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September 2015

BC337 / BC338
NPN Epitaxial Silicon Transistor

TO-92
1. Collector
2. Base
3. Emitter

Straight Lead Bulk Packing

Bent Lead Tape & Reel Ammo Packing

Features

- Switching and Amplifier Applications
- Suitable for AF-Driver Stages and Low-Power Output Stages
- Complement to BC327 / BC328

Ordering Information

Part Number	Top Mark	Package	Packing Method
BC33716BU	BC33716	TO-92 3L	Bulk
BC33716TA	BC33716	TO-92 3L	Ammo
BC33716TFR	BC33716	TO-92 3L	Tape and Reel
BC33725BU	BC33725	TO-92 3L	Bulk
BC33725TA	BC33725	TO-92 3L	Ammo
BC33725TAR	BC33725	TO-92 3L	Ammo
BC33725TF	BC33725	TO-92 3L	Tape and Reel
BC33725TFR	BC33725	TO-92 3L	Tape and Reel
BC33740BU	BC33740	TO-92 3L	Bulk
BC33740TA	BC33740	TO-92 3L	Ammo
BC33825TA	BC33825	TO-92 3L	Ammo

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_{CES}	Collector-Emitter Voltage	BC337	50	V
		BC338	30	
V_{CEO}	Collector-Emitter Voltage	BC337	45	V
		BC338	25	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current (DC)		800	mA
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		-55 to 150	°C

Thermal Characteristics[1]

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

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	625	mW
	Derate Above 25°C	5.0	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	200	°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

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

Symbol	Parameter		Conditions	Min.	Typ.	Max.	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage	BC337	I_C = 10 mA, I_B = 0	45			V
		BC338		25			
BV_{CES}	Collector-Emitter Breakdown Voltage	BC337	I_C = 0.1 mA, V_{BE} = 0	50			V
		BC338		30			
BV_{EBO}	Emitter-Base Breakdown Voltage		I_E = 0.1 mA, I_C = 0	5			V
I_{CES}	Collector Cut-Off Current	BC337	V_{CE} = 45 V, I_B = 0		2	100	nA
		BC338	V_{CE} = 25 V, I_B = 0		2	100	
h_{FE1}	DC Current Gain		V_{CE} = 1 V, I_C = 100 mA	100		630	
h_{FE2}			V_{CE} = 1 V, I_C = 300 mA	60			
V_{CE}(sat)	Collector-Emitter Saturation Voltage		I_C = 500 mA, I_B = 50 mA			0.7	V
V_{BE}(on)	Base-Emitter On Voltage		V_{CE} = 1 V, I_C = 300 mA			1.2	V
f_T	Current Gain Bandwidth Product		V_{CE} = 5 V, I_C = 10 mA, f = 50 MHz		100		MHz
C_{ob}	Output Capacitance		V_{CB} = 10 V, I_E = 0, f = 1 MHz		12		pF

h_{FE} Classification

Classification	16	25	40
h_{FE1}	100 ~ 250	160 ~ 400	250 ~ 630
h_{FE2}	60 ~	100 ~	170 ~

Physical Dimensions

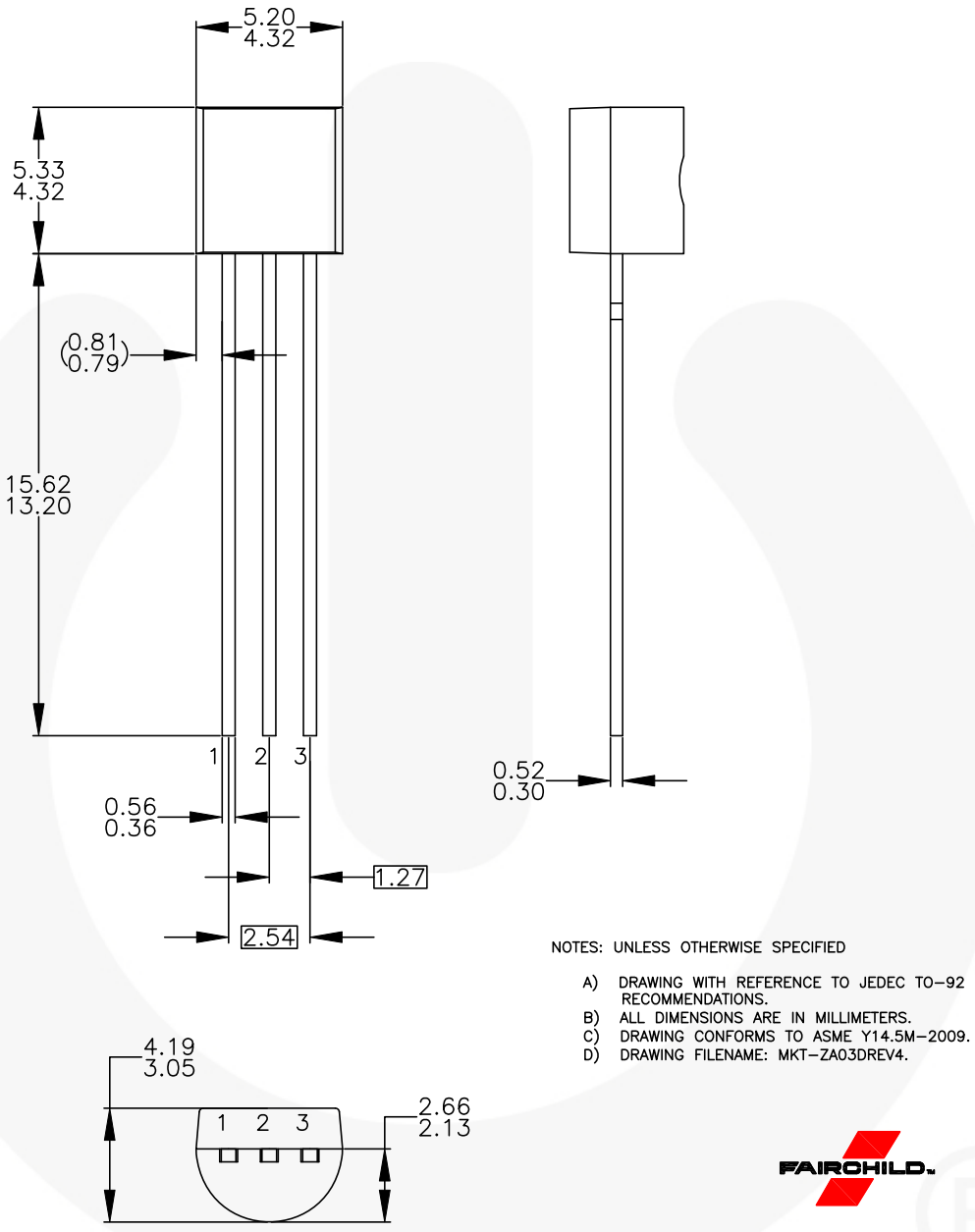

Figure 1. 3-Lead, TO-92, JEDEC TO-92 Compliant Straight Lead Configuration, Bulk Type

Physical Dimensions (Continued)

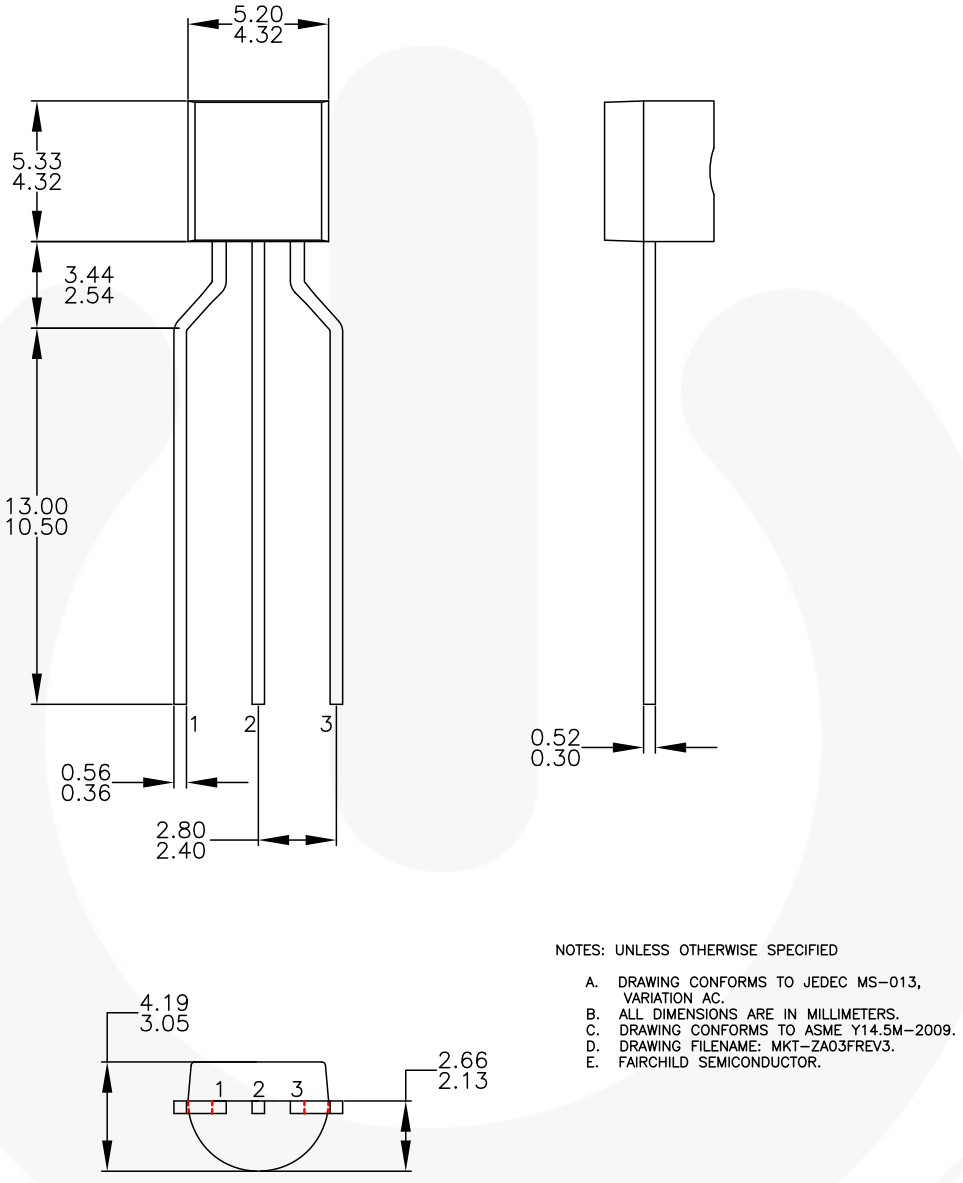

Figure 2. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo, Tape and Reel Type

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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