



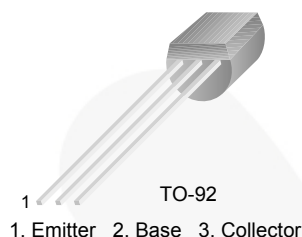
November 2014

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⁽¹⁾

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°C	8	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	$^\circ\text{C/W}$

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 $T_A = 25^\circ\text{C}$ 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

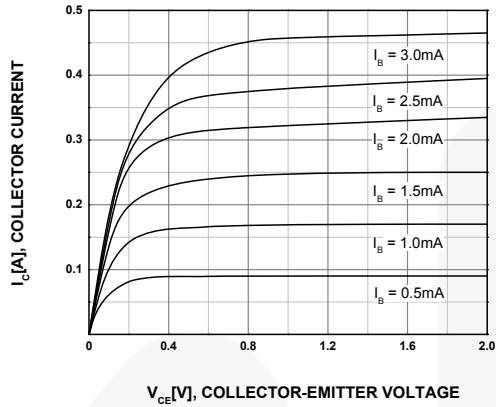


Figure 1. Static Characteristic

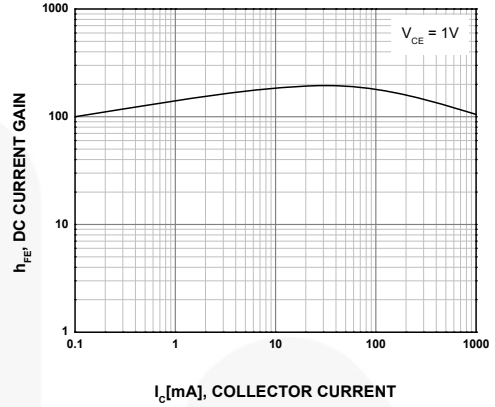


Figure 2. DC Current Gain

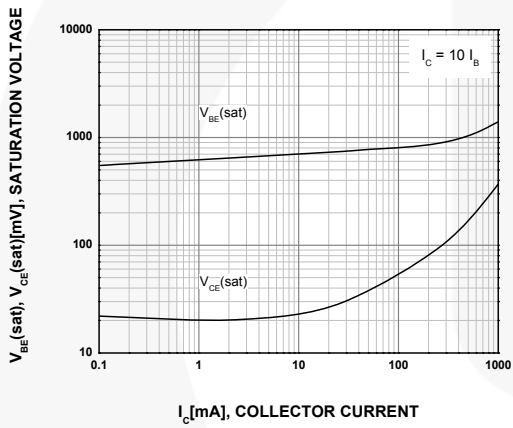


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

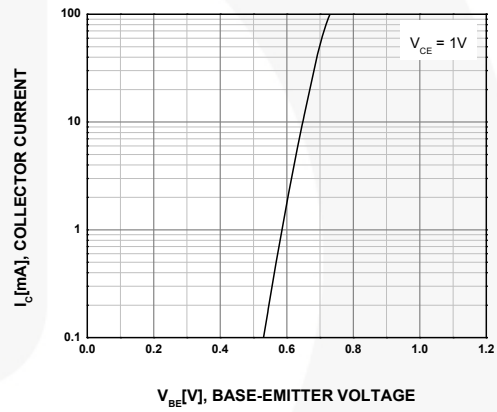


Figure 4. Base-Emitter On Voltage

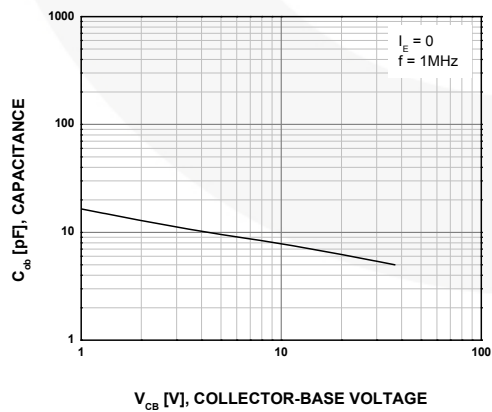


Figure 5. Collector Output Capacitance

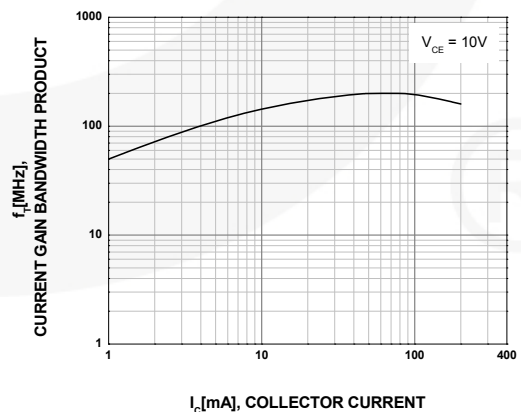


Figure 6. Current Gain Bandwidth Product