

# isc Silicon PNP Power Transistor

## 2N6111

### DESCRIPTION

- DC Current Gain-  
:  $h_{FE} = 30-150 @ I_C = -3A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = -30V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

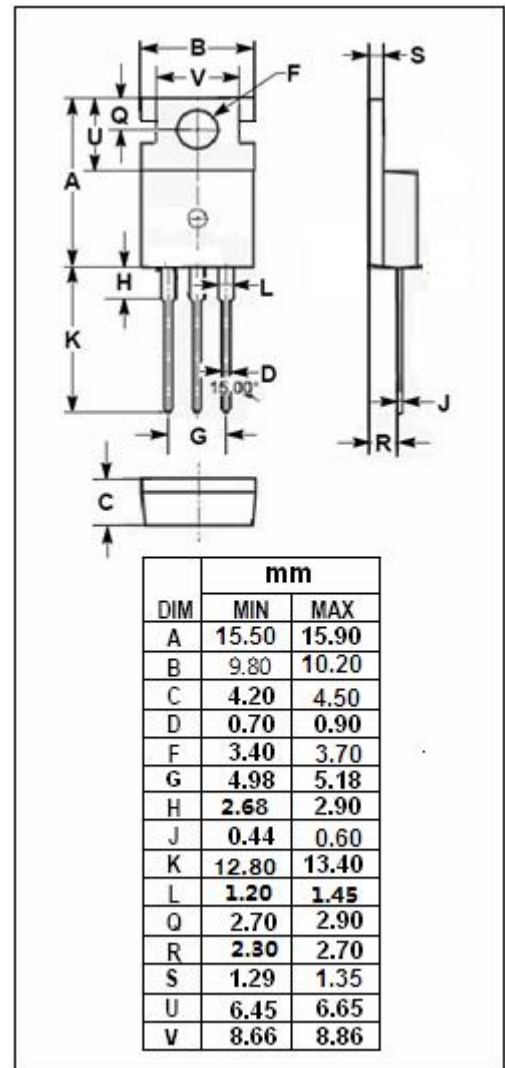
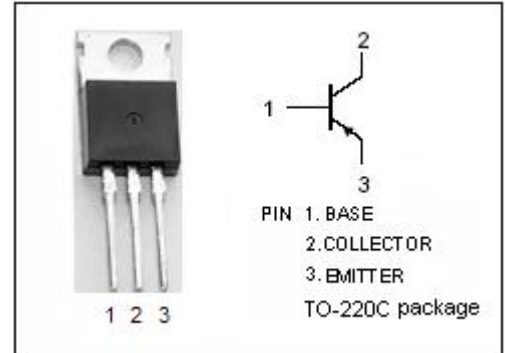
- Designed for use in general-purpose amplifier and switching applications

### ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

| SYMBOL    | PARAMETER                                                 | VALUE   | UNIT             |
|-----------|-----------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | -40     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | -30     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | -5      | V                |
| $I_C$     | Collector Current-Continuous                              | -7      | A                |
| $I_{CM}$  | Collector Current-Peak                                    | -10     | A                |
| $I_B$     | Base Current                                              | -3      | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^\circ\text{C}$ | 40      | W                |
| $T_J$     | Junction Temperature                                      | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                 | -65~150 | $^\circ\text{C}$ |

### THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                            | MAX   | UNIT               |
|---------------|--------------------------------------|-------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 3.125 | $^\circ\text{C/W}$ |



**isc Silicon PNP Power Transistor****2N6111****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL                | PARAMETER                            | CONDITIONS                                                                                                                           | MIN | MAX          | UNIT |
|-----------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----|--------------|------|
| V <sub>CEQ(SUS)</sub> | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = -50mA ; I <sub>B</sub> = 0                                                                                          | -30 |              | V    |
| V <sub>CE(sat)</sub>  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = -7A; I <sub>B</sub> = -3A                                                                                           |     | -3.5         | V    |
| V <sub>BE(on)</sub>   | Base-Emitter On Voltage              | I <sub>C</sub> = -7A ; V <sub>CE</sub> = -4V                                                                                         |     | -3.0         | V    |
| I <sub>CEX</sub>      | Collector Cutoff Current             | V <sub>CE</sub> = -40V; V <sub>BE(off)</sub> = -1.5V<br>V <sub>CE</sub> = -30V; V <sub>BE(off)</sub> = -1.5V; T <sub>C</sub> = 150°C |     | -0.1<br>-2.0 | mA   |
| I <sub>CEO</sub>      | Collector Cutoff Current             | V <sub>CE</sub> = -20V; I <sub>B</sub> = 0                                                                                           |     | -1.0         | mA   |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = -5V; I <sub>C</sub> = 0                                                                                            |     | -1.0         | mA   |
| h <sub>FE-1</sub>     | DC Current Gain                      | I <sub>C</sub> = -3A ; V <sub>CE</sub> = -4V                                                                                         | 30  | 150          |      |
| h <sub>FE-2</sub>     | DC Current Gain                      | I <sub>C</sub> = -7A ; V <sub>CE</sub> = -4V                                                                                         | 2.3 |              |      |
| C <sub>OB</sub>       | Output Capacitance                   | I <sub>E</sub> = 0; V <sub>CB</sub> = -10V; f <sub>test</sub> = 1MHz                                                                 |     | 250          | pF   |
| f <sub>T</sub>        | Current-Gain—Bandwidth Product       | I <sub>C</sub> = -0.5A ; V <sub>CE</sub> = -4V; f <sub>test</sub> = 1MHz                                                             | 10  |              | MHz  |

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