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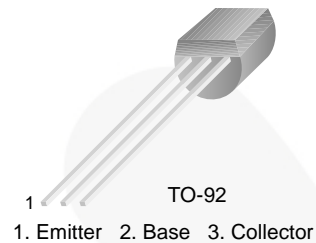
November 2014

# SS8050

## NPN Epitaxial Silicon Transistor

### Features

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



### 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  $T_A = 25^\circ\text{C}$  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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 to 150	$^\circ\text{C}$

**Thermal Characteristics<sup>(1)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

**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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \mu\text{A}$ , $I_E = 0$	40			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 2 \text{ mA}$ , $I_B = 0$	25			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \mu\text{A}$ , $I_C = 0$	6			V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 35 \text{ V}$ , $I_E = 0$			100	nA
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 6 \text{ V}$ , $I_C = 0$			100	nA
$h_{FE1}$	DC Current Gain	$V_{CE} = 1 \text{ V}$ , $I_C = 5 \text{ mA}$	45			
$h_{FE2}$		$V_{CE} = 1 \text{ V}$ , $I_C = 100 \text{ mA}$	85		300	
$h_{FE3}$		$V_{CE} = 1 \text{ V}$ , $I_C = 800 \text{ mA}$	40			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 800 \text{ mA}$ , $I_B = 80 \text{ mA}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 800 \text{ mA}$ , $I_B = 80 \text{ mA}$			1.2	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 1 \text{ V}$ , $I_C = 10 \text{ mA}$			1	V
$C_{ob}$	Output Capacitance	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		9.0		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 10 \text{ V}$ , $I_C = 50 \text{ mA}$	100			MHz

 **$h_{FE}$  Classification**

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

Typical Performance Characteristics

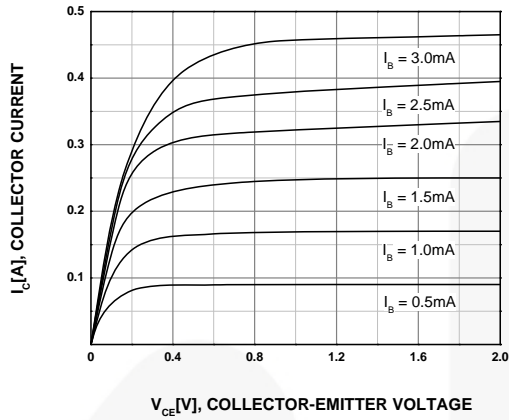


Figure 1. Static Characteristic

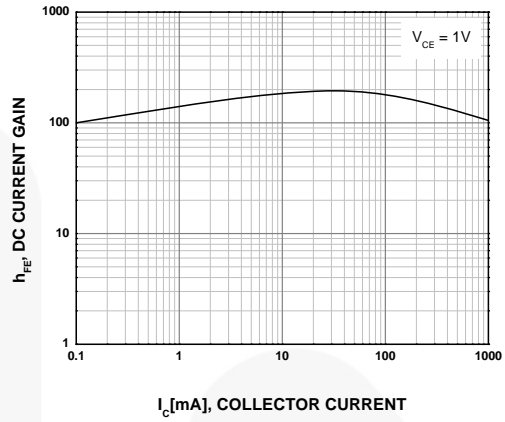


Figure 2. DC Current Gain

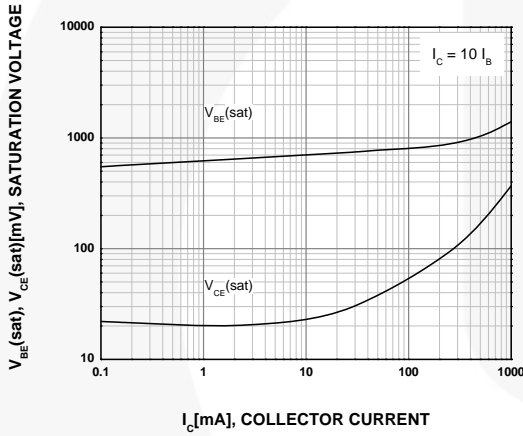


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

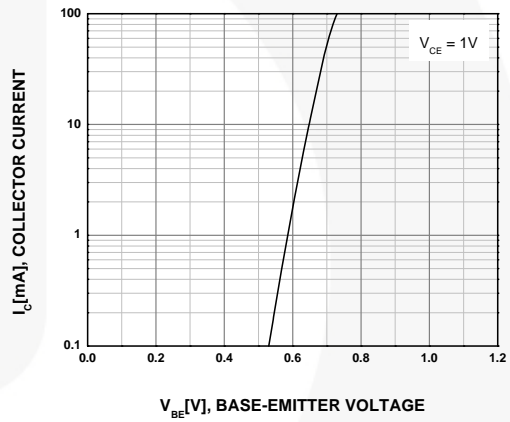


Figure 4. Base-Emitter On Voltage

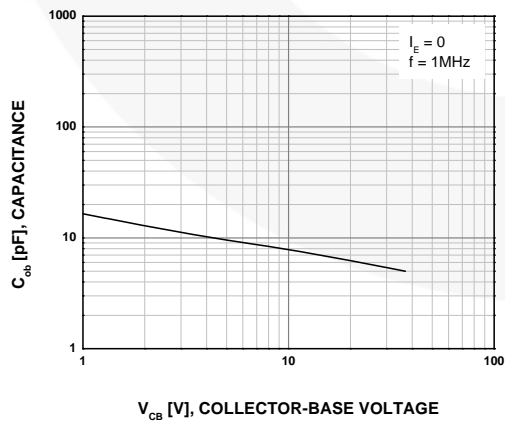


Figure 5. Collector Output Capacitance

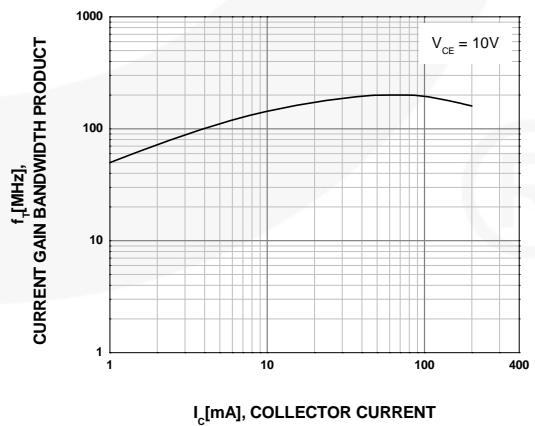
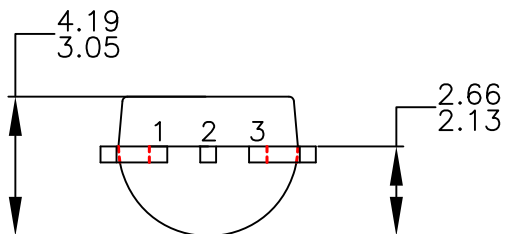
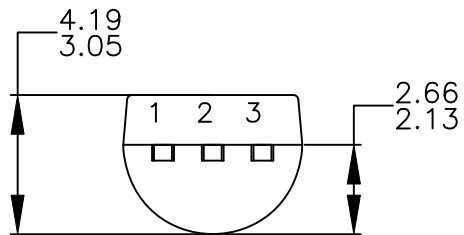
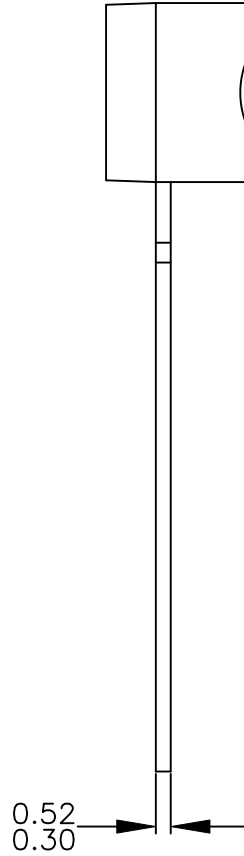
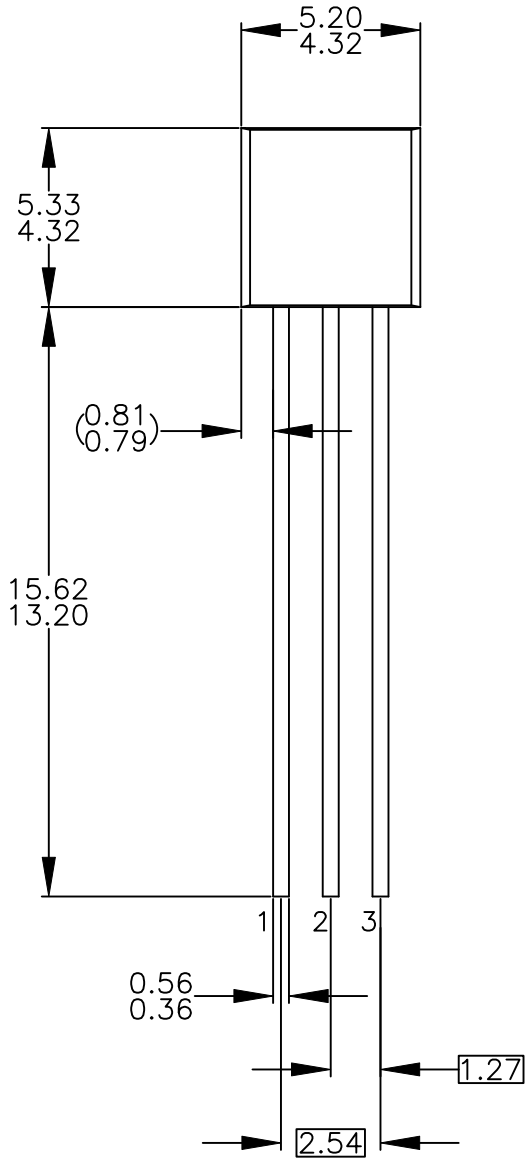


Figure 6. Current Gain Bandwidth Product



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