

Silicon NPN Power Transistors

2SC4764

DESCRIPTION

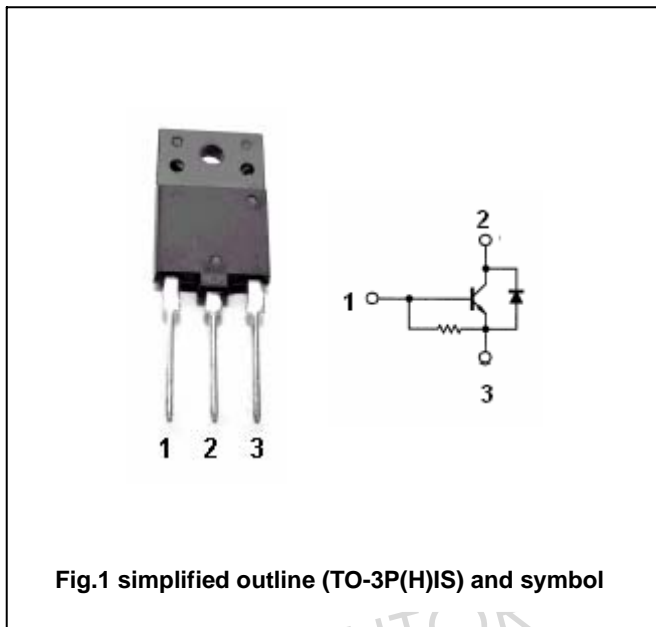
- With TO-3P(H)IS package
- High speed
- High voltage
- Low saturation voltage
- Built-in damper diode

APPLICATIONS

- Horizontal deflection output for medium resolution display

PINNING

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



Absolute maximum ratings(Ta=25 )

| SYMBOL    | PARAMETER                   | CONDITIONS     | VALUE    | UNIT |
|-----------|-----------------------------|----------------|----------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter   | 1500     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base      | 600      | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector | 5        | V    |
| $I_C$     | Collector current           |                | $\pm 6$  | A    |
| $I_{CM}$  | Collector current-Peak      |                | $\pm 12$ | A    |
| $I_B$     | Base current                |                | 3        | A    |
| $P_C$     | Collector power dissipation | $T_C=25$       | 50       | W    |
| $T_j$     | Junction temperature        |                | 150      |      |
| $T_{stg}$ | Storage temperature         |                | -55~150  |      |

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## CHARACTERISTICS

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

| SYMBOL                         | PARAMETER                            | CONDITIONS   | MIN | TYP. | MAX | UNIT |
|--------------------------------|--------------------------------------|--|-----|------|-----|------|
| V <sub>(BR)EBO</sub>           | Emitter-base breakdown voltage       | I <sub>E</sub> =300mA ; I <sub>C</sub> =0  | 5   |      |     | V    |
| V <sub>CEsat</sub>             | Collector-emitter saturation voltage | I <sub>C</sub> =4A; I <sub>B</sub> =0.8A   |     |      | 5   | V    |
| V <sub>BEsat</sub>             | Base-emitter saturation voltage      | I <sub>C</sub> =4A; I <sub>B</sub> =0.8A   |     |      | 1.5 | V    |
| I <sub>CBO</sub>               | Collector cut-off current            | V <sub>CB</sub> =1500V; I <sub>E</sub> =0  |     |      | 1   | mA   |
| I <sub>EBO</sub>               | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0   | 83  |      | 250 | mA   |
| h <sub>FE-1</sub>              | DC current gain                      | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V   | 8   | 12   |     |      |
| h <sub>FE-2</sub>              | DC current gain                      | I <sub>C</sub> =4A ; V <sub>CE</sub> =5V   | 5   |      | 9   |      |
| C <sub>ob</sub>                | Collector output capacitance         | I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz   |     | 170  |     | pF   |
| V <sub>F</sub>                 | Diode forward voltage                | I <sub>F</sub> =4A   |     | 1.2  | 1.8 | V    |
| f <sub>T</sub>                 | Transition frequency                 | I <sub>C</sub> =0.1A ; V <sub>CE</sub> =10V  | 1   | 3    |     | MHz  |
| Switching times resistive load |                                      |  |     |      |     |      |
| t <sub>s</sub>                 | Storage time                         | I <sub>CP</sub> =4A; I <sub>B1</sub> =0.8A<br>I <sub>B2</sub> =-1.6A; R <sub>L</sub> =51 |     | 1.6  | 2.5 | μs   |
| t <sub>f</sub>                 | Fall time                            |  |     | 0.1  | 0.2 | μs   |



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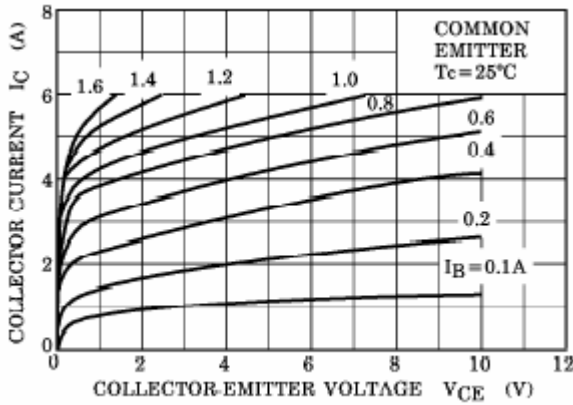


Fig.3 Static Characteristic

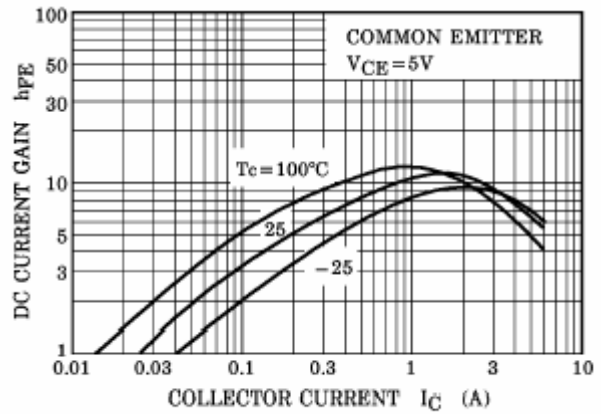


Fig.4 DC current Gain

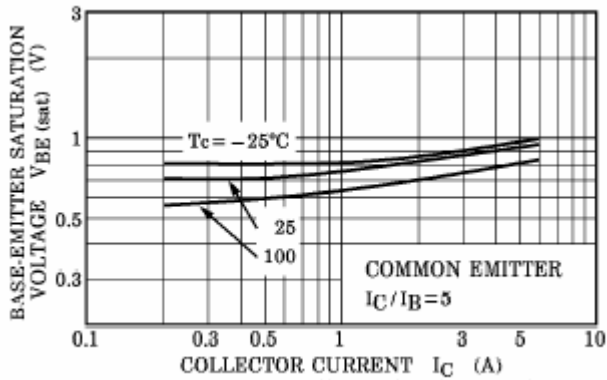


Fig.5 Base-Emitter Saturation Voltage

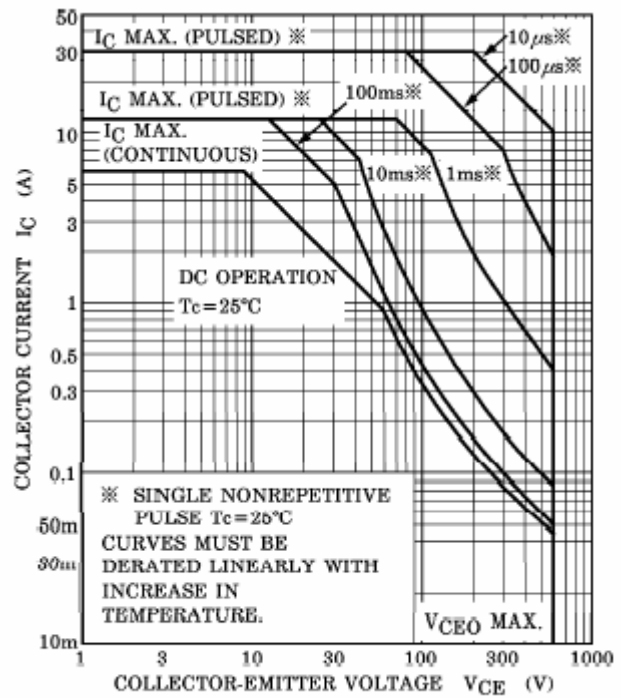


Fig.6 Safe Operating Area