

## Silicon PNP Power Transistors

2SA746

## DESCRIPTION

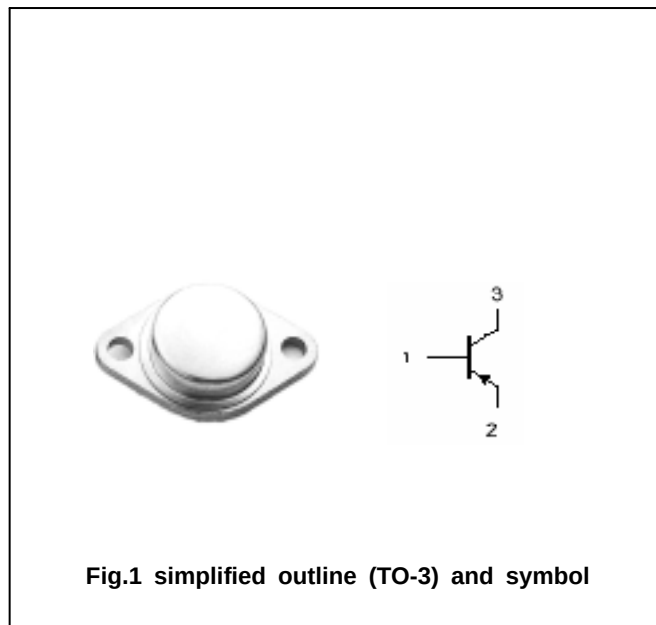
- With TO-3 package
- Wide area of safe operation
- Complement to type 2SC1115

## APPLICATIONS

- For audio and general purpose applications

## PINNING(see Fig.2)

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

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

| SYMBOL    | PARAMETER                   | CONDITIONS               | VALUE   | UNIT             |
|-----------|-----------------------------|--------------------------|---------|------------------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter             | -80     | V                |
| $V_{CEO}$ | Collector-emitter voltage   | Open base                | -80     | V                |
| $V_{EBO}$ | Emitter-base voltage        | Open collector           | -6      | V                |
| $I_C$     | Collector current           |                          | -10     | A                |
| $I_B$     | Base current                |                          | -4      | A                |
| $P_C$     | Collector power dissipation | $T_C = 25^\circ\text{C}$ | 100     | W                |
| $T_j$     | Junction temperature        |                          | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage temperature         |                          | -65~150 | $^\circ\text{C}$ |

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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  | I <sub>C</sub> =-50mA ; I <sub>B</sub> =0     | -80 |      |      | V    |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       | I <sub>E</sub> =-1mA ; I <sub>C</sub> =0      | -6  |      |      | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A    |     |      | -2.0 | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      | I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A    |     |      | -2.5 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =-80V; I <sub>E</sub> =0      |     |      | -0.1 | mA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-6V; I <sub>C</sub> =0       |     |      | -1.0 | mA   |
| h <sub>FE</sub>      | DC current gain                      | I <sub>C</sub> =-3A ; V <sub>CE</sub> =-4V    | 30  |      |      |      |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =-0.5A ; V <sub>CE</sub> =-12V |     | 15   |      | MHz  |

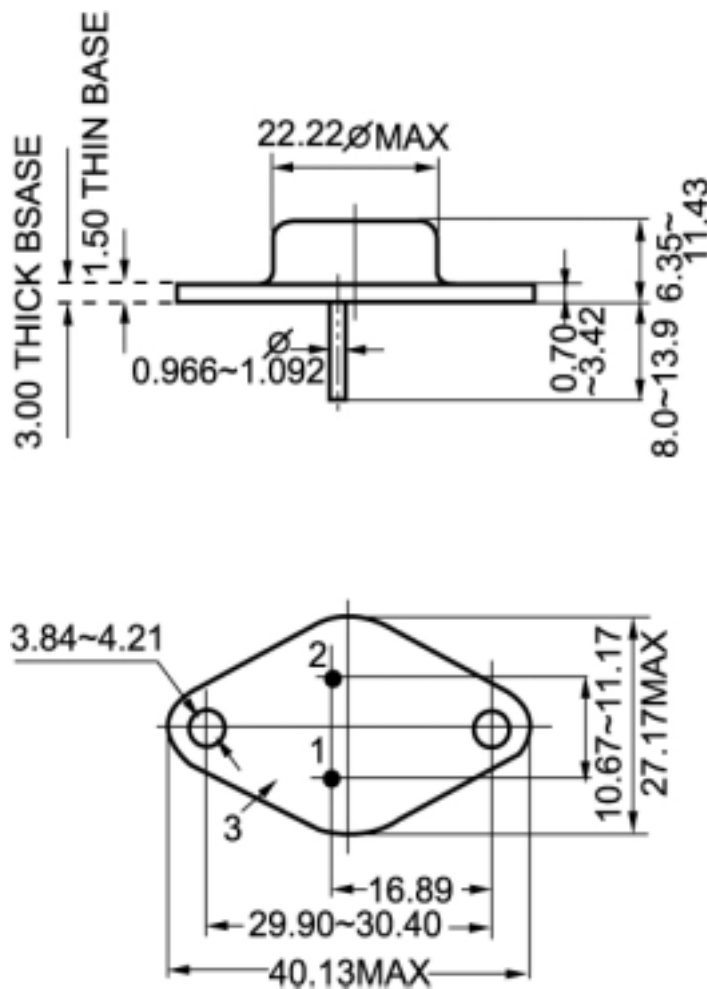
## Switching times

|                  |              |                                                                                                                  |  |     |  |    |
|------------------|--------------|------------------------------------------------------------------------------------------------------------------|--|-----|--|----|
| t <sub>r</sub>   | Rise time    | V <sub>CC</sub> =-12V; R <sub>L</sub> =4Ω; I <sub>C</sub> =-3A<br>I <sub>B1</sub> =-200mA, I <sub>B2</sub> =50mA |  | 1.2 |  | μs |
| t <sub>stg</sub> | Storage time |                                                                                                                  |  | 3.3 |  | μs |
| t <sub>f</sub>   | Fall time    |                                                                                                                  |  | 0.8 |  | μs |

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## PACKAGE OUTLINE

Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )