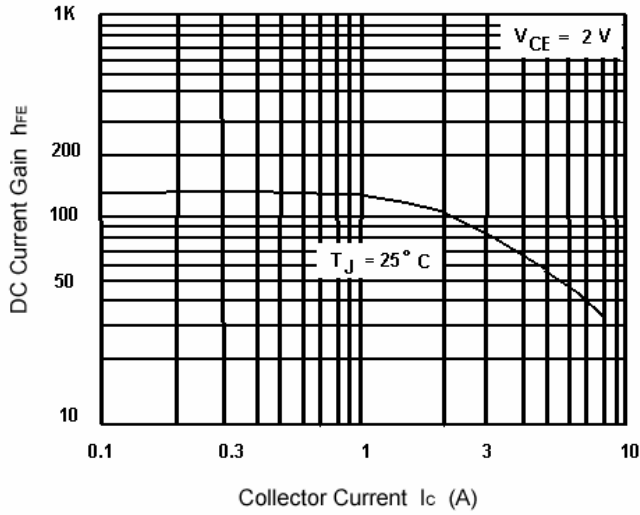


Fig.3 DC current Gain

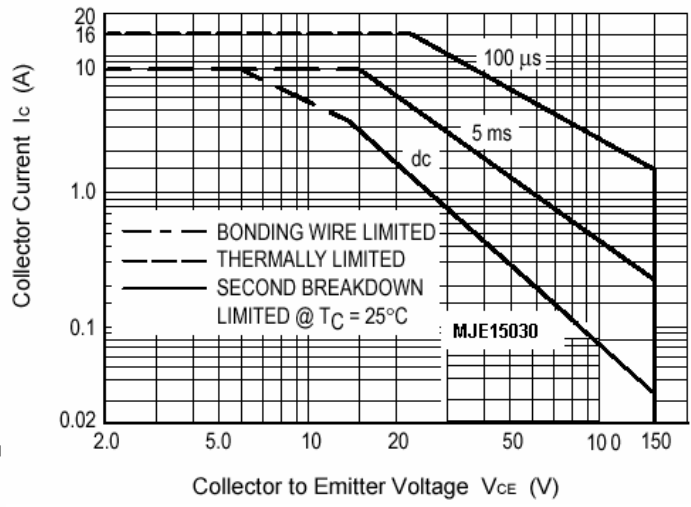


Fig.4 Safe Operating Area

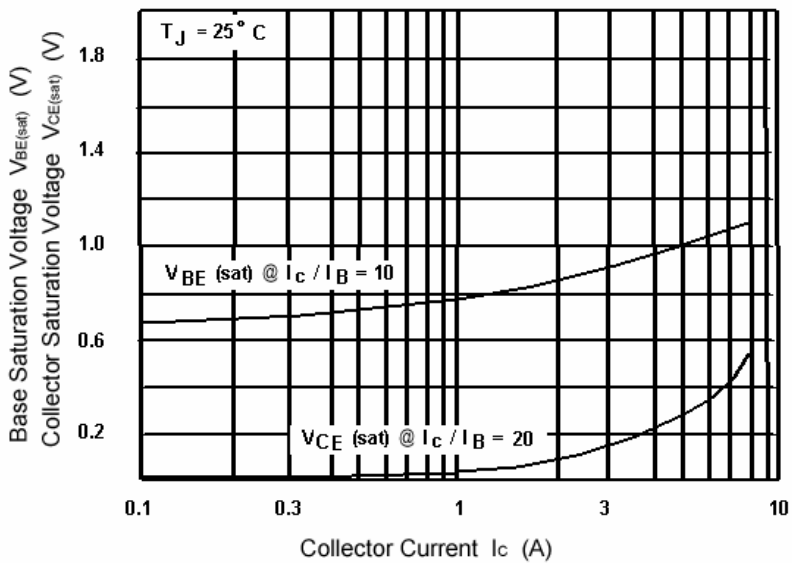


Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage