

## Silicon NPN Power Transistors

## 2SD1772 2SD1772A

## DESCRIPTION

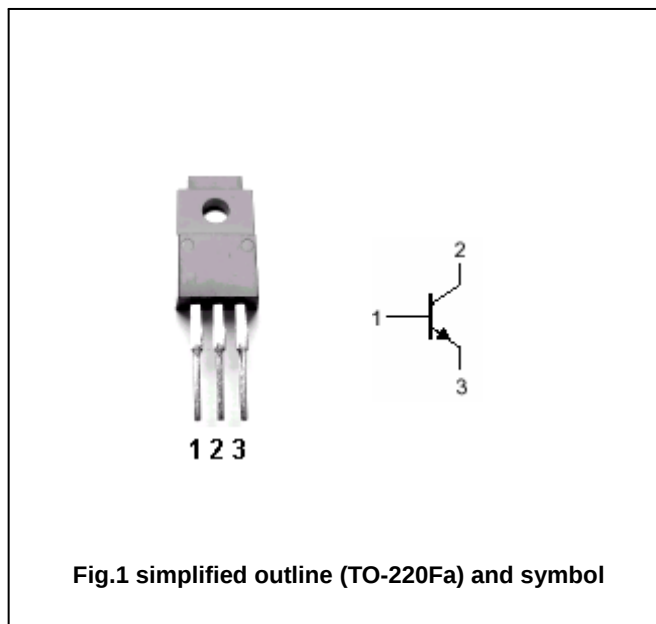
- With TO-220Fa package
- Complement to type 2SB1192/1192A
- Large collector power dissipation

## APPLICATIONS

- For power amplification
- For TV vertical deflection output

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Base        |
| 2   | Collector   |
| 3   | Emitter     |



## ABSOLUTE MAXIMUM RATINGS AT Ta=25

| SYMBOL    | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|-----------|-----------------------------|----------------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter         | 200     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | 2SD1772<br>Open base | 150     | V    |
|           |                             | 2SD1772A             | 180     |      |
| $V_{EBO}$ | Emitter-base voltage        | Open collector       | 6       | V    |
| $I_C$     | Collector current (DC)      |                      | 1       | A    |
| $I_{CM}$  | Collector current-peak      |                      | 2       | A    |
| $P_C$     | Collector power dissipation | $T_C=25$             | 25      | W    |
|           |                             | $T_a=25$             | 2       |      |
| $T_j$     | Junction temperature        |                      | 150     |      |
| $T_{stg}$ | Storage temperature         |                      | -55~150 |      |

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## CHARACTERISTICS

Tj=25 unless otherwise specified

| SYMBOL        | PARAMETER                            |          | CONDITIONS                      | MIN | TYP. | MAX | UNIT    |
|---------------|--------------------------------------|----------|---------------------------------|-----|------|-----|---------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | 2SD1772  | $I_C=5mA, I_B=0$                | 150 |      |     | V       |
|               |                                      | 2SD1772A |                                 | 180 |      |     |         |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       |          | $I_E=0.5mA, I_C=0$              | 6   |      |     | V       |
| $V_{CEsat}$   | Collector-emitter saturation voltage |          | $I_C=500mA; I_B=50mA$           |     |      | 1.0 | V       |
| $V_{BE}$      | Base-emitter on voltage              |          | $I_C=300mA; V_{CE}=10V$         |     |      | 1.0 | V       |
| $I_{CBO}$     | Collector cut-off current            |          | $V_{CB}=200V; I_E=0$            |     |      | 50  | $\mu A$ |
| $I_{EBO}$     | Emitter cut-off current              |          | $V_{EB}=4V; I_C=0$              |     |      | 50  | $\mu A$ |
| $h_{FE-1}$    | DC current gain                      |          | $I_C=100mA; V_{CE}=10V$         | 60  |      | 240 |         |
| $h_{FE-2}$    | DC current gain                      |          | $I_C=300mA; V_{CE}=10V$         | 50  |      |     |         |
| $C_{OB}$      | Output capacitance                   |          | $I_E=0; V_{CB}=10V; f=1MHz$     |     | 27   |     | pF      |
| $f_T$         | Transition frequency                 |          | $I_C=100mA; V_{CE}=10V; f=1MHz$ |     | 20   |     | MHz     |

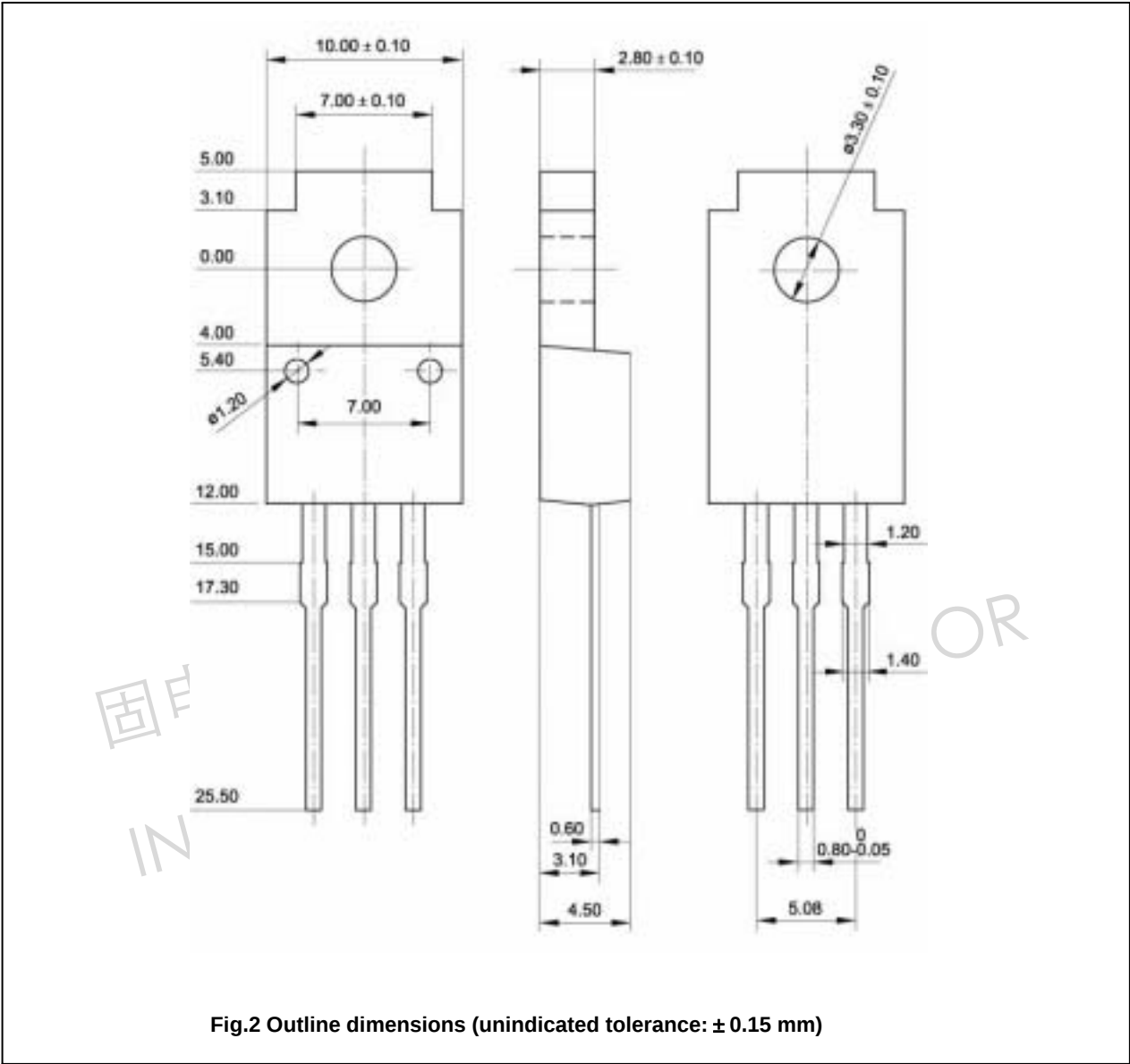
◆  $h_{FE-1}$  Classifications

| Q      | P       |
|--------|---------|
| 60-140 | 100-240 |

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PACKAGE OUTLINE



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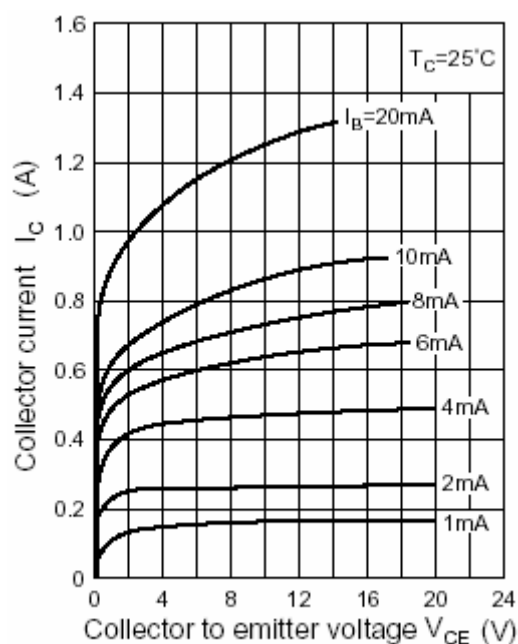


Fig.3 Static Characteristic

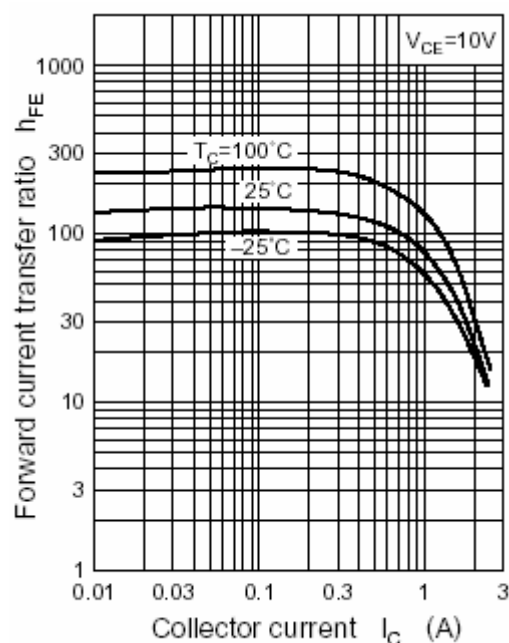


Fig.4 DC current Gain

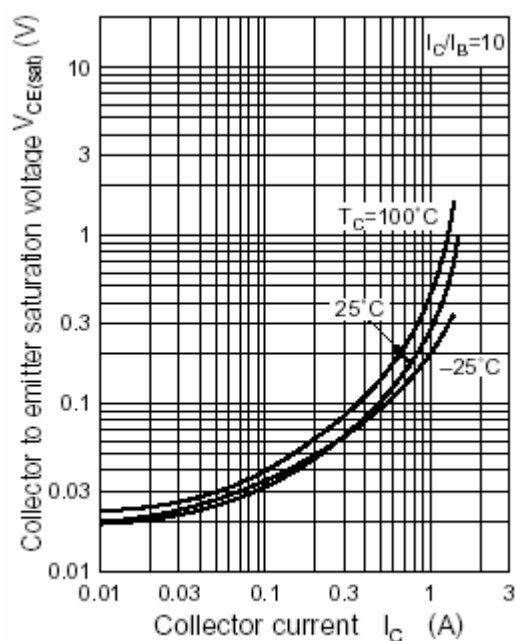


Fig.5 Collector-Emitter Saturation Voltage

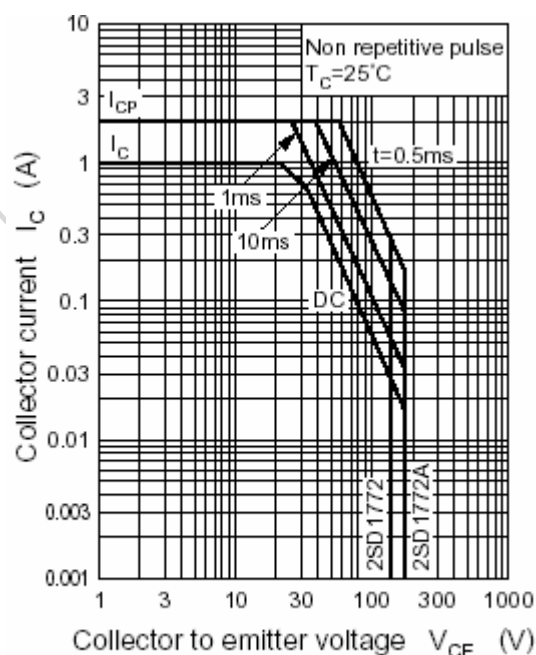


Fig.6 Safe Operating Area