

## Silicon PNP Power Transistors

2SA1129

## DESCRIPTION

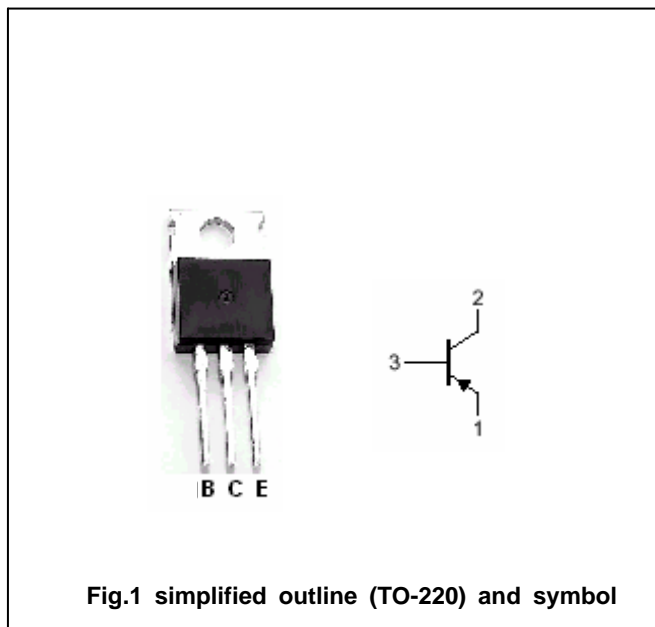
- With TO-220 package
- Low collector saturation voltage
- Large current capacity
- Complement to type 2SC2654

## APPLICATIONS

- For low-frequency power amplifiers and mid-speed switching applications

## 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      | Open emitter           | -30     | V                |
| $V_{CEO}$ | Collector-emitter voltage   | Open base              | -30     | V                |
| $V_{EBO}$ | Emitter-base voltage        | Open collector         | -7      | V                |
| $I_C$     | Collector current           |                        | -7      | A                |
| $I_{CM}$  | Collector current-peak      |                        | -15     | A                |
| $I_B$     | Base current                |                        | -3.5    | A                |
| $P_T$     | Collector power dissipation | $T_C=25^\circ\text{C}$ | 40      | W                |
|           |                             | $T_a=25^\circ\text{C}$ | 1.5     |                  |
| $T_j$     | 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  | I <sub>C</sub> =-10mA, I <sub>B</sub> =0   | -30 |      |      | V    |
| V <sub>CEsat-1</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =-3A; I <sub>B</sub> =-0.1A |     |      | -0.3 | V    |
| V <sub>CEsat-2</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A |     |      | -0.6 | V    |
| V <sub>BEsat-1</sub> | Base-emitter saturation voltage      | I <sub>C</sub> =-3A; I <sub>B</sub> =-0.1A |     |      | -1.5 | V    |
| V <sub>BEsat-2</sub> | Base-emitter saturation voltage      | I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A |     |      | -2.0 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =-30V; I <sub>E</sub> =0   |     |      | -10  | μ A  |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-5V; I <sub>C</sub> =0    |     |      | -10  | μ A  |
| h <sub>FE-1</sub>    | DC current gain                      | I <sub>C</sub> =-3A ; V <sub>CE</sub> =-1V | 40  |      | 200  |      |
| h <sub>FE-2</sub>    | DC current gain                      | I <sub>C</sub> =-5A ; V <sub>CE</sub> =-1V | 20  |      |      |      |

Switching times resistive load

|                  |              |   |  |  |     |     |
|------------------|--------------|---|--|--|-----|-----|
| t <sub>on</sub>  | Turn-on time | I <sub>C</sub> =-5.0A I <sub>B1</sub> =- I <sub>B2</sub> =-0.5A<br>R <sub>L</sub> =4 Ω ;V <sub>CC</sub> =-20V |  |  | 1.0 | μ s |
| t <sub>stg</sub> | Storage time |   |  |  | 2.5 | μ s |
| t <sub>f</sub>   | Fall time    |   |  |  | 1.0 | μ s |

◆ h<sub>FE-1</sub> Classifications

| M     | L      | K       |
|-------|--------|---------|
| 40-80 | 60-120 | 100-200 |

