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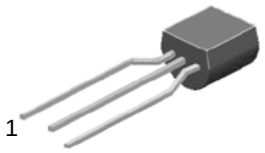
BC516
PNP Darlington Transistor

Features

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



TO-92

1. Collector 2. Base 3. Emitter

Ordering Information

Part Number	Top Mark	Package	Packing Method
BC516_D27Z	BC516	TO-92 3L	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
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
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C

Thermal Characteristics[1]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation, T_A = 25°C	625	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	200	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	83.3	°C/W

Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics[2]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CEO}	Collector-Emitter Breakdown Voltage	I_C = -2 mA, I_B = 0	-30			V
V_{CBO}	Collector-Base Breakdown Voltage	I_C = -100 μA, I_E = 0	-40			V
V_{EBO}	Emitter-Base Breakdown Voltage	I_E = -10 μA, I_C = 0	-10			V
I_{CBO}	Collector Cut-Off Current	V_{CB} = -30 V, I_E = 0			-100	nA
h_{FE}	DC Current Gain	I_C = -20 mA, V_{CE} = -2 V	30,000			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -100 mA, I_B = -0.1 mA			-1	V
V_{BE}(on)	Base-Emitter On Voltage	I_C = -10 mA, V_{CE} = -5 V			-1.4	V
f_T	Current Gain - Bandwidth Product[3]	I_C = -10 mA, V_{CE} = -5 V, f = 100 MHz		200		MHz

Notes:

2. Pulse test: pulse width ≤ 2.0%
3. $f_T = |h_{fe}| \cdot f_{test}$

Physical Dimensions

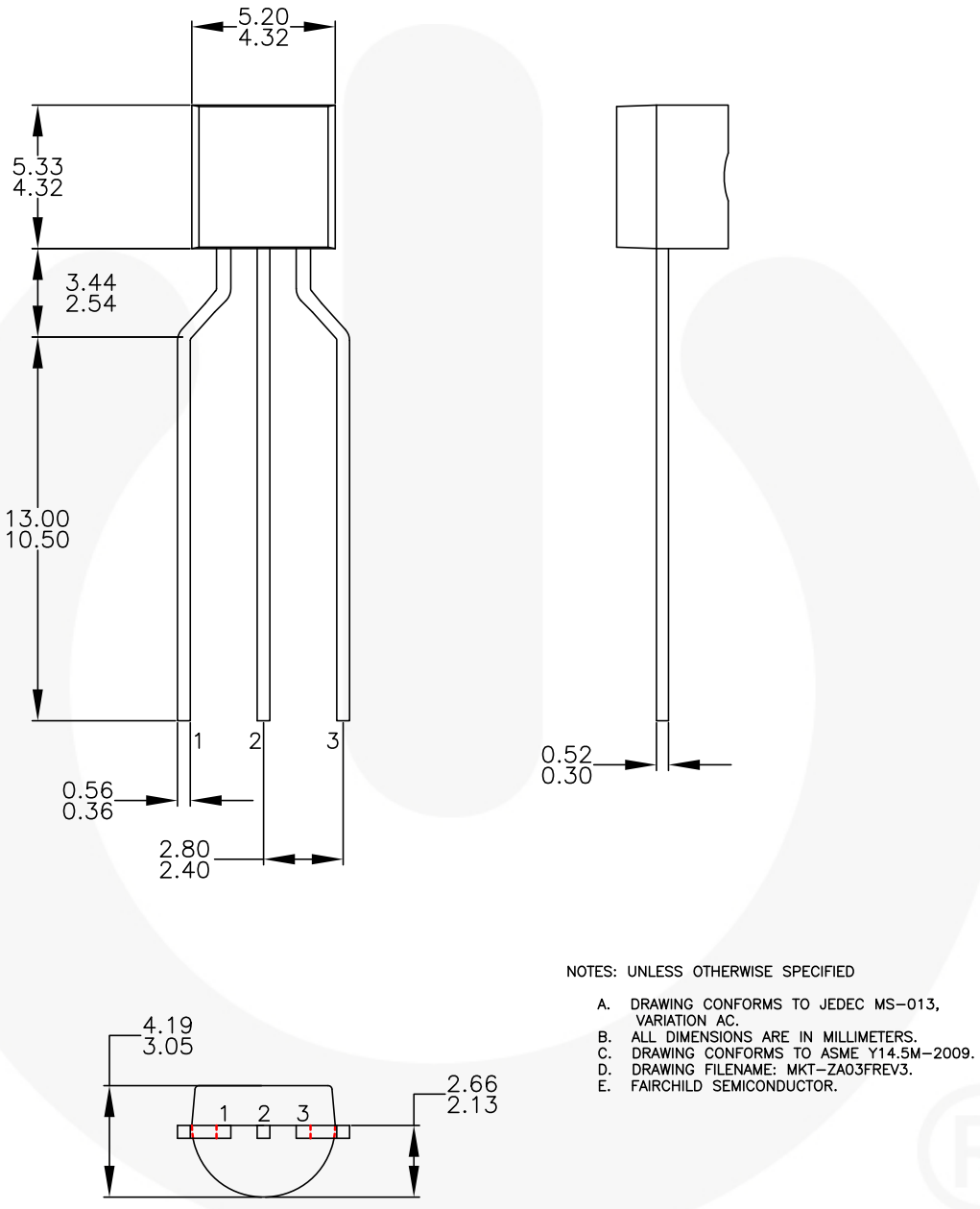


Figure 1. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form

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