

## Silicon NPN Power Transistors

2SC4689

## DESCRIPTION

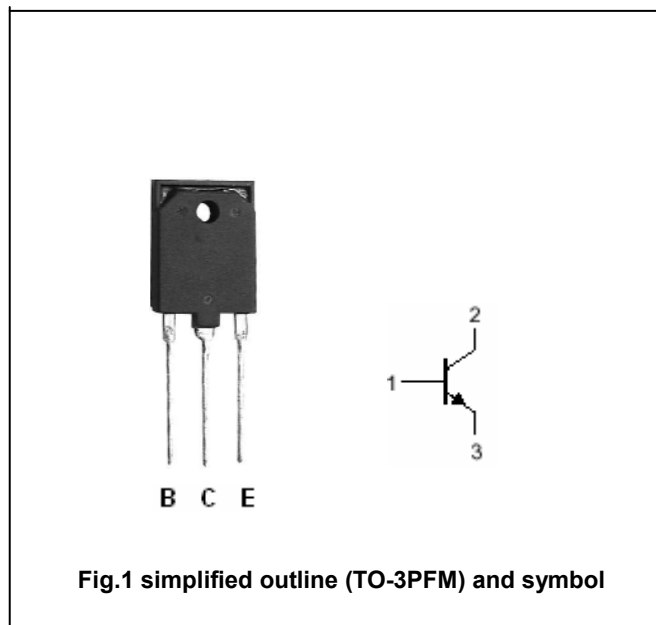
- With TO-3PFM package
- Complementary to 2SA1804
- Recommend for 70W high fidelity audio frequency amplifier output stage

## APPLICATIONS

- Power amplifier applications

## PINNING

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

Absolute maximum ratings( $T_a = \square$ )

| SYMBOL    | PARAMETER                   | CONDITIONS        | VALUE   | UNIT      |
|-----------|-----------------------------|-------------------|---------|-----------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter      | 120     | V         |
| $V_{CEO}$ | Collector-emitter voltage   | Open base         | 120     | V         |
| $V_{EBO}$ | Emitter-base voltage        | Open collector    | 5       | V         |
| $I_C$     | Collector current           |                   | 8       | A         |
| $I_{CP}$  | Collector current-peak      |                   | 16      | A         |
| $I_B$     | Base current                |                   | 0.8     | A         |
| $P_C$     | Collector power dissipation | $T_C = 25\square$ | 70      | W         |
| $T_j$     | Junction temperature        |                   | 150     | $\square$ |
| $T_{stg}$ | Storage temperature         |                   | -55~150 | $\square$ |

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

| SYMBOL        | PARAMETER                            | CONDITIONS                        | MIN | TYP. | MAX | UNIT    |
|---------------|--------------------------------------|-----------------------------------|-----|------|-----|---------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=50mA$ ; $I_B=0$              | 120 |      |     | V       |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=120V$ ; $I_E=0$           |     |      | 5   | $\mu A$ |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=5V$ ; $I_C=0$             |     |      | 5   | $\mu A$ |
| $h_{FE-1}$    | DC current gain                      | $I_C=1A$ ; $V_{CE}=5V$            | 55  |      | 160 |         |
| $h_{FE-2}$    | DC current gain                      | $I_C=4A$ ; $V_{CE}=5V$            | 35  | 75   |     |         |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_C=6A$ ; $I_B=0.6A$             |     | 0.35 | 2   | V       |
| $V_{BE}$      | Base-emitter voltage                 | $I_C=4A$ ; $V_{CE}=5V$            |     | 0.95 | 1.5 | V       |
| $f_T$         | Transition frequency                 | $I_C=1A$ ; $V_{CE}=5V$            |     | 30   |     | MHz     |
| $C_{ob}$      | Collector output capacitance         | $I_E=0$ ; $V_{CB}=10V$ ; $f=1MHz$ |     | 190  |     | pF      |

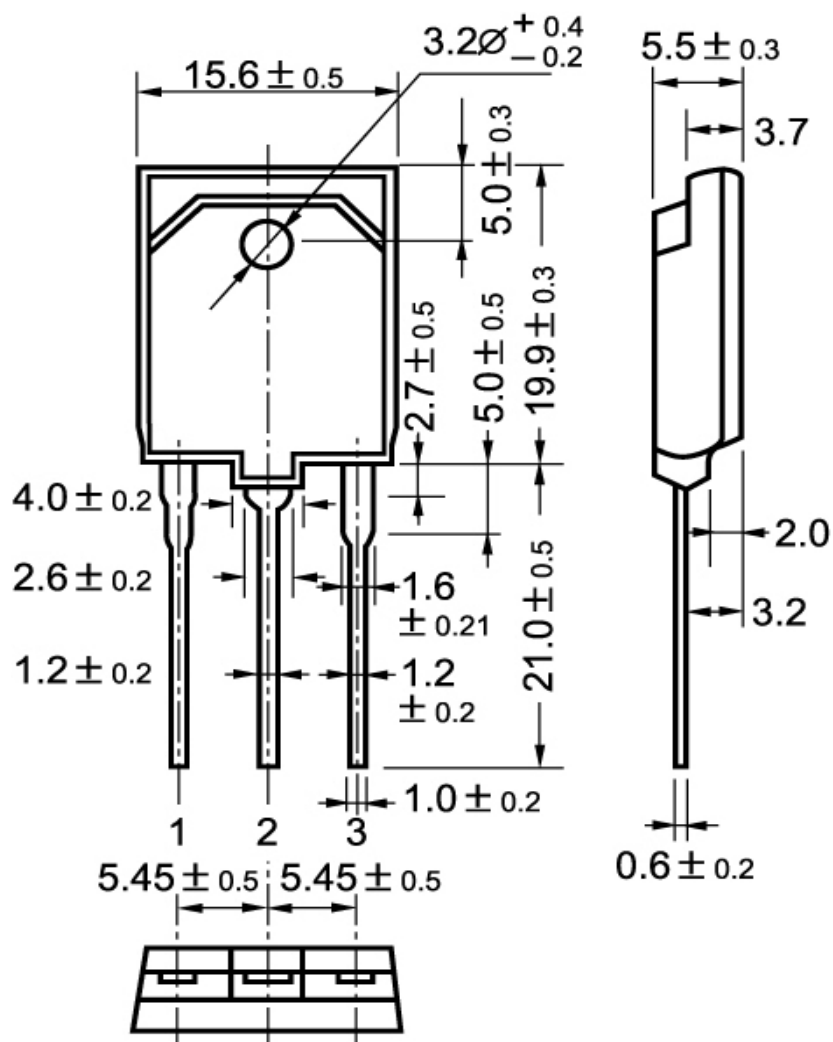
◆  $h_{FE-1}$  classifications

| R      | O      |
|--------|--------|
| 55-110 | 80-160 |

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## PACKAGE OUTLINE



### Fig.2 outline dimensions

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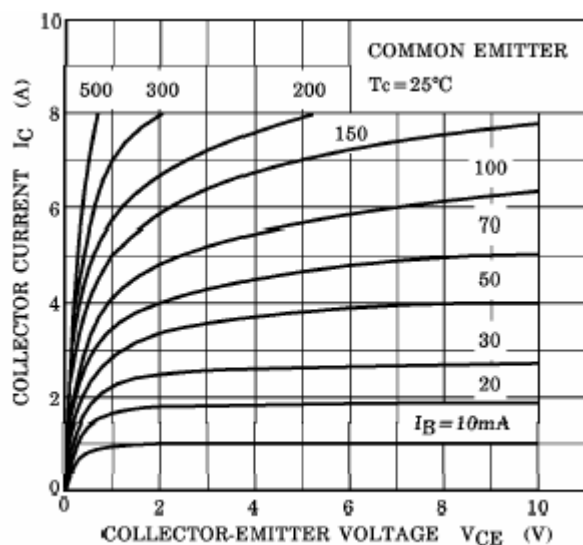


Fig.3 Static Characteristic

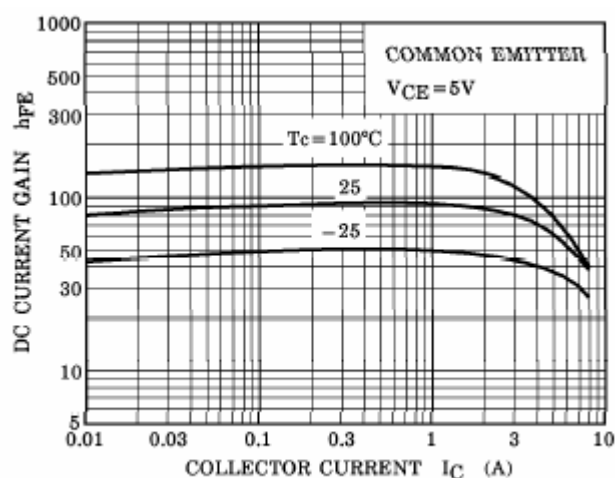


Fig.4 DC current Gain

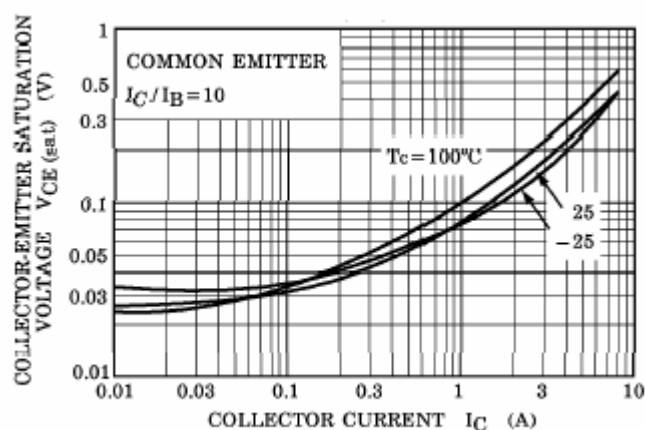


Fig.5 Collector-Emitter Saturation Voltage

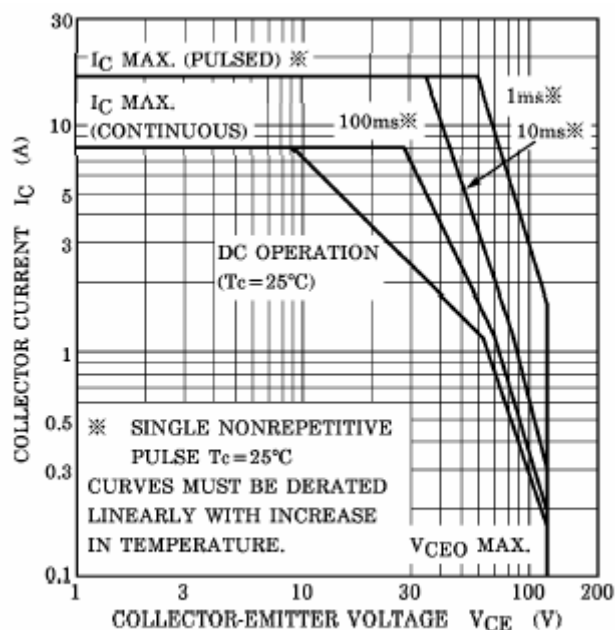


Fig.6 Safe Operating Area