

**isc Silicon NPN Power Transistor**
**2SD1095**
**DESCRIPTION**

- High Voltage Capability
- Excellent Safe Operating Area
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

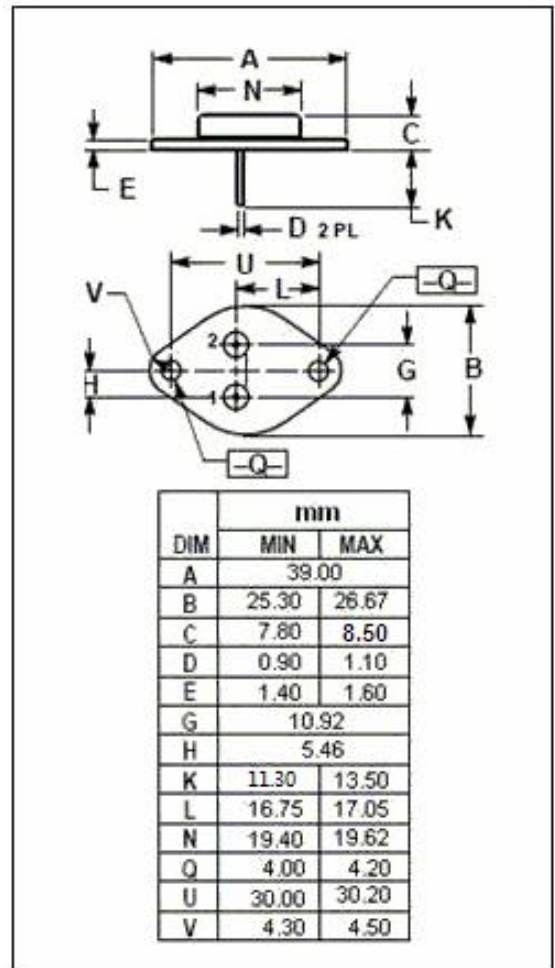
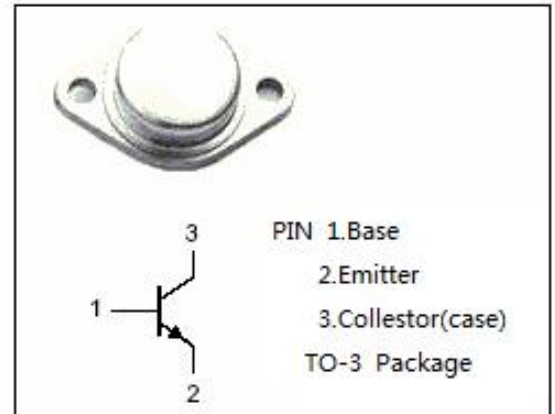
- Switching regulators
- Motor controls .
- DC-DC converters .

**Absolute maximum ratings(Ta=25°C)**

| SYMBOL           | PARAMETER  | VALUE   | UNIT |
|------------------|--|---------|------|
| V <sub>CB0</sub> | Collector-Base Voltage                               | 1200    | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                            | 800     | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                                 | 7       | V    |
| I <sub>C</sub>   | Collector Current-Continuous                         | 1.5     | A    |
| I <sub>CM</sub>  | Collector Current-Peak                               | 3       | A    |
| P <sub>C</sub>   | Collector Power Dissipation<br>@T <sub>C</sub> =25°C | 50      | W    |
| T <sub>J</sub>   | Junction Temperature                                 | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature Range                            | -65~150 | °C   |

**THERMAL CHARACTERISTICS**

| SYMBOL              | PARAMETER                            | MAX | UNIT |
|---------------------|--------------------------------------|-----|------|
| R <sub>th j-c</sub> | Thermal Resistance, Junction to Case | 1.0 | °C/W |



## isc Silicon NPN Power Transistor

## 2SD1095

## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

| SYMBOL               | PARAMETER                            | CONDITIONS  | MIN  | MAX      | UNIT |
|----------------------|--------------------------------------|---|------|----------|------|
| V <sub>(BR)CBO</sub> | Collector-Base Breakdown Voltage     | I <sub>C</sub> = 1mA; I <sub>B</sub> = 0  | 1200 |          |      |
| V <sub>(BR)CEO</sub> | Collector-Emitter Breakdown Voltage  | I <sub>C</sub> = 10mA; I <sub>B</sub> = 0   | 800  |          |      |
| V <sub>(BR)EBO</sub> | Emitter-Base Breakdown Voltage       | I <sub>E</sub> = 1mA; I <sub>C</sub> = 0  | 7    |          |      |
| V <sub>CE(sat)</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 1A; I <sub>B</sub> = 0.2A  |      | 1.5      | V    |
| V <sub>BE(sat)</sub> | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 1A; I <sub>B</sub> = 0.2A  |      | 2.0      | V    |
| I <sub>CBO</sub>     | Collector Cutoff Current             | V <sub>CB</sub> = 1200V; I <sub>E</sub> = 0<br>V <sub>CB</sub> = 1200V; I <sub>E</sub> = 0; T <sub>C</sub> =125°C |      | 0.1<br>1 | mA   |
| I <sub>CEO</sub>     | Collector Cutoff Current             | V <sub>CE</sub> = 800V; I <sub>B</sub> = 0  |      | 0.1      | mA   |
| I <sub>EBO</sub>     | Emitter Cutoff Current               | V <sub>EB</sub> = 6V; I <sub>C</sub> = 0  |      | 0.1      | mA   |
| h <sub>FE-1</sub>    | DC Current Gain                      | I <sub>C</sub> = 0.3A ; V <sub>CE</sub> = 5V  | 10   |          |      |
| h <sub>FE-2</sub>    | DC Current Gain                      | I <sub>C</sub> = 1A ; V <sub>CE</sub> = 5V  | 8    |          |      |

Pulsed: Pulse duration = 300 ms, duty cycle = 2.0 %

Switching times; Resistive Load

|                |              |   |  |     |     |
|----------------|--------------|---|--|-----|-----|
| t <sub>r</sub> | Rise Time    | I <sub>C</sub> = 1A ; I <sub>B1</sub> =-I <sub>B2</sub> = 0.3A; V <sub>CC</sub> = 400V; |  | 0.5 | μ s |
| t <sub>s</sub> | Storage Time |   |  | 3.5 | μ s |
| t <sub>f</sub> | Fall Time    |   |  | 0.8 | μ s |

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