

## Silicon PNP Power Transistors

## 2SA1469

## DESCRIPTION

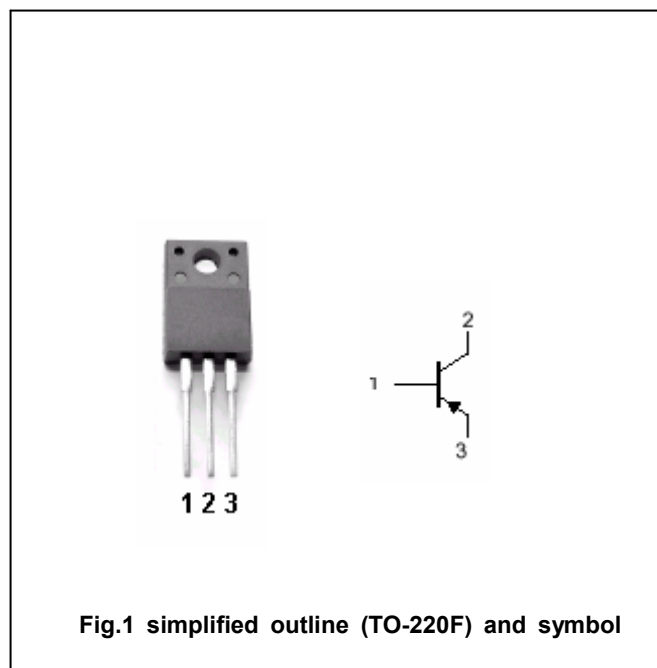
- With TO-220F package
- Complement to type 2SC3746
- Low saturation voltage
- Excellent current dependence of  $h_{FE}$
- Short switching time

## APPLICATIONS

- Various inductance of lamp drivers for electrical equipment
- Inverters ,converters
- Power amplification
- Switching regulator ,driver

## PINNING

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

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

| SYMBOL    | PARAMETER                   | CONDITIONS             | VALUE   | UNIT             |
|-----------|-----------------------------|------------------------|---------|------------------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter           | -80     | V                |
| $V_{CEO}$ | Collector-emitter voltage   | Open base              | -60     | V                |
| $V_{EBO}$ | Emitter-base voltage        | Open collector         | -5      | V                |
| $I_C$     | Collector current           |                        | -5      | A                |
| $I_{CM}$  | Collector current-peak      |                        | -7      | A                |
| $P_C$     | Collector power dissipation | $T_a=25^\circ\text{C}$ | 2       | W                |
|           |                             | $T_C=25^\circ\text{C}$ | 20      |                  |
| $T_j$     | 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℃ unless otherwise specified

| SYMBOL               | PARAMETER                            | CONDITIONS                                    | MIN | TYP. | MAX  | UNIT |
|----------------------|--------------------------------------|-----------------------------------------------|-----|------|------|------|
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | I <sub>C</sub> =-1mA ; R <sub>BE</sub> =∞     | -60 |      |      | V    |
| V <sub>(BR)CBO</sub> | Collector-base breakdown voltage     | I <sub>C</sub> =-10mA ; I <sub>E</sub> =0     | -80 |      |      | V    |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       | I <sub>E</sub> =-10mA ; I <sub>C</sub> =0     | -5  |      |      | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =-2.5A I <sub>B</sub> =-0.125A |     |      | -0.4 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =-40V I <sub>E</sub> =0       |     |      | -0.1 | mA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-4V ; I <sub>C</sub> =0      |     |      | -0.1 | mA   |
| h <sub>FE</sub>      | DC current gain                      | I <sub>C</sub> =-1A ; V <sub>CE</sub> =-2V    | 70  |      | 280  |      |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =-1A ; V <sub>CE</sub> =-5V    |     | 100  |      | MHz  |

## Switching times

|                 |              |                                                                                                                |  |     |  |    |
|-----------------|--------------|----------------------------------------------------------------------------------------------------------------|--|-----|--|----|
| t <sub>on</sub> | Turn-on time | I <sub>C</sub> =-2.0A ; I <sub>B1</sub> =-I <sub>B2</sub> =-0.1A<br>V <sub>CC</sub> =20V , R <sub>L</sub> =10Ω |  | 0.1 |  | μs |
| t <sub>s</sub>  | Storage time |                                                                                                                |  | 0.5 |  | μs |
| t <sub>f</sub>  | Fall time    |                                                                                                                |  | 0.1 |  | μs |

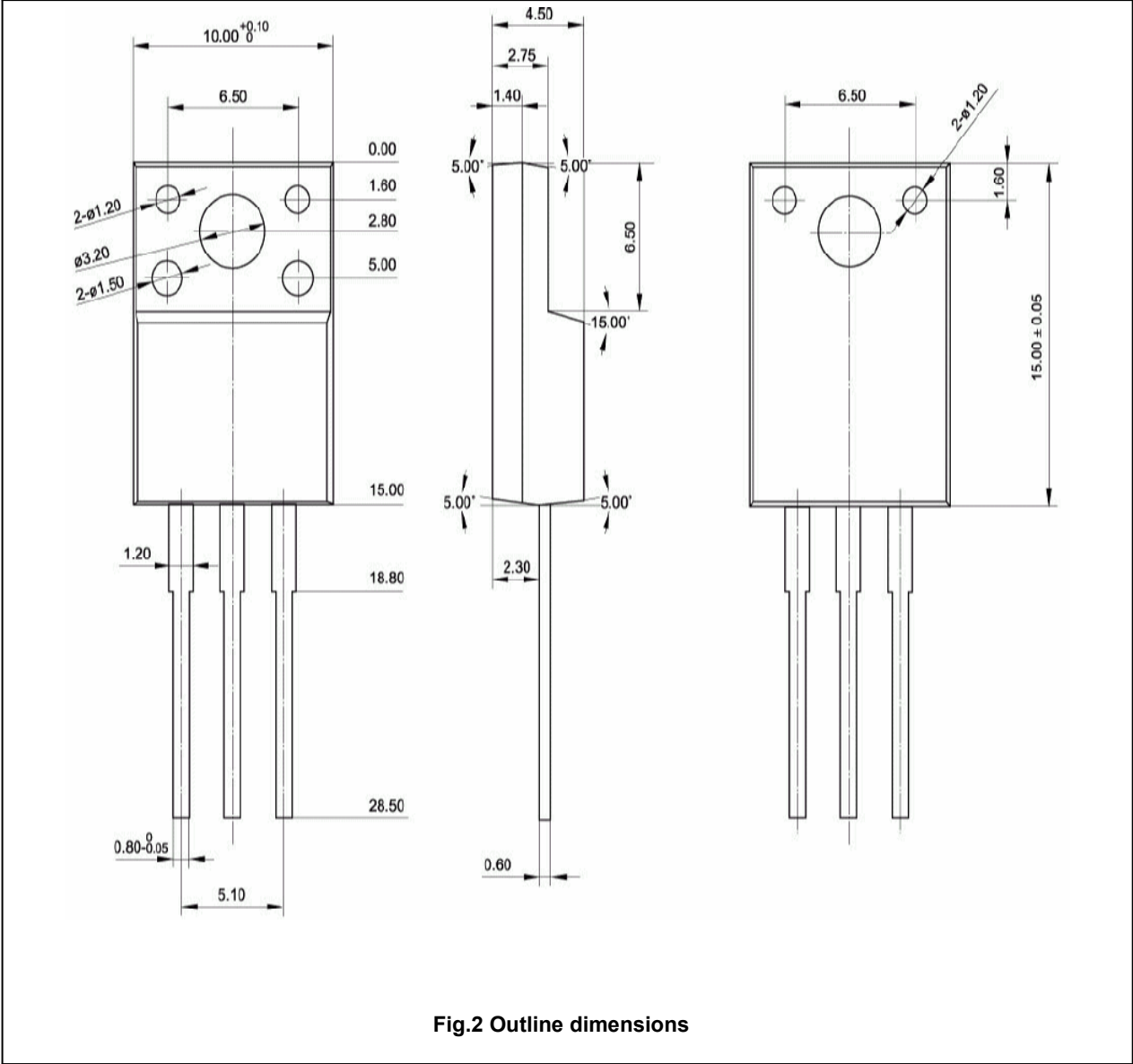
◆ h<sub>FE</sub> Classifications

| Q      | R       | S       |
|--------|---------|---------|
| 70-140 | 100-200 | 140-280 |

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PACKAGE OUTLINE



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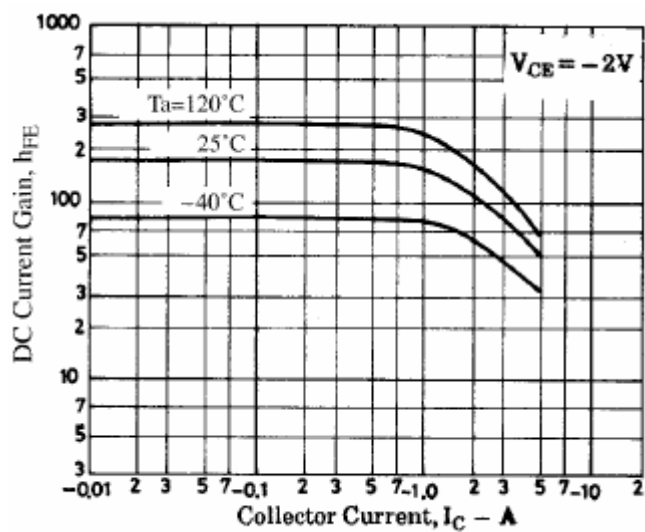


Fig.3 DC current Gain

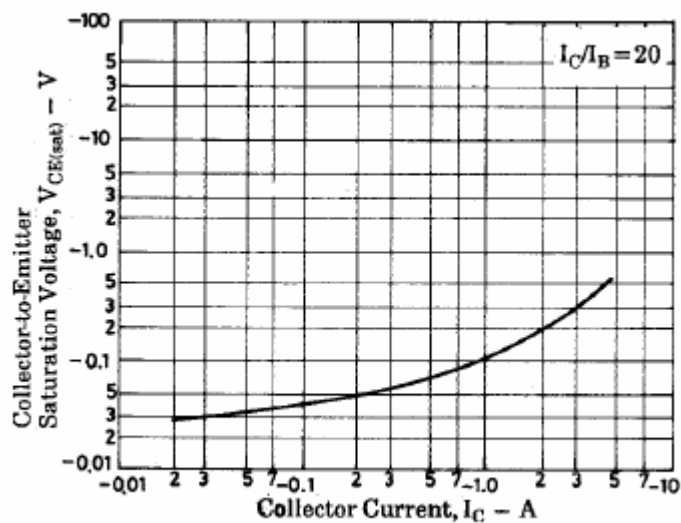


Fig.4 Collector-Emitter Saturation Voltage

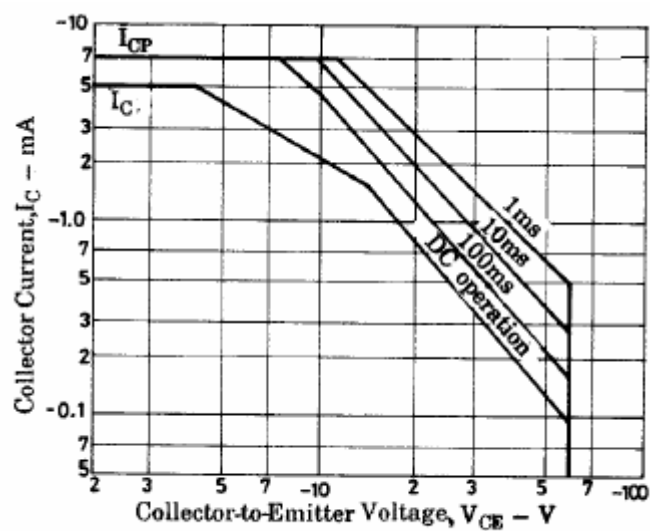


Fig.5 Safe Operating Area