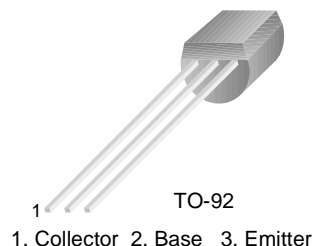


BC516

BC516

PNP Darlington Transistor

- This device is designed for applications requiring extremely high current gain at currents to 1mA.
- Sourced from process 61.



Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--------------------------------------------------|------------|------------------|
| V_{CEO} | Collector-Emitter Voltage | 30 | V |
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 10 | V |
| I_C | Collector Current - Continuous | 1 | A |
| P_D | Total Power Dissipation $T_A = 25^\circ\text{C}$ | 625 | mW |
| T_J, T_{STG} | Operating and Storage Junction Temperature Range | -55 ~ +150 | $^\circ\text{C}$ |

Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---------------|--------------------------------------|------------------------------------------------------------|--------|------|------|-------|
| V_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 2\text{mA}, I_B = 0$ | 30 | | | V |
| V_{CBO} | Collector-Base Breakdown Voltage | $I_C = 100\mu\text{A}, I_E = 0$ | 40 | | | V |
| V_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 10\mu\text{A}, I_C = 0$ | 10 | | | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = 30\text{V}, I_E = 0$ | | | 100 | nA |
| h_{FE} | DC Current Gain | $I_C = 20\text{mA}, V_{CE} = 2\text{V}$ | 30,000 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 100\text{mA}, I_B = 0.1\text{mA}$ | | | 1 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 10\text{mA}, V_{CE} = 5\text{V}$ | | | 1.4 | V |
| f_T | Current Gain Bandwidth Product (2) | $I_C = 10\text{mA}, V_{CE} = 5\text{V}, f = 100\text{MHz}$ | | 200 | | MHz |

NOTES:

1. Pulse Test Pulse Width $\leq 2\%$
2. $f_T = |h_{FE}| \cdot f_{test}$

Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max. | Units |
|-----------------|-----------------------------------------|------|--------------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 200 | $^\circ\text{C/W}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 83.3 | $^\circ\text{C/W}$ |

Package Dimensions

TO-92



Dimensions in Millimeters

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