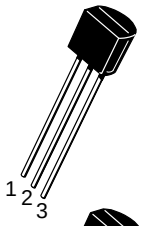
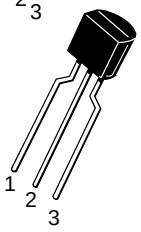
NPN Epitaxial Silicon Transistor

SS8050



TO−92−3
CASE 135AN



TO−92−3
CASE 135AR

1. Emitter
2. Base
3. Collector

Features

- 2 W Output Amplifier of Portable Radios in Class B Push−Pull Operation
- Complementary to SS8550
- Collector Current: I_C = 1.5 A
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector−Base Voltage	V_{CBO}	40	V
Collector−Emitter Voltage	V_{CEO}	25	V
Emitter−Base Voltage	V_{EBO}	6	V
Collector Current	I_C	1.5	A
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	−65 to 150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

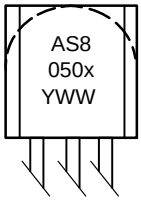
THERMAL CHARACTERISTICS (Note 1)

(T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1	W
Derate Above 25°C		8	mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	125	°C/W

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.

MARKING DIAGRAM



S8050x = Specific Device Code
Line 1: A = Assembly Location
Line 2: x = B, C or D
Line 3: Y = Year
WW= Work Week

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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ELECTRICAL CHARACTERISTICS (T_C = 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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

h_{FE} CLASSIFICATION

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

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping
SS8050BBU	S8050B	TO−92−3, case 135AN (Pb−Free)	10,000 Units/ Bulk Box
SS8050CBU	S8050C	TO−92−3, case 135AN (Pb−Free)	10,000 Units/ Bulk Box
SS8050CTA	S8050C	TO−92−3, case 135AR (Pb−Free)	2,000 Units/ Fan−Fold
SS8050DBU	S8050D	TO−92−3, case 135AN (Pb−Free)	10,000 Units/ Bulk Box
SS8050DTA	S8050D	TO−92−3, case 135AR (Pb−Free)	2,000 Units/ Fan−Fold

TYPICAL PERFORMANCE CHARACTERISTICS

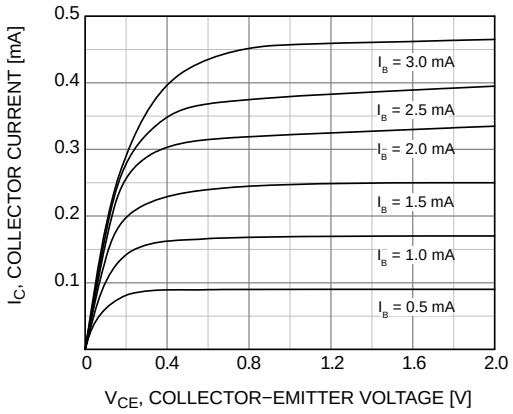

Figure 1. Static Characteristic

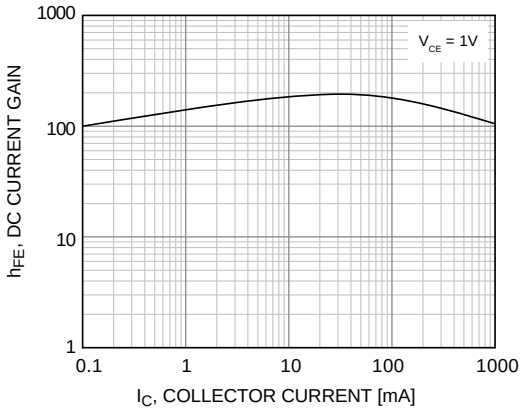

Figure 2. DC Current Gain

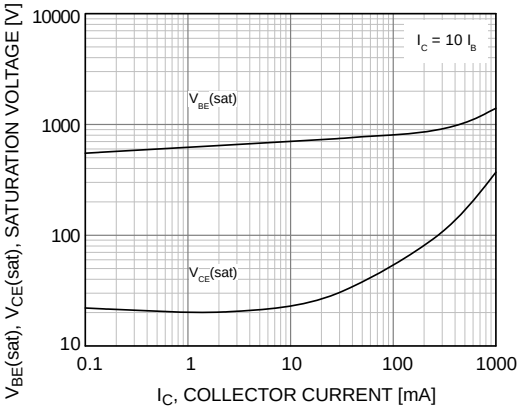

Figure 3. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

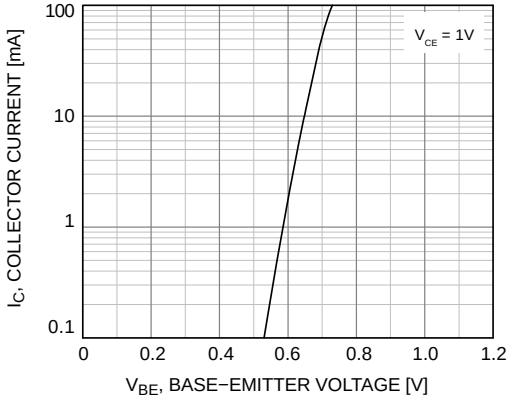

Figure 4. Base−Emitter On Voltage

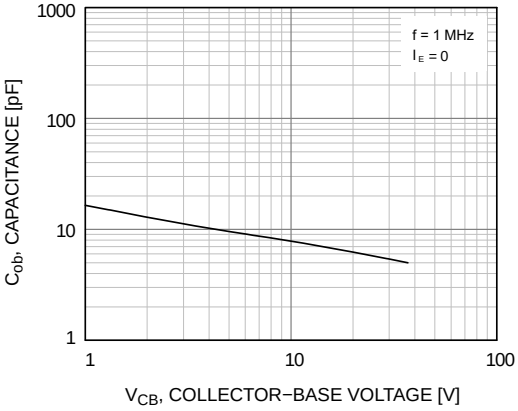

Figure 5. Collector Output Capacitance

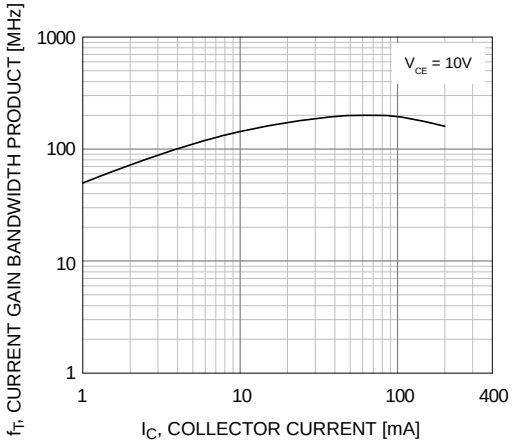

Figure 6. Current Gain Bandwidth Product

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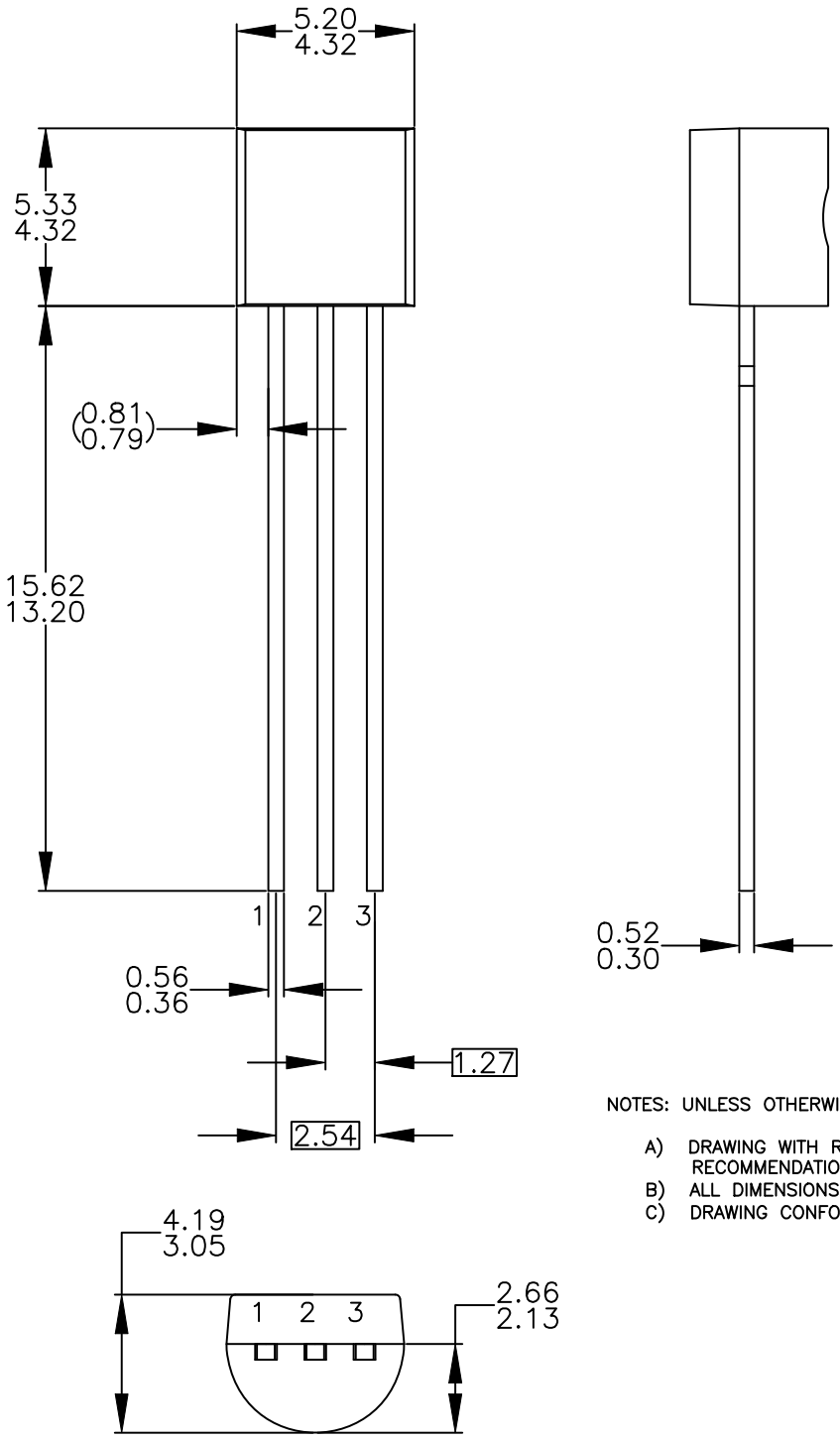

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ISSUE O

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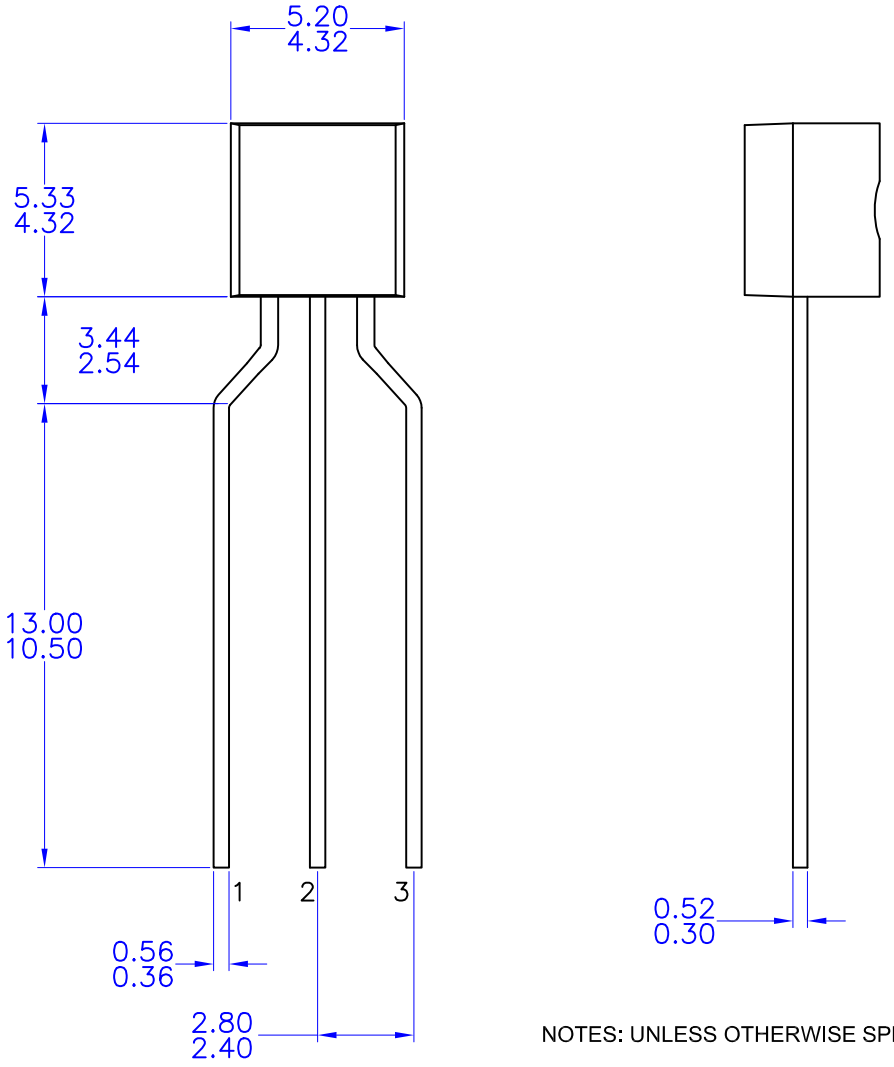

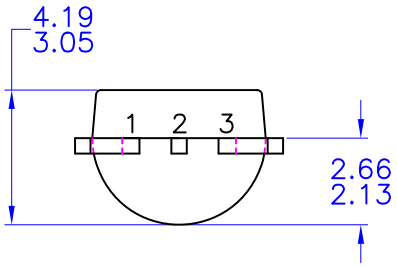

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