

**Silicon NPN Power Transistors**

**2N6288 2N6290 2N6292**

**DESCRIPTION**

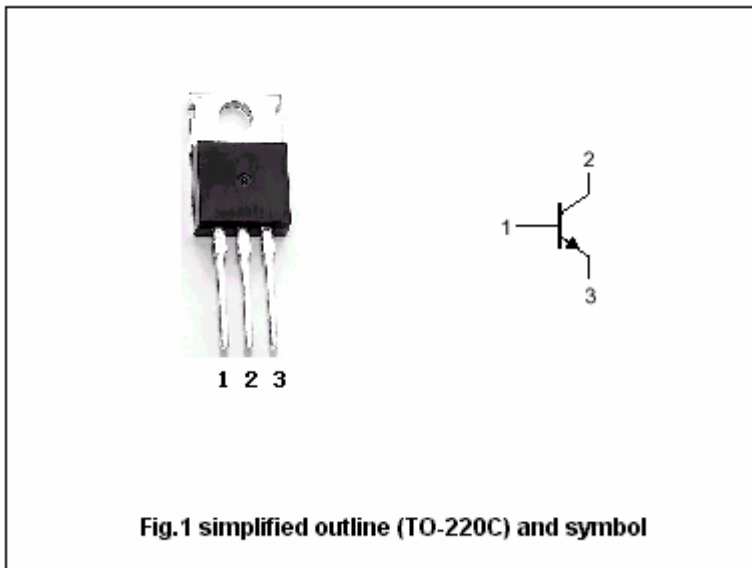
With TO-220 package  
 Complement to PNP type:  
 2N6107; 2N6109 ;2N6111

**APPLICATIONS**

Power amplifier and switching  
 circuits applications

**PINNING**

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



**Fig.1 simplified outline (TO-220C) and symbol**

**Absolute maximum ratings(Ta=25°C)**

| SYMBOL           | PARAMETER                 | CONDITIONS           | VALUE   | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage    | 2N6288               | 40      | V    |
|                  |                           | 2N6290               | 60      |      |
|                  |                           | 2N6292               | 80      |      |
| V <sub>CEO</sub> | Collector-emitter voltage | 2N6288               | 30      | V    |
|                  |                           | 2N6290               | 50      |      |
|                  |                           | 2N6292               | 70      |      |
| V <sub>EBO</sub> | Emitter-base voltage      | Open collector       | 5       | V    |
| I <sub>C</sub>   | Collector current         |                      | 7       | A    |
| I <sub>CM</sub>  | Collector current-peak    |                      | 10      | A    |
| I <sub>B</sub>   | Base current              |                      | 3       | A    |
| P <sub>T</sub>   | Total power dissipation   | T <sub>C</sub> =25°C | 40      | W    |
| T <sub>j</sub>   | Junction temperature      |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature       |                      | -65~150 | °C   |

**THERMAL CHARACTERISTICS**

| SYMBOL              | PARAMETER                                | MAX   | UNIT |
|---------------------|--|-------|------|
| R <sub>th j-c</sub> | Thermal resistance from junction to case | 3.125 | °C/W |

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

| SYMBOL                | PARAMETER                            | CONDITIONS   | MIN   | TYP. | MAX        | UNIT |   |
|-----------------------|--------------------------------------|--|---|------|------------|------|---|
| V <sub>CE0(SUS)</sub> | Collector-emitter sustaining voltage | 2N6288   | I <sub>C</sub> =0.1A ; I <sub>B</sub> =0  | 30   |            |      | V |
|                       |                                      | 2N6290   |   | 50   |            |      |   |
|                       |                                      | 2N6292   |   | 70   |            |      |   |
| V <sub>CEsat-1</sub>  | Collector-emitter saturation voltage | 2N6288   | I <sub>C</sub> =3A; I <sub>B</sub> =0.3A  |      | 1.0        | V    |   |
|                       |                                      | 2N6290   | I <sub>C</sub> =2.5A; I <sub>B</sub> =0.25A   |      |            |      |   |
|                       |                                      | 2N6292   | I <sub>C</sub> =2A; I <sub>B</sub> =0.2A  |      |            |      |   |
| V <sub>CEsat-2</sub>  | Collector-emitter saturation voltage | I <sub>C</sub> =7A; I <sub>B</sub> =3A             |   |      | 3.5        | V    |   |
| V <sub>BE-1</sub>     | Base-emitter on voltage              | 2N6288   | I <sub>C</sub> =3A ; V <sub>CE</sub> =4V  |      | 1.5        | V    |   |
|                       |                                      | 2N6290   | I <sub>C</sub> =2.5A ; V <sub>CE</sub> =4V  |      |            |      |   |
|                       |                                      | 2N6292   | I <sub>C</sub> =2A ; V <sub>CE</sub> =4V  |      |            |      |   |
| V <sub>BE-2</sub>     | Base-emitter on voltage              | I <sub>C</sub> =7A ; V <sub>CE</sub> =4V           |   |      | 3.0        | V    |   |
| I <sub>CEO</sub>      | Collector cut-off current            | 2N6288   | V <sub>CE</sub> =20V; I <sub>B</sub> =0   |      | 1.0        | mA   |   |
|                       |                                      | 2N6290   | V <sub>CE</sub> =40V; I <sub>B</sub> =0   |      |            |      |   |
|                       |                                      | 2N6292   | V <sub>CE</sub> =60V; I <sub>B</sub> =0   |      |            |      |   |
| I <sub>CEx</sub>      | Collector cut-off current            | 2N6288   | V <sub>CE</sub> =40V; V <sub>BE</sub> =-1.5V<br>V <sub>CE</sub> =30V; V <sub>BE</sub> =-1.5V, T <sub>C</sub> =125°C |      | 0.1<br>2.0 | mA   |   |
|                       |                                      | 2N6290   | V <sub>CE</sub> =60V; V <sub>BE</sub> =-1.5V<br>V <sub>CE</sub> =50V; V <sub>BE</sub> =-1.5V, T <sub>C</sub> =125°C |      | 0.1<br>2.0 |      |   |
|                       |                                      | 2N6292   | V <sub>CE</sub> =80V; V <sub>BE</sub> =-1.5V<br>V <sub>CE</sub> =70V; V <sub>BE</sub> =-1.5V, T <sub>C</sub> =125°C |      | 0.1<br>2.0 |      |   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0             |   |      | 1.0        | mA   |   |
| h <sub>FE-1</sub>     | DC current gain                      | 2N6288   | I <sub>C</sub> =3A ; V <sub>CE</sub> =4V  | 30   | 150        |      |   |
|                       |                                      | 2N6290   | I <sub>C</sub> =2.5A ; V <sub>CE</sub> =4V  |      |            |      |   |
|                       |                                      | 2N6292   | I <sub>C</sub> =2A ; V <sub>CE</sub> =4V  |      |            |      |   |
| h <sub>FE-2</sub>     | DC current gain                      | I <sub>C</sub> =7A ; V <sub>CE</sub> =4V           | 2.3   |      |            |      |   |
| f <sub>T</sub>        | Transition frequency                 | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =4V; f=1MHz | 2.5   |      |            | MHz  |   |

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PACKAGE OUTLINE

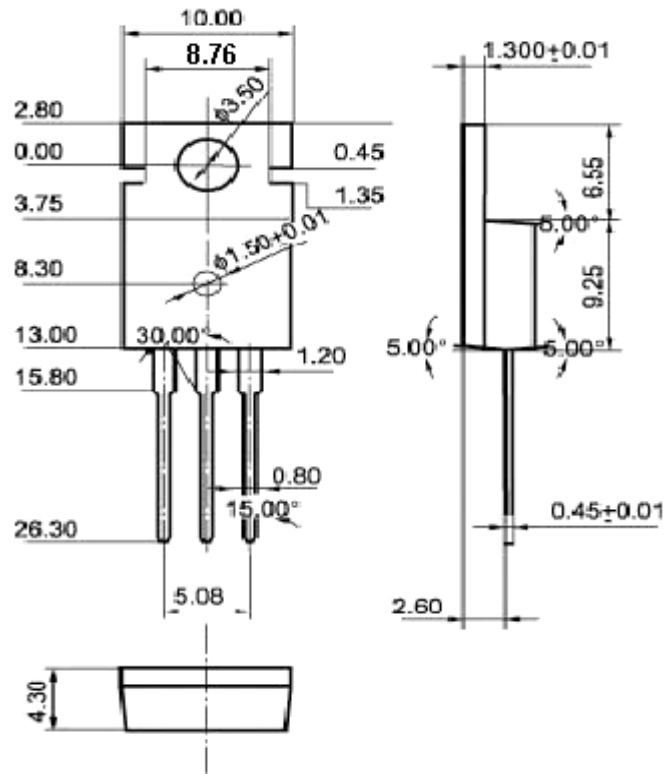


Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)