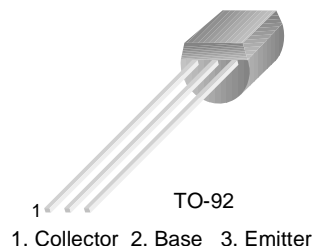


# BC516

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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