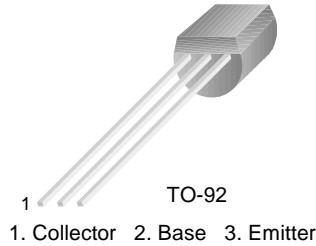


# BC517

## NPN Darlington Transistor

- This device is designed for applications requiring extremely high current gain at currents to 1.0A.
- Sourced from process 05.



### Absolute Maximum Ratings \* T<sub>a</sub> = 25°C unless otherwise noted

| Symbol                            | Parameter  | Value     | Units |
|-----------------------------------|--|-----------|-------|
| V <sub>CEO</sub>                  | Collector-Emitter Voltage                        | 30        | V     |
| V <sub>CBO</sub>                  | Collector-Base Voltage                           | 40        | V     |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 10        | V     |
| I <sub>C</sub>                    | Collector Current - Continuous                   | 1.2       | A     |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Junction Temperature Range | -55 ~ 150 | °C    |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**

1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics T<sub>a</sub> = 25°C unless otherwise noted

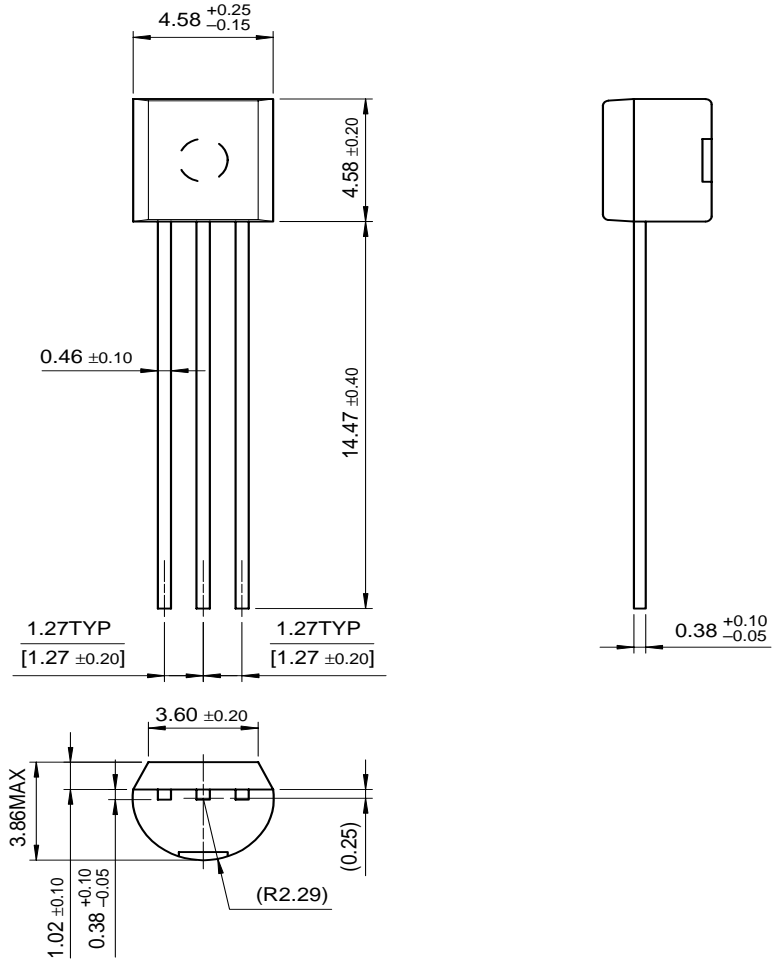
| Symbol                      | Parameter                             | Conditions                                     | Min.   | Max | Units |
|-----------------------------|---------------------------------------|--|--------|-----|-------|
| <b>Off Characteristics</b>  |                                       |  |        |     |       |
| V <sub>(BR)CEO</sub>        | Collector-Emitter Breakdown Voltage * | I <sub>C</sub> = 2.0mA, I <sub>B</sub> = 0     | 30     |     | V     |
| V <sub>(BR)CBO</sub>        | Collector-Base Breakdown Voltage      | I <sub>C</sub> = 10μA, I <sub>E</sub> = 0      | 40     |     | V     |
| V <sub>(BR)EBO</sub>        | Emitter-Base Breakdown Voltage        | I <sub>E</sub> = 100nA, I <sub>C</sub> = 0     | 10     |     | V     |
| I <sub>CBO</sub>            | Collector Cut-off Current             | V <sub>CB</sub> = 30V, I <sub>E</sub> = 0      |        | 100 | nA    |
| <b>On Characteristics *</b> |                                       |  |        |     |       |
| h <sub>FE</sub>             | DC Current Gain                       | V <sub>CE</sub> = 2.0V, I <sub>C</sub> = 20mA  | 30,000 |     |       |
| V <sub>CE(sat)</sub>        | Collector-Emitter Saturation Voltage  | I <sub>C</sub> = 100mA, I <sub>B</sub> = 0.1mA |        | 1   | V     |
| V <sub>BE(on)</sub>         | Base-Emitter On Voltage               | I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5.0V  |        | 1.4 | V     |

### Thermal Characteristics T<sub>a</sub> = 25°C unless otherwise noted

| Symbol           | Parameter                                     | Value      | Units       |
|------------------|---|------------|-------------|
| P <sub>D</sub>   | Total Device Dissipation<br>Derate above 25°C | 625<br>5.0 | mW<br>mW/°C |
| R <sub>θJC</sub> | Thermal Resistance, Junction to Case          | 83.3       | °C/W        |
| R <sub>θJA</sub> | Thermal Resistance, Junction to Ambient       | 200        | °C/W        |

Mechanical Dimensions

TO-92



Dimensions in Millimeters

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|--------------------------|------------------------|---|
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