

# isc Silicon PNP Power Transistor

2SA814

#### **DESCRIPTION**

- · Collector-Emitter Breakdown Voltage-
  - $V_{(BR)CEO} = -120(V)(Min.)$
- Complement to Type 2SC1624
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



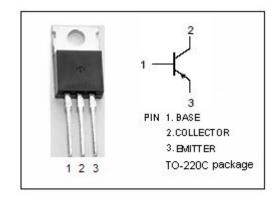
### **APPLICATIONS**

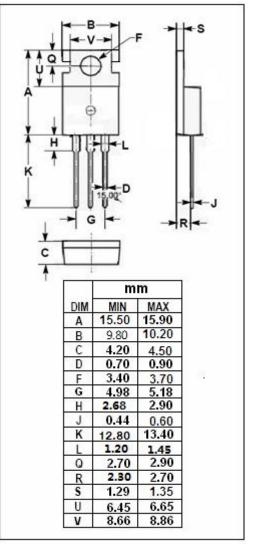
- · Medium power amplifier applications.
- · Driver stage amplifier applications.



## ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

| SYMBOL           | PARAMETER                                     | VALUE      | UNIT       |
|------------------|---|------------|------------|
| V <sub>CBO</sub> | Collector-Base Voltage                        | -120       | V          |
| V <sub>CEO</sub> | Collector-Emitter Voltage                     | -120       | V          |
| V <sub>EBO</sub> | Emitter-Base Voltage                          | -5         | V          |
| Ic               | Collector Current-Continuous                  | -1         | А          |
| lε               | Emitter Current-Continuous                    | 1          | А          |
| Pc               | Total Power Dissipation @ T <sub>C</sub> =25℃ | 15         | W          |
| TJ               | Junction Temperature 150                      |            | $^{\circ}$ |
| T <sub>stg</sub> | Storage Temperature Range                     | $^{\circ}$ |            |







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#### **ELECTRICAL CHARACTERISTICS**

T<sub>C</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> = -10mA; I <sub>B</sub> = 0          | -120 |      |      | V    |
| V <sub>(BR)EBO</sub>  | Emitter-Base Breakdown Voltage       | I <sub>E</sub> = -1mA; I <sub>C</sub> = 0           | -5   |      |      | V    |
| V <sub>CE</sub> (sat) | Collector-Emitter Saturation Voltage | I <sub>C</sub> = -0.5A; I <sub>B</sub> = -50mA      |      |      | -0.5 | V    |
| V <sub>BE(on)</sub>   | Base-Emitter On Voltage              | I <sub>C</sub> = -0.5A; V <sub>CE</sub> = -5V       |      |      | -1.0 | V    |
| I <sub>CBO</sub>      | Collector Cutoff Current             | V <sub>CB</sub> = -50V; I <sub>E</sub> = 0          |      |      | -1.0 | μА   |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = -5V; I <sub>C</sub> = 0           |      |      | -1.0 | μА   |
| h <sub>FE-1</sub>     | DC Current Gain                      | I <sub>C</sub> = -0.15A; V <sub>CE</sub> = -5V      | 70   |      | 240  |      |
| h <sub>FE-2</sub>     | DC Current Gain                      | I <sub>C</sub> = -0.5A; V <sub>CE</sub> = -5V       | 40   |      |      |      |
| f⊤                    | Current-Gain—Bandwidth Product       | I <sub>C</sub> = -0.15A; V <sub>CE</sub> = -5V      |      | 30   |      | MHz  |
| Сов                   | Output Capacitance                   | I <sub>E</sub> = 0; V <sub>CB</sub> = -10V; f= 1MHz |      | 30   |      | pF   |

### ♦ h<sub>FE-1</sub> Classifications

| 0      | Y       |  |  |
|--------|---------|--|--|
| 70-140 | 120-240 |  |  |

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