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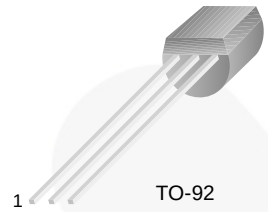
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

November 2014

SS8050
NPN Epitaxial Silicon Transistor

Features

- 2 W Output Amplifier of Portable Radios in Class B Push-pull Operation.
- Complimentary to SS8550
- Collector Current: I_C = 1.5 A



TO-92

1. Emitter 2. Base 3. Collector

Ordering Information

Part Number	Top Mark	Package	Packing Method
SS8050BBU	S8050	TO-92 3L	Bulk
SS8050CBU	S8050	TO-92 3L	Bulk
SS8050CTA	S8050	TO-92 3L	Ammo
SS8050DBU	S8050	TO-92 3L	Bulk
SS8050DTA	S8050	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_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	1.5	A
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-65 to 150	°C

Thermal Characteristics[1]

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

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	1	W
	Derate Above 25°C	8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	°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_{CBO}	Collector-Base Breakdown Voltage	I_C = 100 μA, I_E = 0	40			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 2 mA, I_B = 0	25			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 100 μA, I_C = 0	6			V
I_{CBO}	Collector Cut-Off Current	V_{CB} = 35 V, I_E = 0			100	nA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 6 V, I_C = 0			100	nA
h_{FE1}	DC Current Gain	V_{CE} = 1 V, I_C = 5 mA	45			
h_{FE2}		V_{CE} = 1 V, I_C = 100 mA	85		300	
h_{FE3}		V_{CE} = 1 V, I_C = 800 mA	40			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 800 mA, I_B = 80 mA			0.5	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 800 mA, I_B = 80 mA			1.2	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = 1 V, I_C = 10 mA			1	V
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz		9.0		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10 V, I_C = 50 mA	100			MHz

h_{FE} Classification

Classification	B	C	D
h_{FE2}	85 ~ 160	120 ~ 200	160 ~ 300

Typical Performance Characteristics

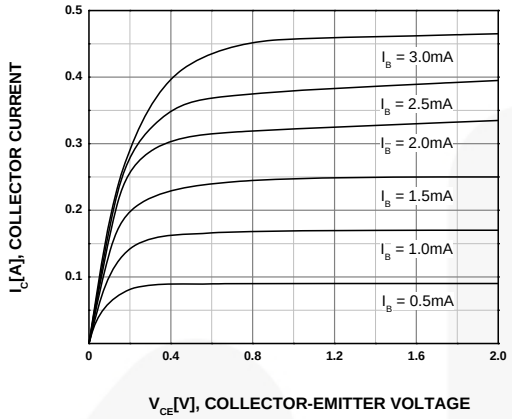


Figure 1. Static Characteristic

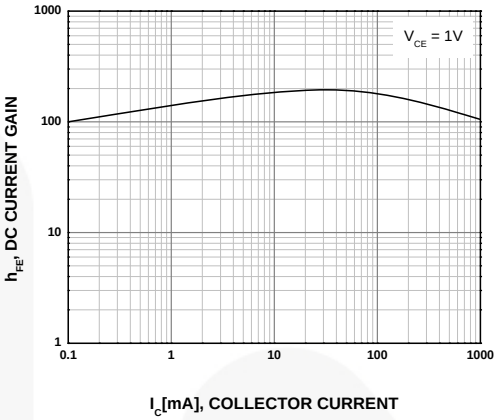


Figure 2. DC Current Gain

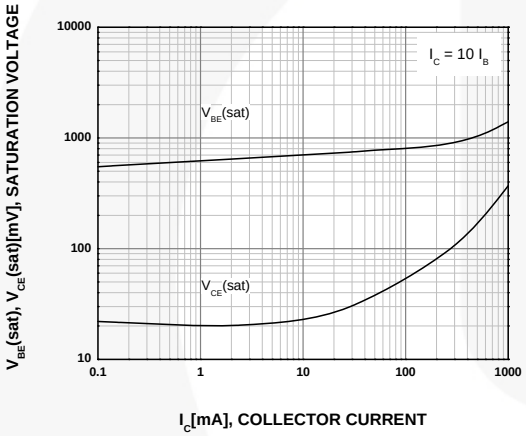


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

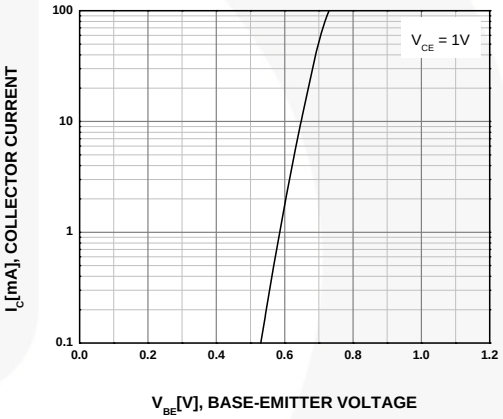


Figure 4. Base-Emitter On Voltage

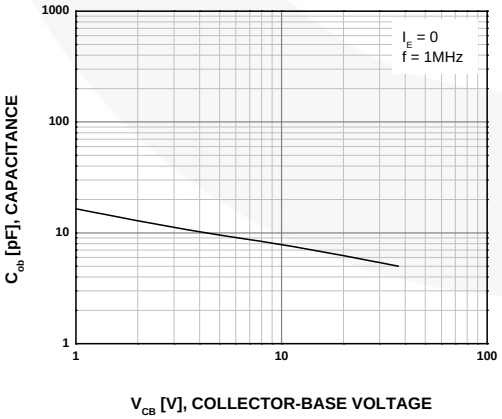


Figure 5. Collector Output Capacitance

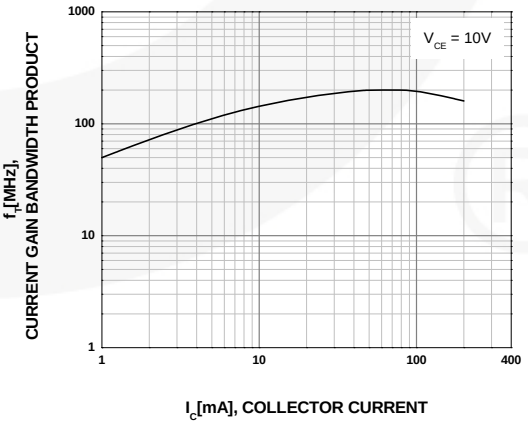
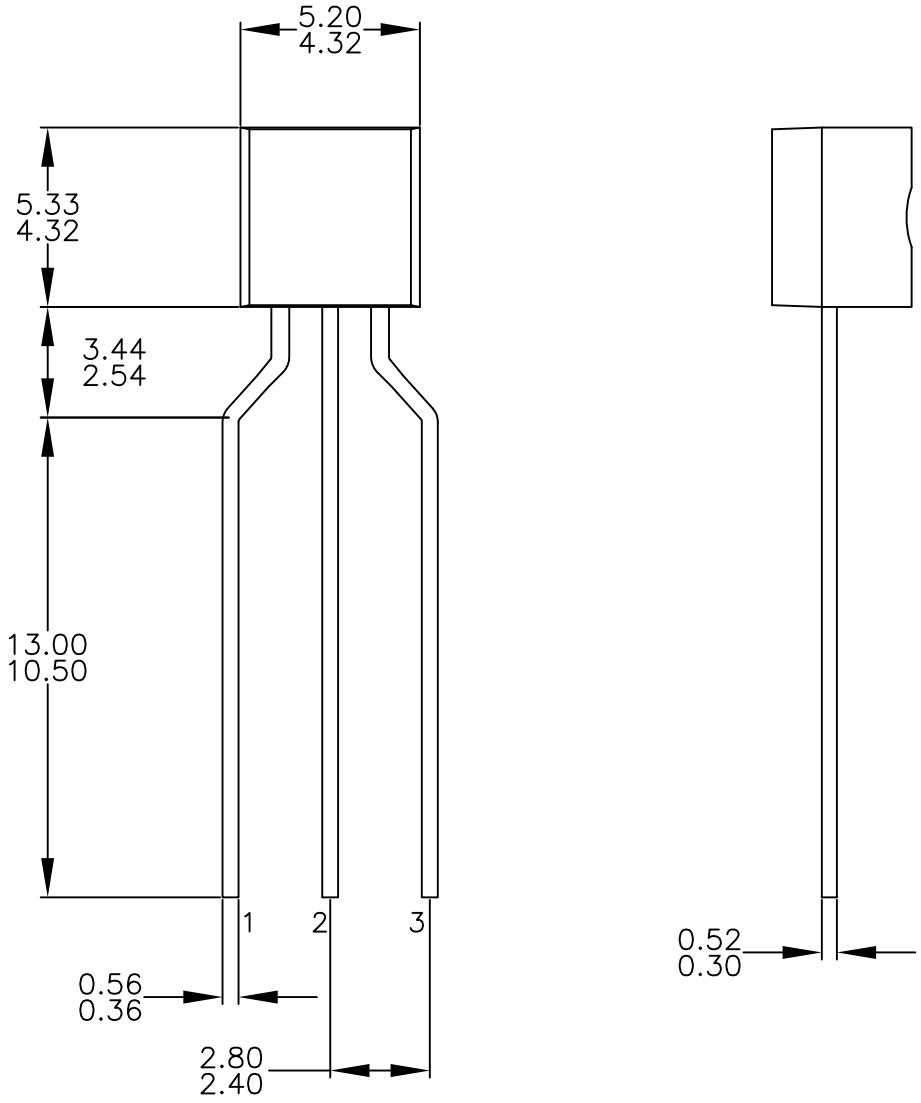
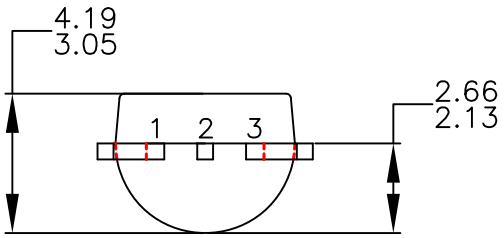


Figure 6. Current Gain Bandwidth Product





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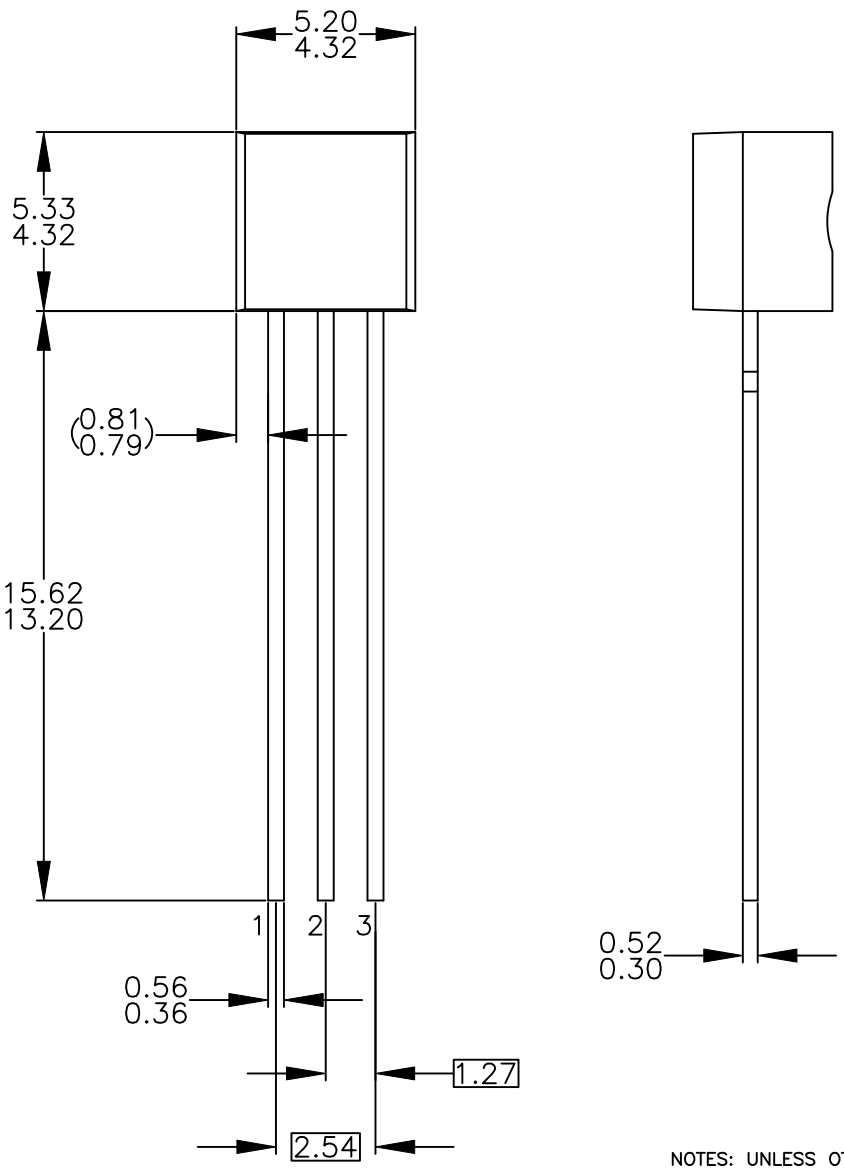

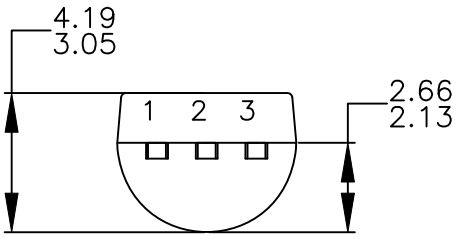

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FAIRCHILD

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