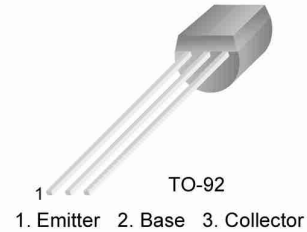


BC516

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	$^\circ\text{C/W}$