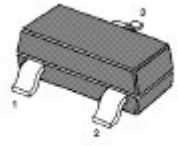
BC856…BC860 PNP Silicon Epitaxial Transistor

for switching and amplifier applications



1.BASE 2.EMITTER 3.COLLECTOR

SOT-23 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Base Voltage	BC856	$-V_{CBO}$	80	V
	BC857, BC860	$-V_{CBO}$	50	V
	BC858, BC859	$-V_{CBO}$	30	V
Collector Emitter Voltage	BC856	$-V_{CEO}$	65	V
	BC857, BC860	$-V_{CEO}$	45	V
	BC858, BC859	$-V_{CEO}$	30	V
Emitter Base Voltage		$-V_{EBO}$	5	V
Collector Current		$-I_C$	100	mA
Peak Collector Current		$-I_{CM}$	200	mA
Power Dissipation		P_{tot}	200	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 65 to + 150	°C

DEVICE MARKING

BC856A=3A;BC856B=3B;BC856C=3C;
BC857A=3E;BC857B=3F;BC857C=3G;
BC858A=3J; BC858B=3H; BC858C=3D
BC859A=4A;BC859B=4B;BC859C=4C;
BC860A=4E;BC860B=4F;BC860C=4G;

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 5 V, $-I_C$ = 2 mA	Current Gain Group A B C	h_{FE} h_{FE} h_{FE}	110 200 420	220 450 800	- - -
Collector Base Cutoff Current at $-V_{CB}$ = 30 V		$-I_{CBO}$	-	15	nA
Collector Base Breakdown Voltage at $-I_C$ = 10 µA	BC856 BC857, BC860 BC858, BC859	$-V_{(BR)CBO}$ $-V_{(BR)CBO}$ $-V_{(BR)CBO}$	80 50 30	- - -	V V V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 µA	BC856 BC857, BC860 BC858, BC859	$-V_{(BR)CES}$ $-V_{(BR)CES}$ $-V_{(BR)CES}$	80 50 30	- - -	V V V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA	BC856 BC857, BC860 BC858, BC859	$-V_{(BR)CEO}$ $-V_{(BR)CEO}$ $-V_{(BR)CEO}$	65 45 30	- - -	V V V
Emitter Base Breakdown Voltage at $-I_E$ = 1 µA		$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 10 mA, $-I_B$ = 0.5 mA at $-I_C$ = 100 mA, $-I_B$ = 5 mA		$-V_{CE(sat)}$ $-V_{CE(sat)}$	- -	0.3 0.65	V V
Base Emitter On Voltage at $-I_C$ = 2 mA, $-V_{CE}$ = 5 V at $-I_C$ = 10 mA, $-V_{CE}$ = 5 V		$-V_{BE(on)}$ $-V_{BE(on)}$	0.6 -	0.75 0.82	V V
Current Gain Bandwidth Product at $-V_{CE}$ = 5 V, $-I_C$ = 10 mA, f = 100 MHz		f_T	100	-	MHz
Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz		C_{ob}	-	6	pF
Noise Figure at $-I_C$ = 200 µA, $-V_{CE}$ = 5 V, R_G = 2 KΩ, f = 1 KHz at $-I_C$ = 200 µA, $-V_{CE}$ = 5 V, R_G = 2 KΩ, f = 30 ~15 KHz	BC856, BC857, BC858 BC859, BC860 BC859 BC860	NF	- - - -	10 4 4 2	dB

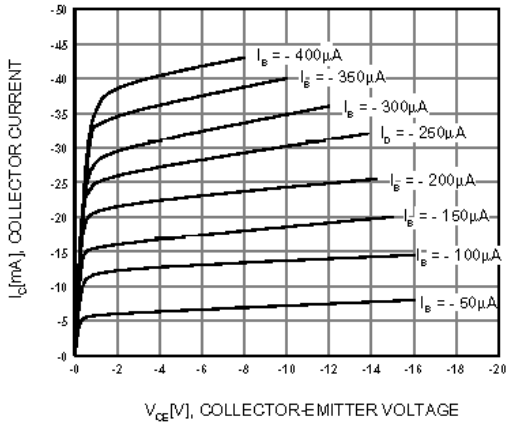


Figure 1. Static Characteristic

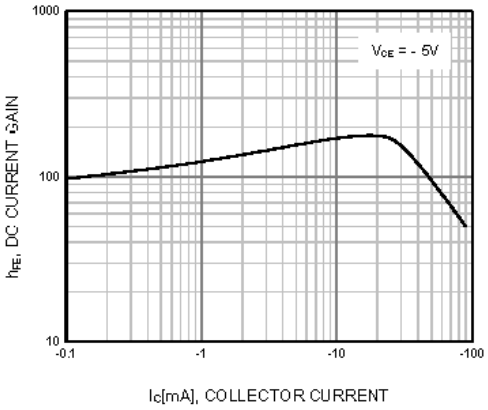


Figure 2. DC current Gain

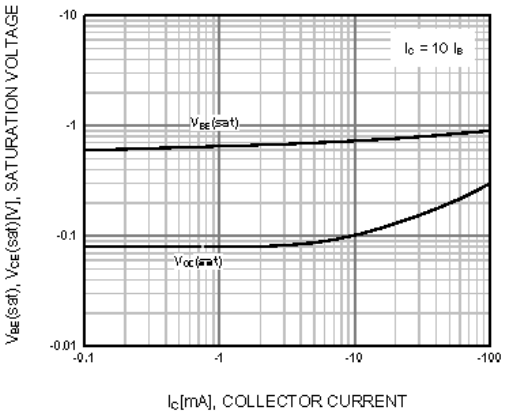


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

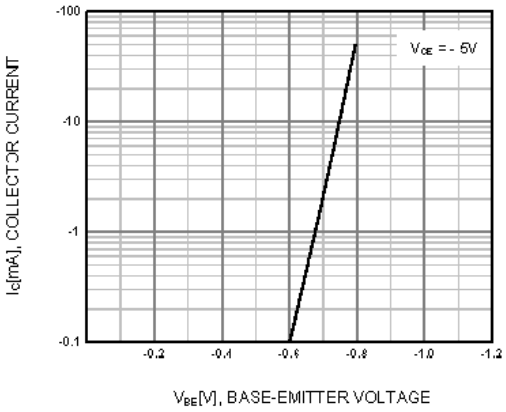


Figure 4. Base-Emitter On Voltage

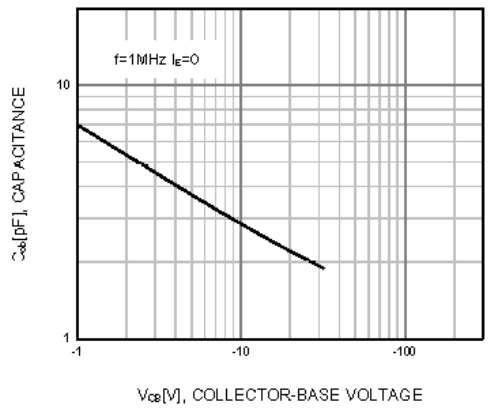


Figure 5. Collector Output Capacitance

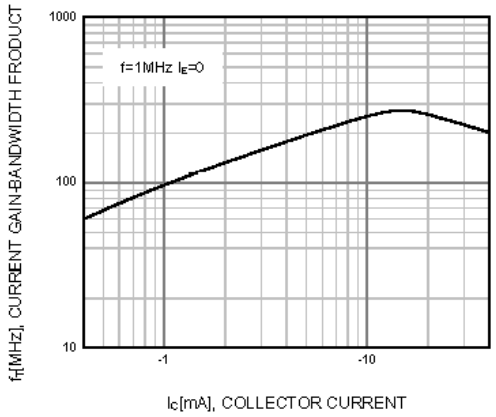
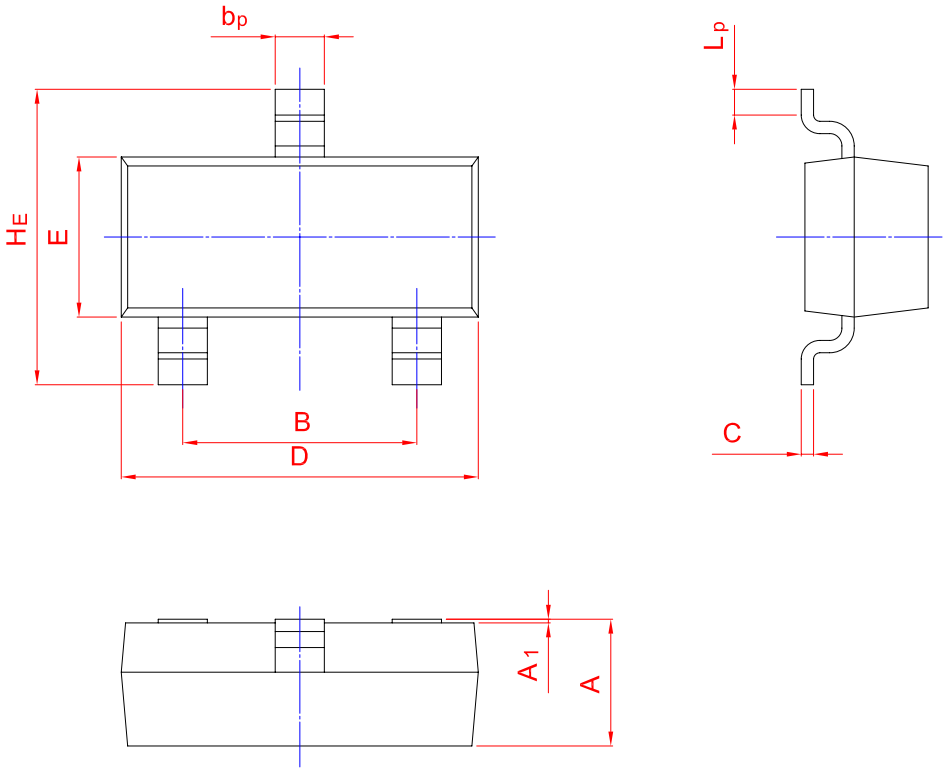


Figure 6. Current Gain Bandwidth Product

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20