

Silicon NPN Power Transistors

MJE180/181/182

DESCRIPTION

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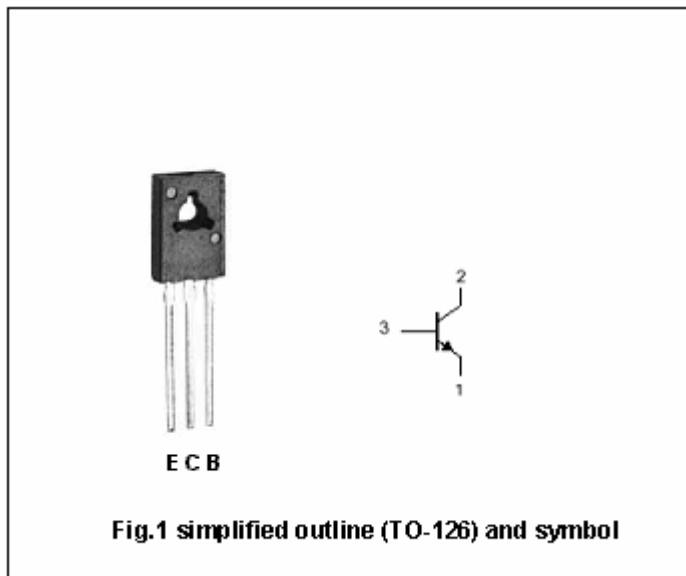
- With TO-126 package
- Complement to type MJE170/171/172

APPLICATIONS

- For low power audio amplifier and low current high speed switching applications

PINNING (see Fig.2)

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



ABSOLUTE MAXIMUM RATINGS(T_c=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | MJE180 | 60 | V |
| | | MJE181 | 80 | |
| | | MJE182 | 100 | |
| V _{CEO} | Collector-emitter voltage | MJE180 | 40 | V |
| | | MJE181 | 60 | |
| | | MJE182 | 80 | |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 3 | A |
| I _{CM} | Collector current-peak | | 6 | A |
| I _B | Base current | | 1 | A |
| P _C | Collector power dissipation | T _a =25°C | 1.5 | W |
| | | T _C =25°C | 12.5 | |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -65~150 | °C |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

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| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|------------------------|--------------------------------------|--|--|------|-----|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | MJE180 | I _C =10mA; I _B =0 | | | V |
| | | MJE181 | | | | |
| | | MJE182 | | | | |
| V _{CE(sat)-1} | Collector-emitter saturation voltage | I _C =500mA ; I _B =50mA | | | 0.3 | V |
| V _{CE(sat)-2} | Collector-emitter saturation voltage | I _C =1.5A ; I _B =150mA | | | 0.9 | V |
| V _{CE(sat)-3} | Collector-emitter saturation voltage | I _C =3A ; I _B =600mA | | | 1.7 | V |
| V _{BE(sat)-1} | Base-emitter saturation voltage | I _C =1.5A ; I _B =150mA | | | 1.5 | V |
| V _{BE(sat)-2} | Base-emitter saturation voltage | I _C =3A ; I _B =600mA | | | 2.0 | V |
| V _{BE} | Base-emitter on voltage | I _C =500mA ; V _{CE} =1V | | | 1.2 | V |
| I _{CBO} | Collector cut-off current | MJE180 | V _{CB} =60V; I _E =0 T _C =150°C | | | 0.1 |
| | | MJE181 | | | | 0.1 |
| | | MJE182 | | | | 0.1 |
| I _{EBO} | Emitter cut-off current | V _{EB} =7V; I _C =0 | | | 0.1 | μA |
| h _{FE-1} | DC current gain | I _C =100mA ; V _{CE} =1V | 50 | | 250 | |
| h _{FE-2} | DC current gain | I _C =500mA ; V _{CE} =1V | 30 | | | |
| h _{FE-3} | DC current gain | I _C =1.5A ; V _{CE} =1V | 12 | | | |
| f _T | Transition frequency | I _C =100mA ; V _{CE} =10V | 50 | | | MHz |
| C _{OB} | Output capacitance | I _E =0 ; V _{CB} =10V, f=0.1MHz | | | 30 | pF |

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PACKAGE OUTLINE

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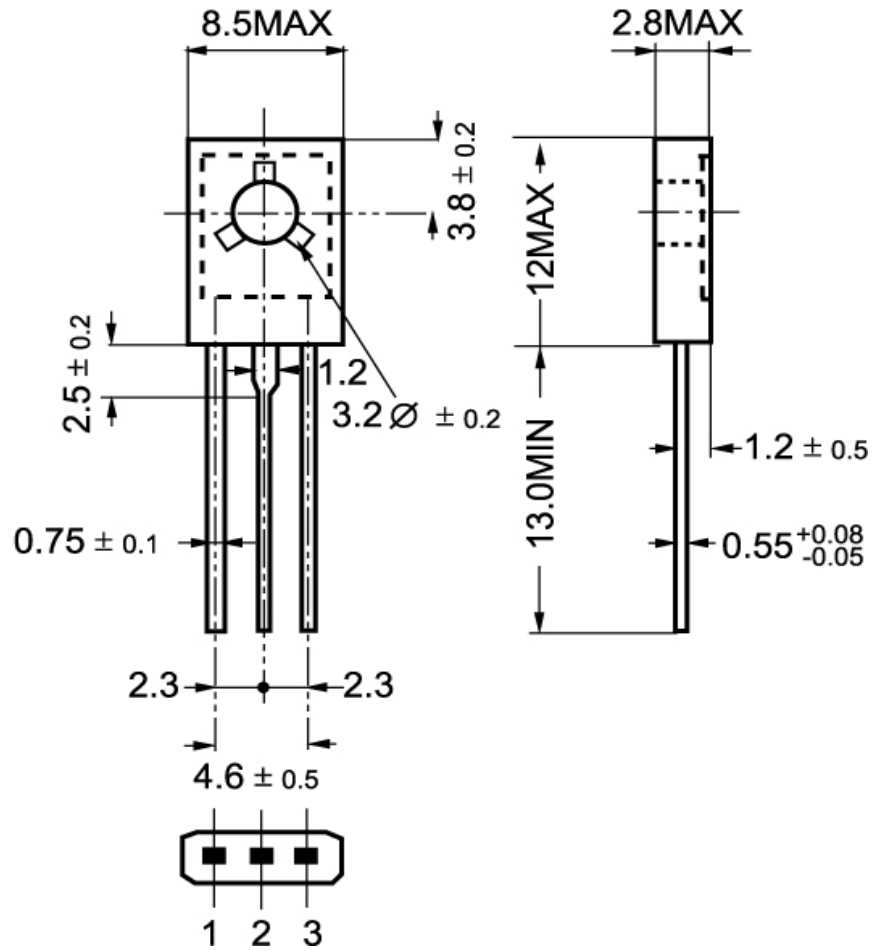


Fig.2 Outline dimensions