

## Silicon PNP Power Transistors

2SA747

## DESCRIPTION

- With TO-3 package
- Wide area of safe operation
- Complement to type 2SC1116

## APPLICATIONS

- For audio and general purpose applications

## PINNING(see Fig.2)

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

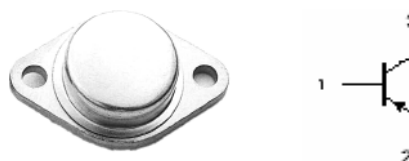


Fig.1 simplified outline (TO-3) and symbol

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     | -6      | V         |
| $I_C$     | Collector current           |                    | -10     | A         |
| $I_B$     | Base current                |                    | -4      | A         |
| $P_C$     | Collector power dissipation | $T_C = 25 \square$ | 100     | W         |
| $T_j$     | Junction temperature        |                    | 150     | $\square$ |
| $T_{stg}$ | Storage temperature         |                    | -65~150 | $\square$ |

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## CHARACTERISTICS

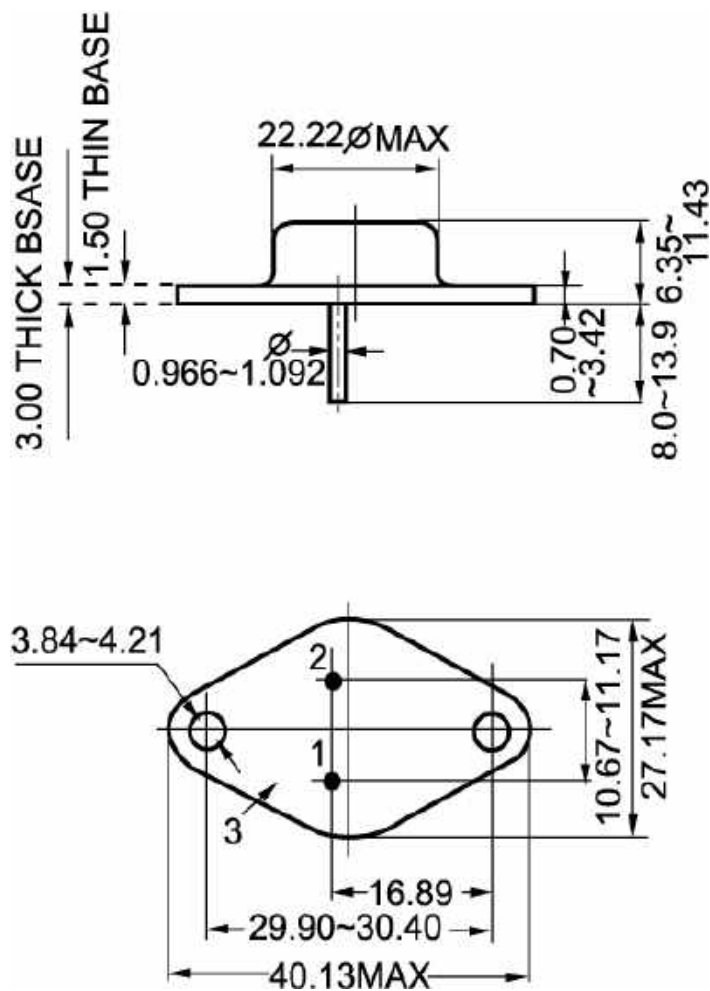
Tj=25°C unless otherwise specified

| SYMBOL        | PARAMETER                            | CONDITIONS                    | MIN  | TYP. | MAX  | UNIT |
|---------------|--------------------------------------|-------------------------------|------|------|------|------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C = -50mA ; I_B = 0$       | -120 |      |      | V    |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       | $I_E = -1mA ; I_C = 0$        | -6   |      |      | V    |
| $V_{CEsat}$   | Collector-emitter saturation voltage | $I_C = -5A ; I_B = -0.5A$     |      |      | -2.0 | V    |
| $V_{BEsat}$   | Base-emitter saturation voltage      | $I_C = -5A ; I_B = -0.5A$     |      |      | -2.5 | V    |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB} = -120V ; I_E = 0$    |      |      | -0.1 | mA   |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB} = -6V ; I_C = 0$      |      |      | -1.0 | mA   |
| $h_{FE}$      | DC current gain                      | $I_C = -3A ; V_{CE} = -4V$    | 30   |      |      |      |
| $f_T$         | Transition frequency                 | $I_C = -0.5A ; V_{CE} = -12V$ |      | 15   |      | MHz  |

## Switching times

|           |              |                                                                                 |  |     |  |         |
|-----------|--------------|---------------------------------------------------------------------------------|--|-----|--|---------|
| $t_r$     | Rise time    | $V_{CC} = -12V ; R_L = 4\Omega ; I_C = -3A$<br>$I_{B1} = -200mA, I_{B2} = 50mA$ |  | 1.2 |  | $\mu s$ |
| $t_{stg}$ | Storage time |                                                                                 |  | 3.3 |  | $\mu s$ |
| $t_f$     | Fall time    |                                                                                 |  | 0.8 |  | $\mu s$ |

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**Fig.2 outline dimensions (unindicated tolerance:±0.1mm)**