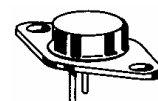


## NPN SILICON TRANSISTOR

### Devices

**2N4911**

**TO-66  
Package**

- Medium Power
- Switching and Amplifier Applications

### MAXIMUM RATINGS (PER LEG)

| Ratings                                                                    | Symbol         | Value       | Units                              |
|----------------------------------------------------------------------------|----------------|-------------|------------------------------------|
| Collector-Emitter Voltage                                                  | $V_{CEO}$      | 60          | Vdc                                |
| Collector-Base Voltage                                                     | $V_{CB}$       | 60          | Vdc                                |
| Emitter-Base Voltage                                                       | $V_{EB}$       | 5.0         | Vdc                                |
| Collector Current – Continuous Peak (1)                                    | $I_C$          | 1.0         | Adc                                |
| Base Current – Continuous                                                  | $I_B$          | 1.0         | Adc                                |
| Total Power Dissipation<br>@ $T_C = 25^\circ\text{C}$<br>Derate above 250C | $P_D$          | 25<br>0.143 | Watts<br>$\text{W}/^\circ\text{C}$ |
| Operating and Storage Junction<br>Temperature Range                        | $T_J, T_{stg}$ | -65 to +200 | $^\circ\text{C}$                   |

### THERMAL CHARACTERISTICS

|                                       |                 |     |                           |
|---------------------------------------|-----------------|-----|---------------------------|
| Thermal Resistance – Junction to Case | $R_{\theta JC}$ | 7.0 | $^\circ\text{C}/\text{W}$ |
|---------------------------------------|-----------------|-----|---------------------------|

(1) Pulse Test: Pulse Width = 10 ms, Duty Cycle &lt; 10%

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

| CHARACTERISTICS | Symbol | Min | Max | Unit |
|-----------------|--------|-----|-----|------|
|-----------------|--------|-----|-----|------|

### OFF CHARACTERISTICS

|                                                                                                                                         |                        |    |            |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------|----|------------|------------------------|
| Collector-Emitter Sustaining Voltage<br>$I_C = 0.1 \text{ Adc}, I_B = 0$                                                                | $V_{CEO(sus)}$         | 60 |            | Vdc                    |
| Collector Cutoff Current<br>$V_{CE} = 30 \text{ Vdc}, I_B = 0$<br>$V_{CE} = \text{Rated } V_{CB}, V_{be} \text{ off} = 1.5 \text{ Vdc}$ | $I_{CEO}$<br>$I_{CEX}$ |    | 0.5<br>0.1 | mAdc<br>mAdc           |
| Collector Cutoff Current<br>$V_{CE} = 90 V_{CB}$<br>$V_{CE} = 90 V_{CB}, T_C = 150^\circ$                                               | $I_{CES}$              |    | 10<br>75   | $V_{Adc}$<br>$V_{Adc}$ |
| Emitter Cutoff Current<br>$V_{BE} = 5.0 \text{ Vdc}, I_C = 0$                                                                           | $I_{EBO}$              |    | 1.0        | mAdc                   |

**ON CHARACTERISTICS**

|                                                                                                                             |               |          |     |     |
|-----------------------------------------------------------------------------------------------------------------------------|---------------|----------|-----|-----|
| DC Current Gain<br>$I_C = 50 \mu\text{A}$ , $V_{CE} = 1.0 \text{ Vdc}$<br>$I_C = .5 \text{ A}$ , $V_{CE} = 1.0 \text{ Vdc}$ | $h_{FE}$      | 40<br>20 | 100 | Vdc |
| Collector-Emitter Saturation Voltage<br>$I_C = 1.0 \text{ A}$ , $I_B = 100 \text{ mA}$                                      | $V_{CE(sat)}$ |          | 0.6 | Vdc |
| Base-Emitter Saturation Voltage<br>$I_C = 1.0 \text{ A}$ , $I_B = 100 \text{ mA}$                                           | $V_{BE(sat)}$ |          | 1.3 | Vdc |

**DYNAMIC CHARACTERISTICS**

| CHARACTERISTICS                                                                                             | Symbol   | Min | Max | Unit  |
|-------------------------------------------------------------------------------------------------------------|----------|-----|-----|-------|
| Forward Current Transfer Ratio<br>$I_C = .25 \text{ A}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 1.0 \text{ kHz}$ | $h_{fe}$ | 25  |     | MHz   |
| Output Capacitance<br>$V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $f = 100 \text{ kHz}$                         | $C_{ob}$ |     | 100 | $p^F$ |

(1) Pulse Test: Pulse Width = 300 $\mu$ s, Duty Cycle  $\leq 2.0\%$

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