

**Silicon PNP Power Transistors**

**2SA744/745/745A**

**DESCRIPTION**

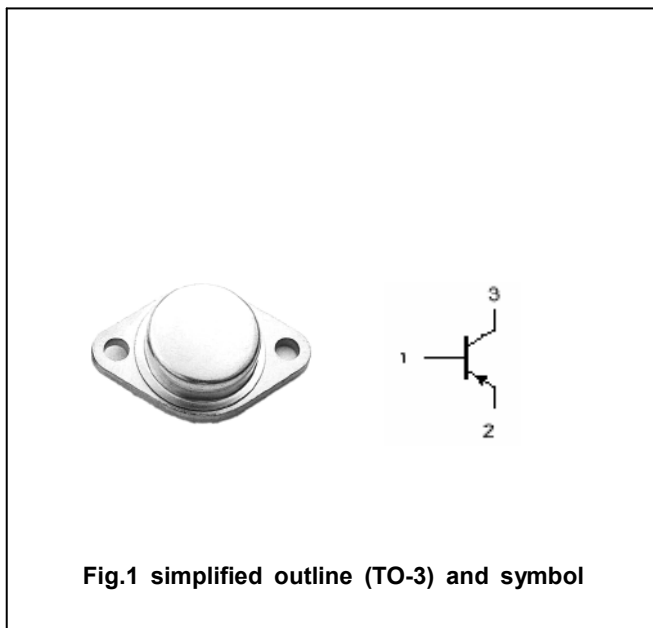
- With TO-3 package
- Complement to type 2SC1402/1403/1403A

**APPLICATIONS**

- For power switching 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(Ta=□)**

| SYMBOL           | PARAMETER                   | CONDITIONS          | VALUE   | UNIT |
|------------------|-----------------------------|---------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | 2SA744              | -80     | V    |
|                  |                             | 2SA745              | -100    |      |
|                  |                             | 2SA745A             | -120    |      |
| V <sub>CEO</sub> | Collector-emitter voltage   | 2SA744              | -80     | V    |
|                  |                             | 2SA745              | -100    |      |
|                  |                             | 2SA745A             | -120    |      |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector      | -6      | V    |
| I <sub>C</sub>   | Collector current           |                     | -8      | A    |
| I <sub>B</sub>   | Base current                |                     | -3      | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25□ | 70      | W    |
| T <sub>j</sub>   | Junction temperature        |                     | 150     | □    |
| T <sub>stg</sub> | Storage temperature         |                     | -65~150 | □    |

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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  | 2SA744                                       | -80                                       |      |      | V    |    |
|                      |                                      | 2SA745                                       | -100                                      |      |      |      |    |
|                      |                                      | 2SA745A                                      | -120                                      |      |      |      |    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =-3A; I <sub>B</sub> =-0.3A   |   |      | -1.5 | V    |    |
| I <sub>CBO</sub>     | Collector cut-off current            | 2SA744                                       | V <sub>CB</sub> =-80V; I <sub>E</sub> =0  |      |      | -1.0 | mA |
|                      |                                      | 2SA745                                       | V <sub>CB</sub> =-100V; I <sub>E</sub> =0 |      |      |      |    |
|                      |                                      | 2SA745A                                      | V <sub>CB</sub> =-120V; I <sub>E</sub> =0 |      |      |      |    |
| 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    | I <sub>C</sub> =-3A; R <sub>L</sub> =4Ω<br>I <sub>B1</sub> =-0.2A; I <sub>B2</sub> =0.1A<br>V <sub>CC</sub> =-12V |  | 1.2  |  | μs |
| t <sub>s</sub> | Storage time |   |  | 2.0  |  | μs |
| t <sub>f</sub> | Fall time    |   |  | 0.55 |  | μs |

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PACKAGE OUTLINE



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