

## Silicon PNP Power Transistors

## 2SA985 2SA985A

## DESCRIPTION

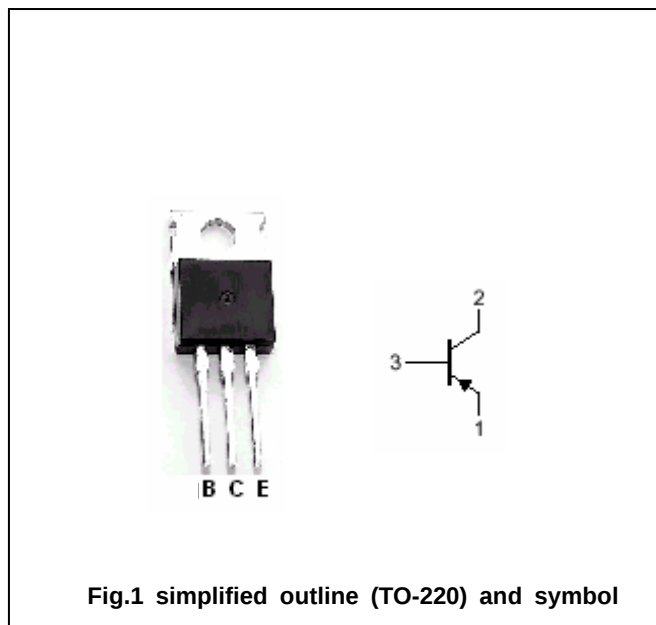
- With TO-220 package
- Complement to type 2SC2275/2275A
- High breakdown voltage

## APPLICATIONS

- For low frequency and high frequency power amplifier applicatons

## PINNING

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

Absolute maximum ratings( $T_a=25^{\circ}\text{C}$ )

| SYMBOL    | PARAMETER                 |                          | CONDITIONS     | VALUE   | UNIT               |
|-----------|---------------------------|--------------------------|----------------|---------|--------------------|
| $V_{CBO}$ | Collector-base voltage    | 2SA985                   | Open emitter   | -120    | V                  |
|           |                           | 2SA985A                  |                | -150    |                    |
| $V_{CEO}$ | Collector-emitter voltage | 2SA985                   | Open base      | -120    | V                  |
|           |                           | 2SA985A                  |                | -150    |                    |
| $V_{EBO}$ | Emitter-base voltage      |                          | Open collector | -5      | V                  |
| $I_C$     | Collector current         |                          |                | -1.5    | A                  |
| $I_{CM}$  | Collector current-peak    |                          |                | -3.0    | A                  |
| $I_B$     | Base current              |                          |                | -0.3    | A                  |
| $P_T$     | Total power dissipation   | $T_a=25^{\circ}\text{C}$ |                | 1.5     | W                  |
|           |                           | $T_c=25^{\circ}\text{C}$ |                | 25      |                    |
| $T_j$     | Junction temperature      |                          |                | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage temperature       |                          |                | -55~150 | $^{\circ}\text{C}$ |

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## CHARACTERISTICS

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

| SYMBOL               | PARAMETER                            |         | CONDITIONS                                       | MIN  | TYP. | MAX  | UNIT |
|----------------------|--------------------------------------|---------|--------------------------------------------------|------|------|------|------|
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | 2SA985  | I <sub>C</sub> =-25mA, I <sub>B</sub> =0         | -120 |      |      | V    |
|                      |                                      | 2SA985A |                                                  | -150 |      |      |      |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage |         | I <sub>C</sub> =-1A; I <sub>B</sub> =-0.1A       |      | -0.3 | -2.0 | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      |         | I <sub>C</sub> =-1A; I <sub>B</sub> =-0.1A       |      | -0.9 | -1.5 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            |         | V <sub>CB</sub> =-120V; I <sub>E</sub> =0        |      |      | -1.0 | μA   |
| I <sub>EBO</sub>     | Emitter cut-off current              |         | V <sub>EB</sub> =-3V; I <sub>C</sub> =0          |      |      | -1.0 | μA   |
| h <sub>FE-1</sub>    | DC current gain                      |         | I <sub>C</sub> =-5mA; V <sub>CE</sub> =-5V       | 35   |      |      |      |
| h <sub>FE-2</sub>    | DC current gain                      |         | I <sub>C</sub> =-0.3A; V <sub>CE</sub> =-5V      | 60   | 150  | 320  |      |
| C <sub>OB</sub>      | Output capacitance                   |         | I <sub>E</sub> =0; V <sub>CB</sub> =-10V, f=1MHz |      | 29   |      | pF   |
| f <sub>T</sub>       | Transition frequency                 |         | I <sub>C</sub> =-0.2A; V <sub>CE</sub> =-5V      |      | 180  |      | MHz  |

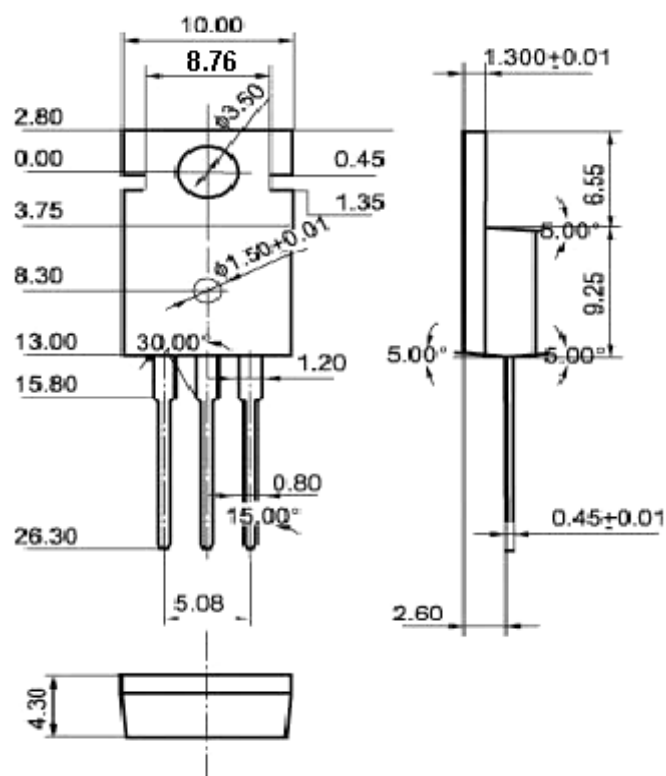
◆ h<sub>FE-2</sub> Classifications

| R      | Q       | P       |
|--------|---------|---------|
| 60-120 | 100-200 | 160-320 |

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## PACKAGE OUTLINE

Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.10$  mm)