

Silicon NPN Power Transistors

2N6291 2N6293

DESCRIPTION

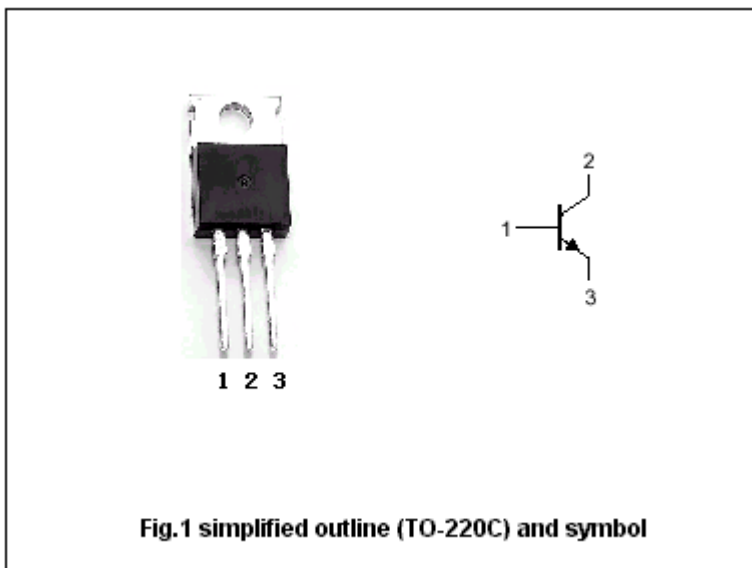
- With TO-220 package
- Low collector saturation voltage
- Wide safe operating area

APPLICATIONS

- For medium power switching and amplifier applications such as: series and shunt regulators and driver and output stages of high-fidelity amplifiers

PINNING

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



Absolute maximum ratings(Ta=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | 2N6291 | 60 | V |
| | | 2N6293 | 80 | |
| V _{CEO} | Collector-emitter voltage | 2N6291 | 50 | V |
| | | 2N6293 | 70 | |
| V _{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I _C | Collector current | | 7 | A |
| I _B | Base current | | 3 | A |
| P _T | Total power dissipation | T _C =25 | 40 | W |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -65~150 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|--|-------|------|
| R _{th j-c} | Thermal resistance from junction to case | 3.125 | /W |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|---|------|------------|------|
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | 2N6291 | I _C =0.1A ; I _B =0 | 50 | | V |
| | | 2N6293 | | 70 | | |
| V _{CEsat-1} | Collector-emitter saturation voltage | 2N6291 | I _C =2.5A; I _B =0.25A | | 1.0 | V |
| | | 2N6293 | I _C =2A; I _B =0.2A | | | |
| V _{CEsat-2} | Collector-emitter saturation voltage | I _C =7A; I _B =3A | | | 3.5 | V |
| V _{BE-1} | Base-emitter on voltage | 2N6291 | I _C =2.5A ; V _{CE} =4V | | 1.5 | V |
| | | 2N6293 | I _C =2A ; V _{CE} =4V | | | |
| V _{BE-2} | Base-emitter on voltage | I _C =7A ; V _{CE} =4V | | | 3.0 | V |
| I _{CEO} | Collector cut-off current | 2N6291 | V _{CE} =40V; I _B =0 | | 1.0 | mA |
| | | 2N6293 | V _{CE} =60V; I _B =0 | | | |
| I _{CEX} | Collector cut-off current | 2N6291 | V _{CE} =56V; V _{BE} =-1.5V V _{CE} =50V; V _{BE} =-1.5V, T _C =150 | | 0.1 2.0 | mA |
| | | 2N6293 | V _{CE} =75V; V _{BE} =-1.5V V _{CE} =70V; V _{BE} =-1.5V, T _C =150 | | 0.1 2.0 | |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 1.0 | mA |
| h _{FE-1} | DC current gain | 2N6291 | I _C =2.5A ; V _{CE} =4V | 30 | 150 | |
| | | 2N6293 | I _C =2A ; V _{CE} =4V | | | |
| h _{FE-2} | DC current gain | I _C =7A ; V _{CE} =4V | 2.3 | | | |
| C _{OB} | Output capacitance | I _E =0 ; V _{CB} =10V; f=1MHz | | | 250 | pF |
| f _T | Transition frequency | I _C =0.5A ; V _{CE} =4V; f=1MHz | 10 | | | MHz |

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PACKAGE OUTLINE

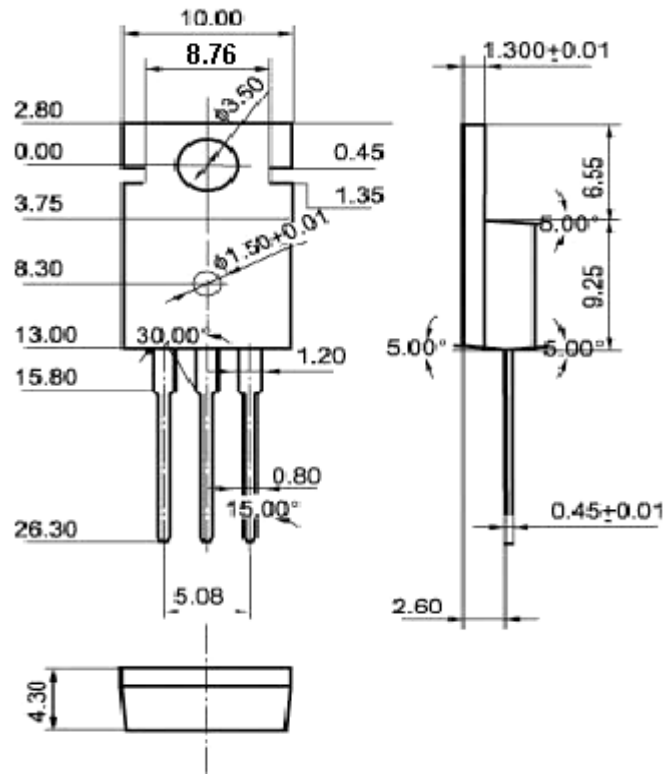


Fig.2 Outline dimensions(unindicated tolerance: ± 0.10 mm)