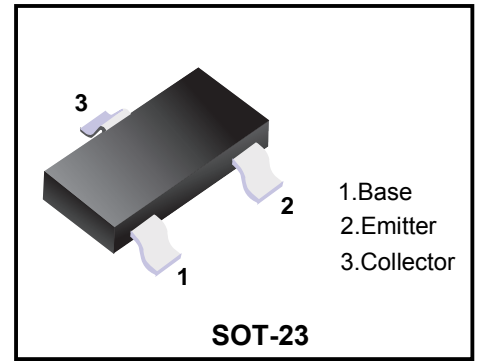


**PNP Silicon Epitaxial Transistor**

for switching and amplifier applications



**Absolute Maximum Ratings (Ta = 25°C)**

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	BC856	-80
		BC857, BC860	-50
		BC858, BC859	-30
Collector Emitter Voltage	$V_{CEO}$	BC856	-65
		BC857, BC860	-45
		BC858, BC859	-30
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

**hFE Classification**

<b>TYPE</b>	BC856A	BC856B	BC856C	BC857A	BC857B	BC857C	BC858A	BC858B	BC858C
<b>MARKING</b>	3A	3B	3C	3E	3F	3G	3J	3K	3L
<b>Range</b>	110~220	200~450	420~800	110~220	200~450	420~800	110~220	200~450	420~800
<b>TYPE</b>	BC859A	BC859B	BC859C	BC860A	BC860B	BC860C			
<b>MARKING</b>	4A	4B	4C	4E	4F	4G			
<b>Range</b>	110~220	200~450	420~800	110~220	200~450	420~800			

**Characteristics at Ta = 25°C**

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

Typical Characteristics

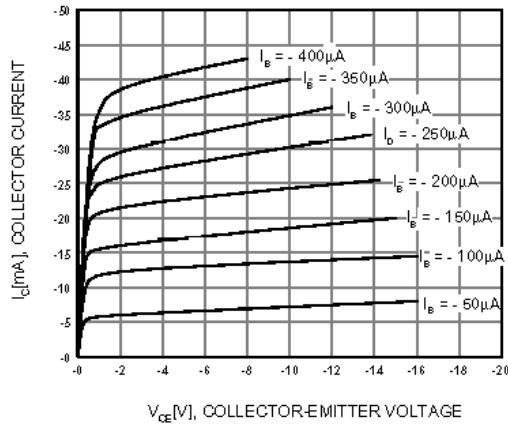


Figure 1. Static Characteristic

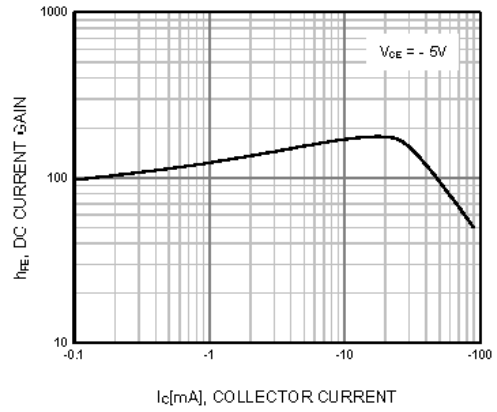


Figure 2. DC current Gain

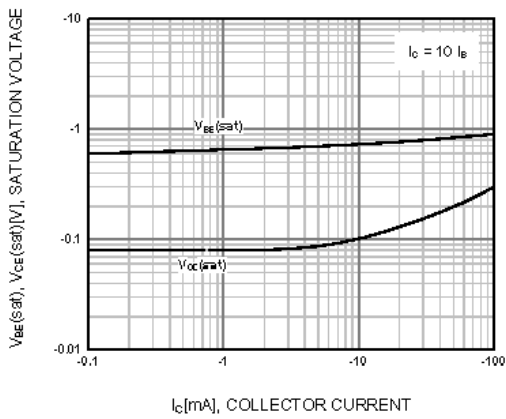


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

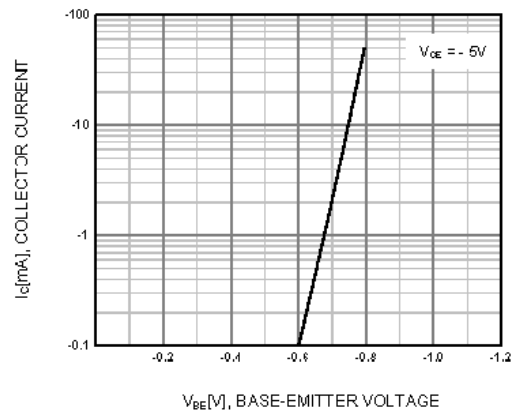


Figure 4. Base-Emitter On Voltage

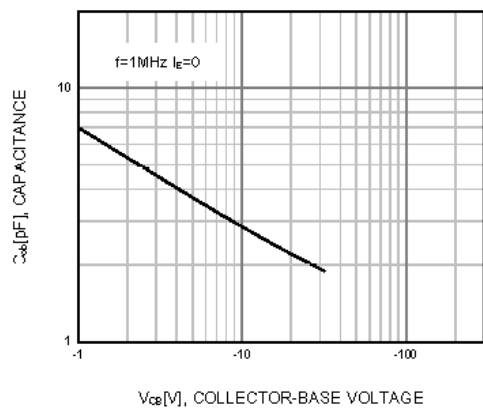


Figure 5. Collector Output Capacitance

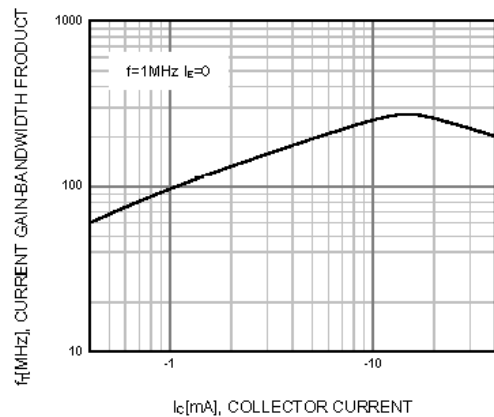


Figure 6. Current Gain Bandwidth Product

**Ordering information**

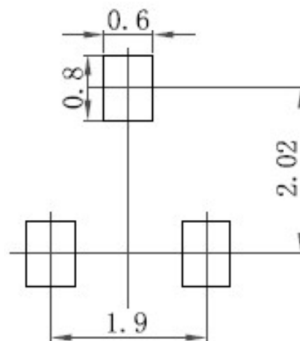
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

**Package Dimensions**

**SOT-23**

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

**The recommended mounting pad size**



## Disclaimer

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