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January 2016

BC556 / BC557 / BC558 / BC559 / BC560
PNP Epitaxial Silicon Transistor

Features

- Switching and Amplifier
- High-Voltage: BC556, V_{CEO} = -65 V
- Low-Noise: BC559, BC560
- Complement to BC546, BC547, BC548, BC549, and BC550



Straight Lead
Bulk Packing

Bent Lead
Tape & Reel
Ammo Packing

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

Ordering Information

Part Number	Marking	Package	Packing Method
BC556ABU	BC556A	TO-92 3L	Bulk
BC556ATA	BC556A	TO-92 3L	Ammo
BC556BTA	BC556B	TO-92 3L	Ammo
BC556BTF	BC556B	TO-92 3L	Tape and Reel
BC556BTFR	BC556B	TO-92 3L	Tape and Reel
BC557ATA	BC557A	TO-92 3L	Ammo
BC557BTA	BC557B	TO-92 3L	Ammo
BC557BTF	BC557B	TO-92 3L	Tape and Reel
BC558BTA	BC558B	TO-92 3L	Ammo
BC559BTA	BC559B	TO-92 3L	Ammo
BC559CTA	BC559C	TO-92 3L	Ammo
BC560CTA	BC560C	TO-92 3L	Ammo

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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_{CBO}	Collector-Base Voltage	BC556	-80	V
		BC557 / BC560	-50	
		BC558 / BC559	-30	
V_{CEO}	Collector-Emitter Voltage	BC556	-65	V
		BC557 / BC560	-45	
		BC558 / BC559	-30	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current (DC)		-100	mA
I_{CP}	Peak Collector Current (Pulse)		-200	mA
I_{BP}	Peak Base Current (Pulse)		-200	mA
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-65 to +150	°C

Thermal Characteristics[1]

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

Symbol	Parameter	Max.	Unit
P_D	Total Power Dissipation	500	mW
	Derate Above 25°C	4.0	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	°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.

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Electrical Characteristics

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

Symbol	Parameter		Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-Off Current		V_{CB} = -30 V, I_E = 0			-15	nA
h_{FE}	DC Current Gain		V_{CE} = -5 V, I_C = -2 mA	110		800	
V_{CE}(sat)	Collector-Emitter Saturation Voltage		I_C = -10 mA, I_B = -0.5 mA		-90	-300	mV
			I_C = -100 mA, I_B = -5 mA		-250	-650	
V_{BE}(sat)	Collector-Base Saturation Voltage		I_C = -10 mA, I_B = -0.5 mA		-700		mV
			I_C = -100 mA, I_B = -5 mA		-900		
V_{BE}(on)	Base-Emitter On Voltage		V_{CE} = -5 V, I_C = -2 mA	-600	-660	-750	mV
			V_{CE} = -5 V, I_C = -10 mA			-800	
f_T	Current Gain Bandwidth Product		V_{CE} = -5 V, I_C = -10 mA, f = 10 MHz		150		MHz
C_{ob}	Output Capacitance		V_{CB} = -10 V, I_E = 0, f = 1 MHz			6	pF
NF	Noise Figure	BC556 / BC557 / BC558	V_{CE} = -5 V, I_C = -200 µA, f = 1 kHz, R_G = 2 kΩ		2	10	dB
		BC559 / BC560			1	4	
		BC559	V_{CE} = -5 V, I_C = -200 µA, R_G = 2 kΩ, f = 30 to 15000 MHz		1.2	4.0	
		BC560			1.2	2.0	

h_{FE} Classification

Classification	A	B	C
h_{FE}	110 ~ 220	200 ~ 450	420 ~ 800

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Typical Performance Characteristics

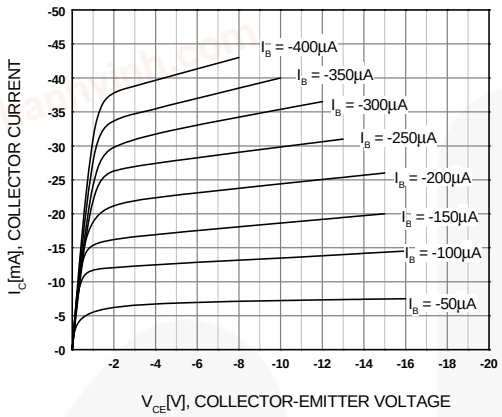


Figure 1. Static Characteristic

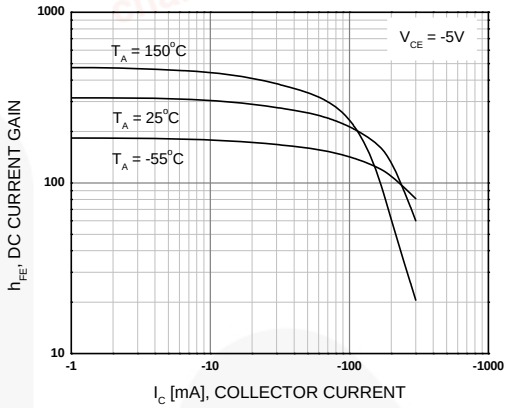


Figure 2. DC Current Gain

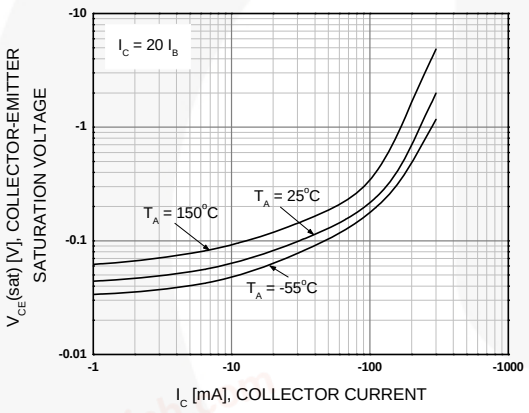


Figure 3. Collector-Emitter Saturation Voltage

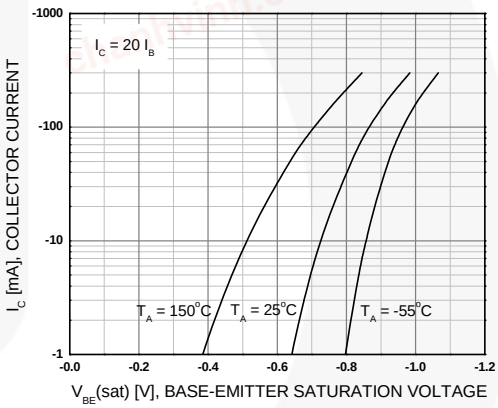


Figure 4. Base-Emitter Saturation Voltage

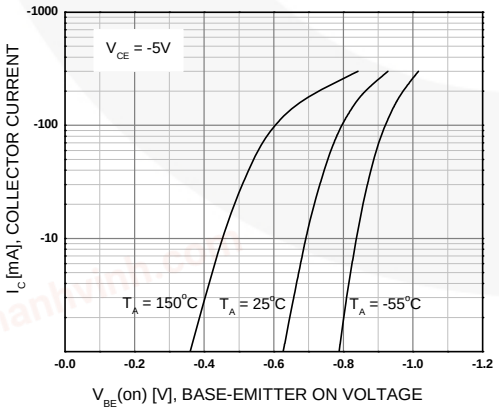


Figure 5. Base-Emitter On Voltage

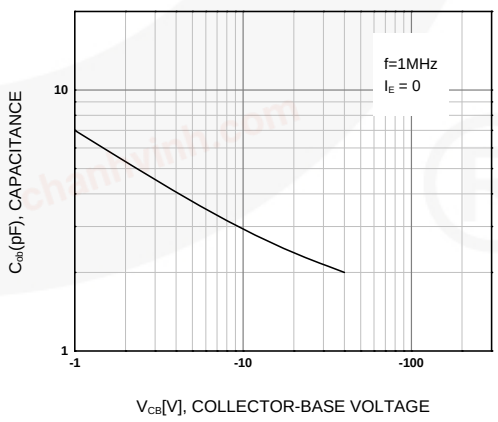


Figure 6. Collector Output Capacitance

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Typical Performance Characteristics (Continued)

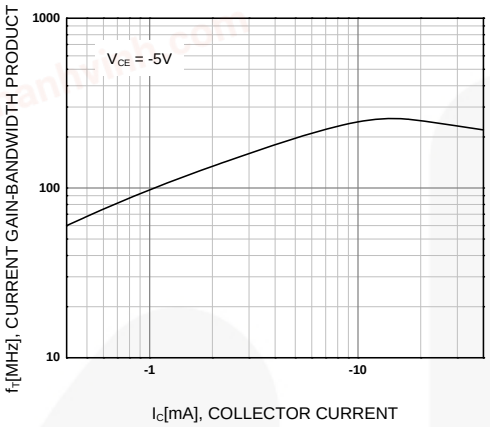


Figure 7. Current Gain Bandwidth Product

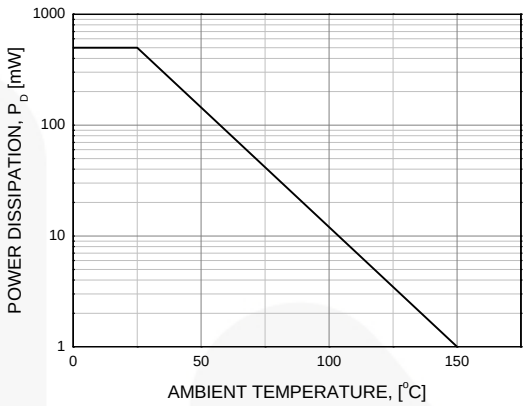


Figure 8. Power Deration

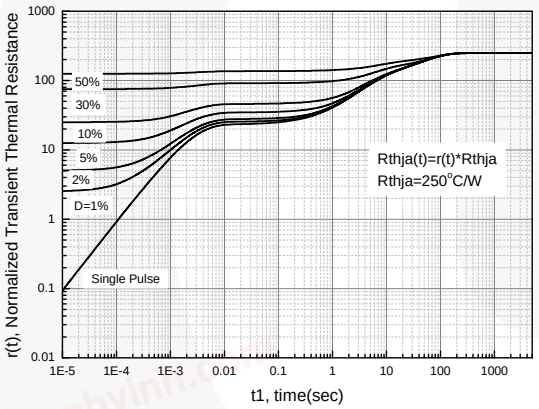


Figure 9. Normalized Transient Thermal Resistance

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Physical Dimensions

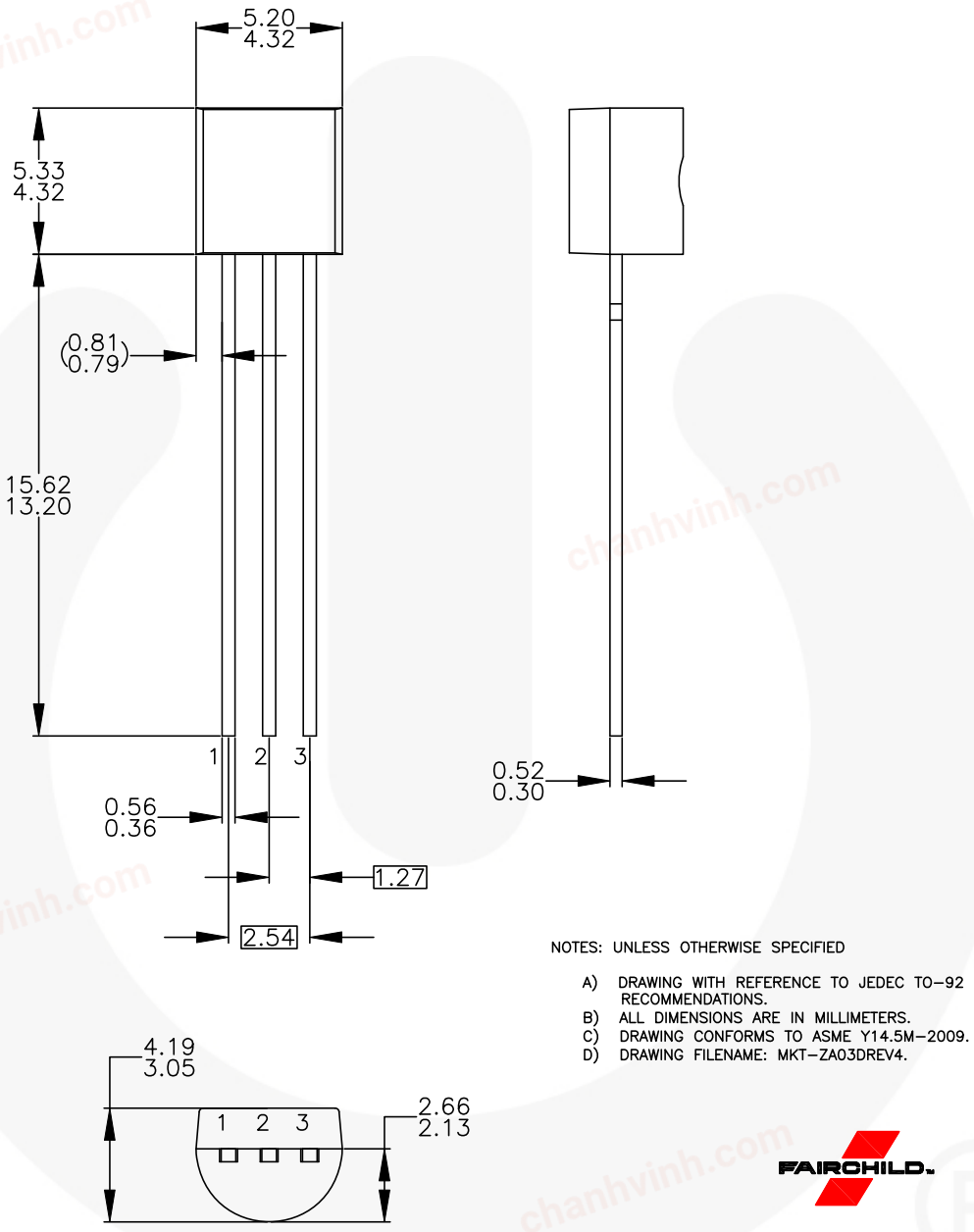
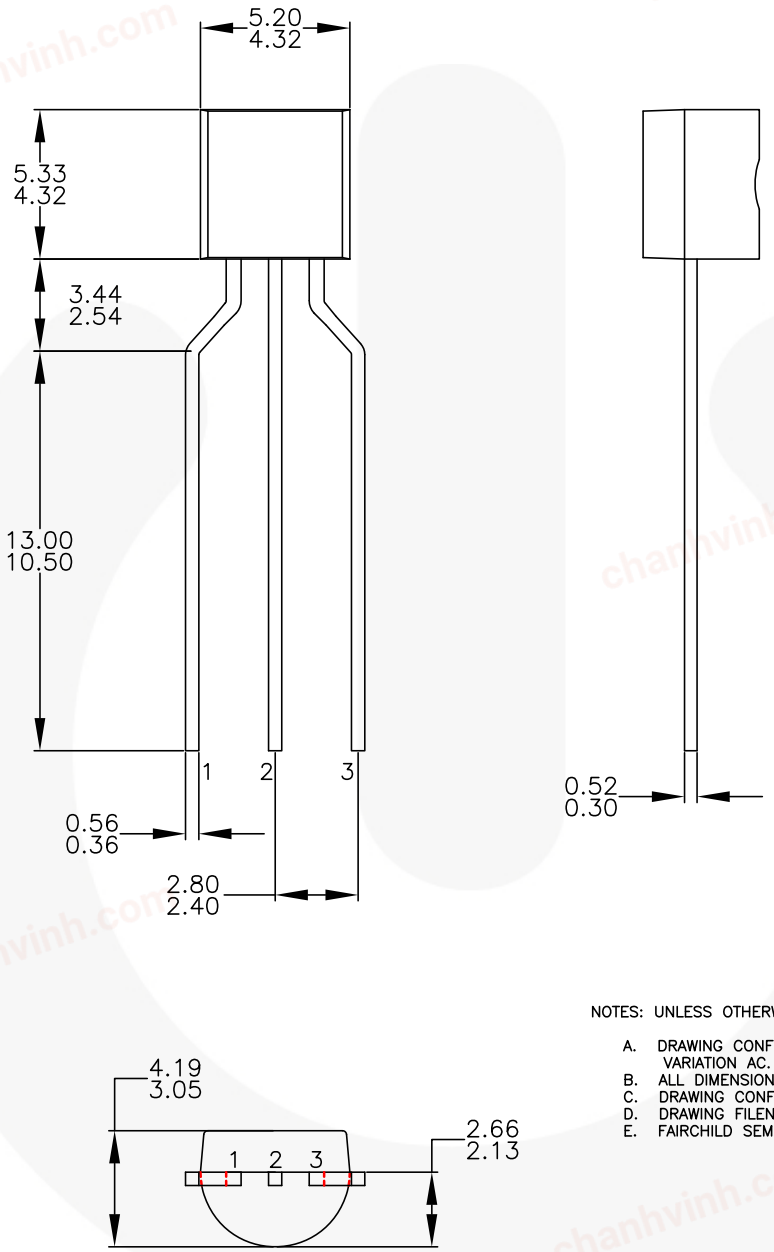


Figure 10. 3-LEAD, TO92, JEDEC TO-92 COMPLIANT STRAIGHT LEAD CONFIGURATION, BULK

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Physical Dimensions (Continued)



NOTES: UNLESS OTHERWISE SPECIFIED

A. DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
B. ALL DIMENSIONS ARE IN MILLIMETERS.
C. DRAWING CONFORMS TO ASME Y14.5M-2009.
D. DRAWING FILENAME: MKT-ZA03FREV3.
E. FAIRCHILD SEMICONDUCTOR.

Figure 11. 3-LEAD, TO92, MOLDED 0.200 IN LINE SPACING LEAD FORM, AMMO, TAPE AND REEL

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