

BC856-HF Thru. BC858-HF Series (PNP)

RoHS Device
Halogen Free



Features

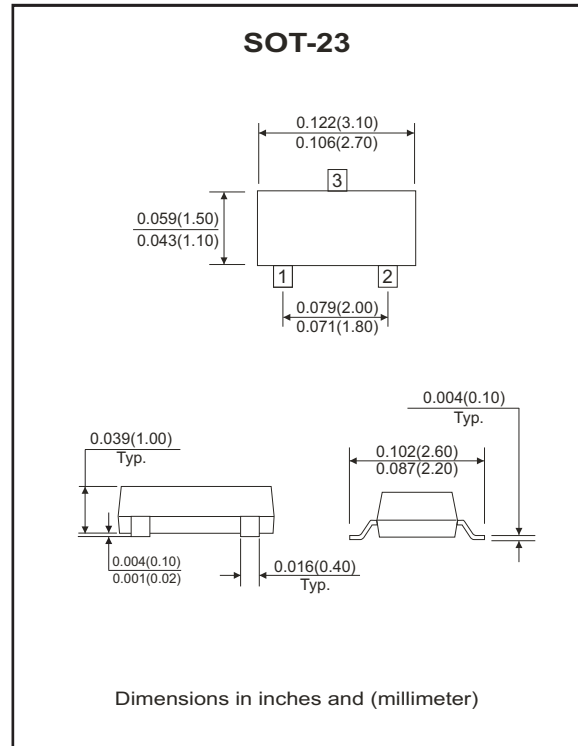
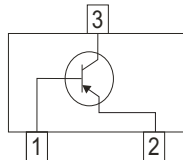
- Ideally suited for automatic insertion
- Power dissipation
PCM: 0.25W (@TA=25°C)
- Low current.(max. 100mA)
- Collector-base voltage
VCBO: BC856 = -80V
BC857 = -50V
BC858 = -30V
- Operating and storage junction temperature range: TJ, TSTG= -65 to +150°C

Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

Circuit diagram

- 1.BASE
- 2.EMITTER
- 3.COLLECTOR



Maximum Ratings (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base voltage	BC856 BC857 BC858 VCBO	-80 -50 -30	V
Collector-Emitter voltage	BC856 BC857 BC858 VCEO	-65 -45 -30	V
Emitter-Base voltage	VEBO	-5	V
Collector current-continuous	Ic	-0.1	A
Collector dissipation	Pc	250	mW
Junction temperature range	TJ	-65 to +150	°C
Storage temperature range	TSTG	-65 to +150	°C

General Purpose Transistor

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Collector-Base breakdown voltage	BC856 BC857 BC858 $V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-80 -50 -30			V
Collector-Emitter breakdown voltage	BC856 BC857 BC858 $V_{(BR)CEO}$	$I_C = -10\text{mA}$, $I_B = 0$	-65 -45 -30			V
Emitter-Base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\mu\text{A}$, $I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -30\text{V}$, $I_E = 0$		-1	-15	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$			-0.1	μA
DC current gain	BC856A, 857A, 858A BC856B, 857B, 858B BC857C, 858C h_{FE}	$V_{CE} = -5\text{V}$, $I_C = -2.2\text{mA}$	125 220 420		250 475 800	
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}$, $I_B = -5\text{mA}$ $I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$			-0.65 -0.3	V
Base-Emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$ $I_C = -100\text{mA}$, $I_B = -5\text{mA}$		-0.7 -0.85		V
Base-Emitter voltage	$V_{BE(on)}$	$I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$ $I_C = -10\text{mA}$, $V_{CE} = -5\text{V}$	-0.6	-0.65	-0.75 -0.82	V
Collector capacitance	C_C	$V_{CB} = -10\text{V}$, $I_E = I_C = 0$ $f = 1\text{MHz}$		4.5		pF
Transition frequency	F	$I_C = -200\mu\text{A}$, $V_{CE} = -5\text{V}$ $R_S = 2\text{k}\Omega$, $f = 1\text{kHz}$, $B = 200\text{Hz}$		2	10	dB
Transition frequency	f_T	$V_{CE} = -5\text{V}$, $I_C = -10\text{mA}$ $f = 100\text{MHz}$	100			MHz

Electrical Characteristic Curves (BC856-HF Thru. BC858-HF Series)

Fig.1 - DC current gain as a function fo collector current; typical values.

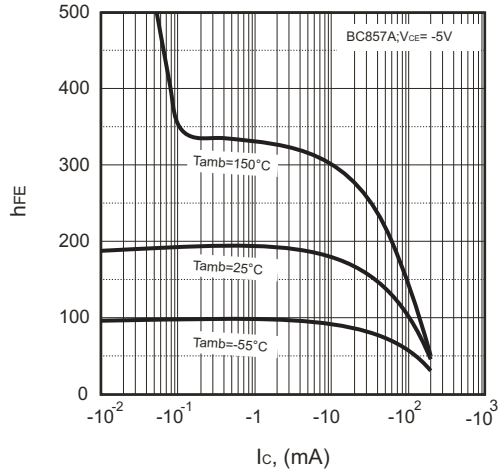


Fig.2 - Base-Emitter voltage as a function of collector current; typical values

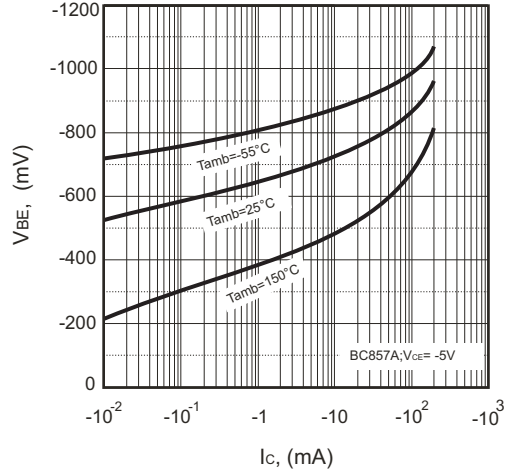


Fig.3 - Collector-Emitter saturation voltage as a function of collector current; typical values.

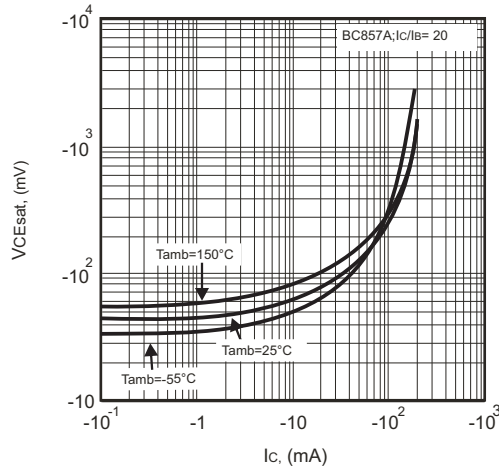


Fig.4 - Base-Emitter saturation voltage as a function of collector current; typical values

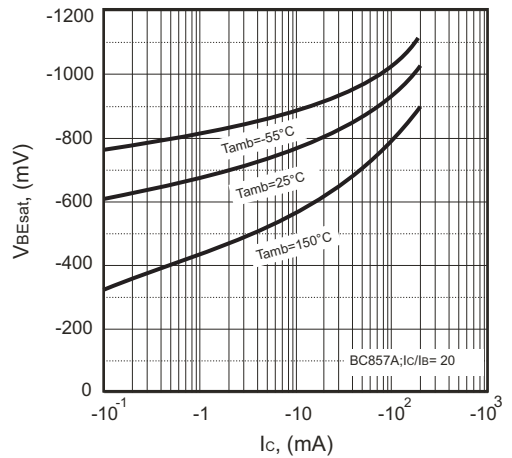


Fig.5 - DC current gain as a function fo collector current; typical values.

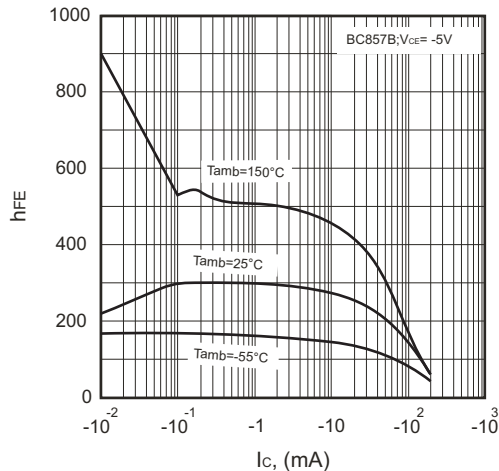
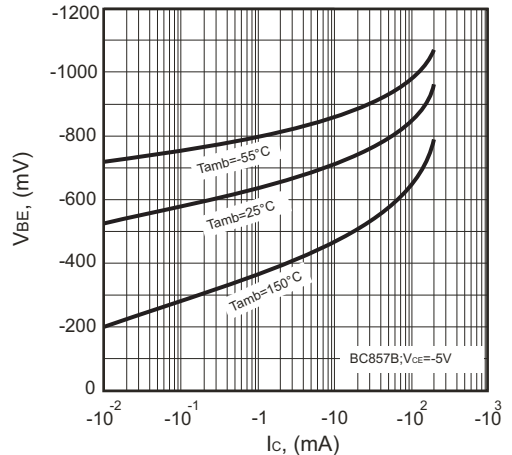


Fig. 6 - Base-Emitter voltage as a function of collector current; typical values.



Electrical Characteristic Curves (BC856-HF Thru. BC858-HF Series)

Fig.7 - Collector-Emmitter saturation voltage as a function of collector current typical values.

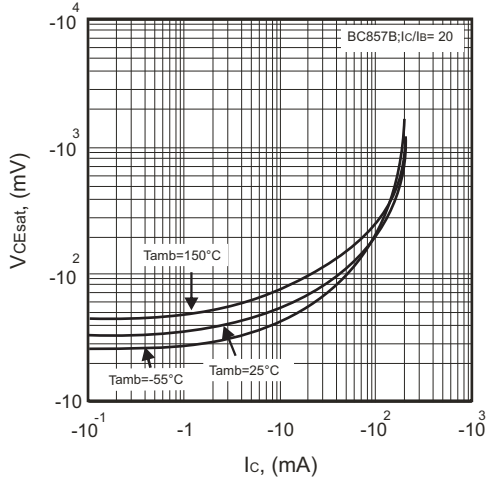


Fig.8 - Base-Emmitter saturation voltage as a function of collector current; typical values

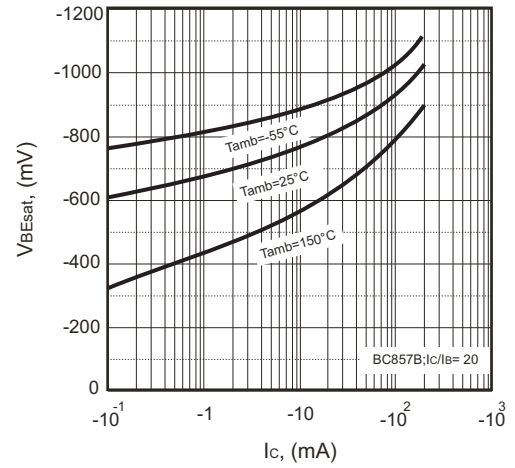


Fig.9 - DC current gain as a function fo collector current; typical values.

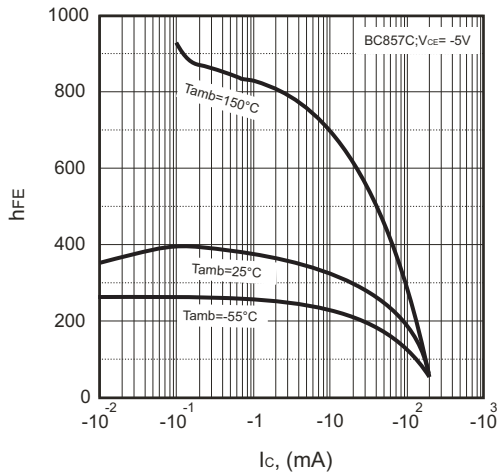


Fig.10 - Base-Emmitter voltage as a function of collector current; typical values

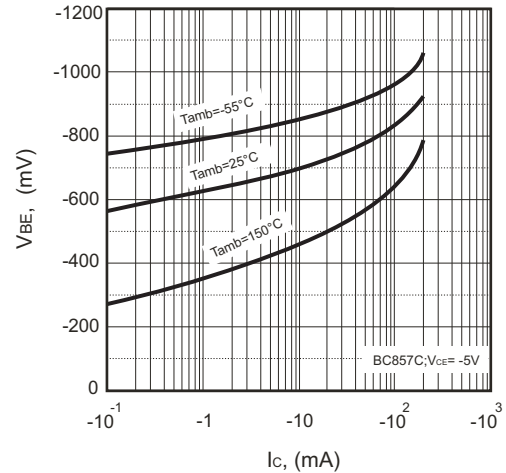


Fig.11 - Collector-Emmitter saturation voltage as a function of collector current; typical values.

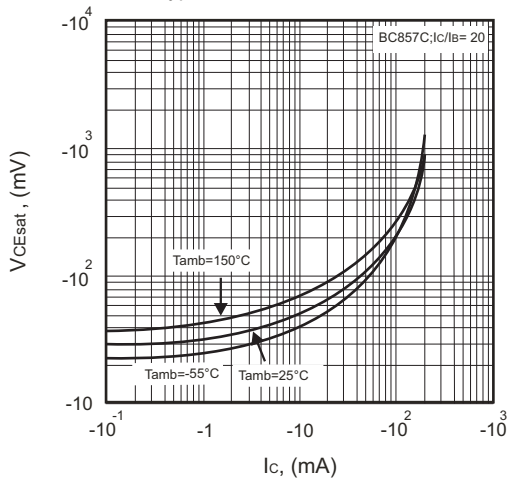
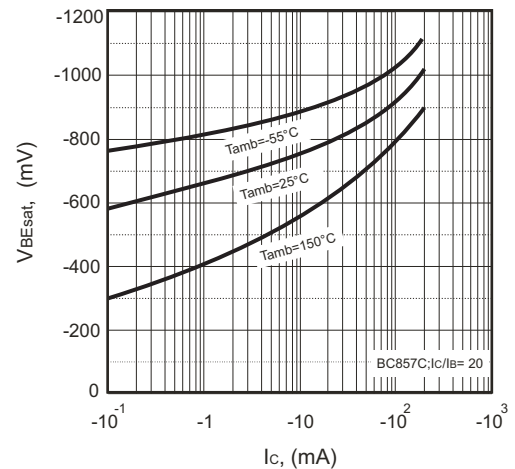
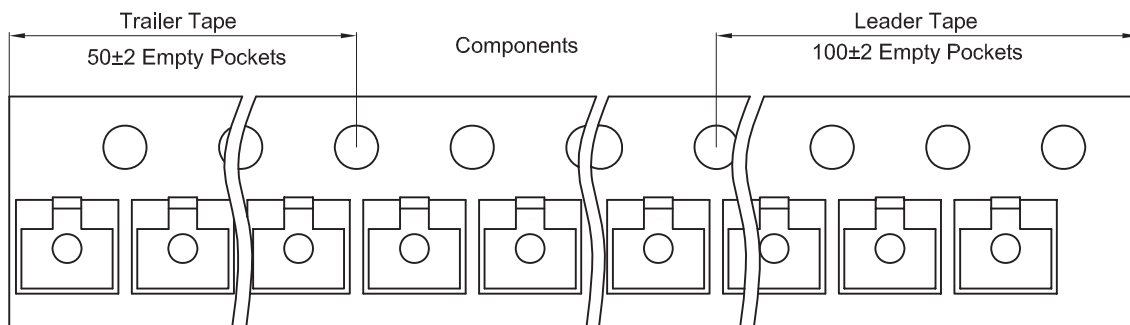
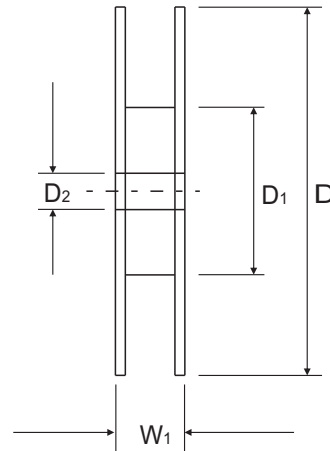
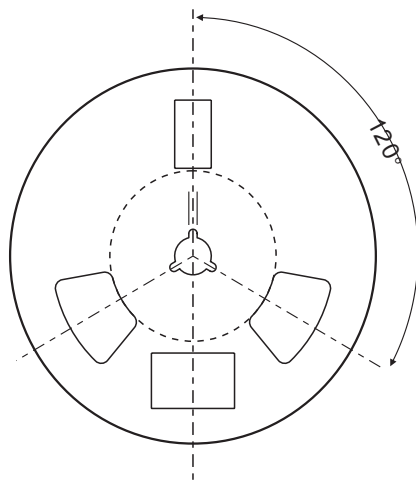
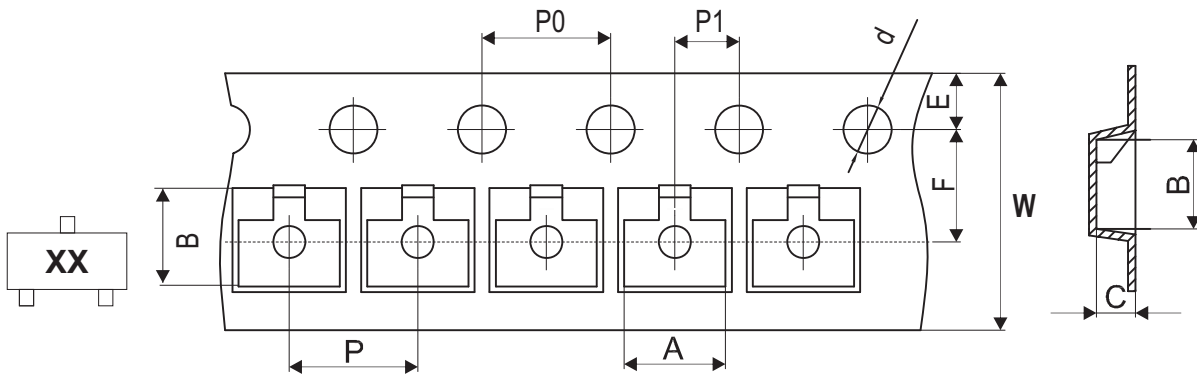


Fig.12 - Base-Emmitter saturation voltage as a function of collector current; typical values



Reel Taping Specification

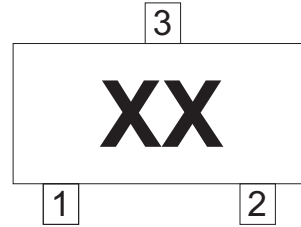


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.40 ± 0.50	13.00 ± 0.50
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.142 ± 0.020	0.512 ± 0.020

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 + 0.30 / - 0.10	12.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 + 0.012 / - 0.004	0.492 ± 0.039

Marking Code

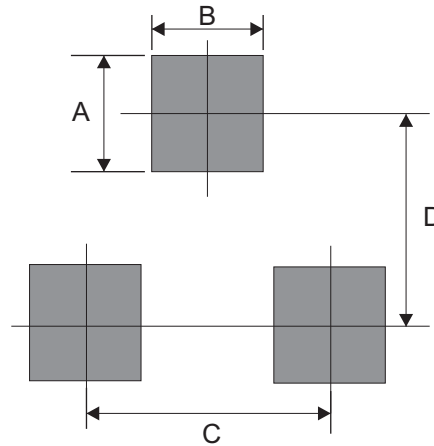
Part Number	Marking Code
BC856A-HF	3A
BC857A-HF	3E
BC858A-HF	3J
BC856B-HF	3B
BC857B-HF	3F
BC858B-HF	3K
BC857C-HF	3G
BC858C-HF	3L



xx = Product type marking code

Suggested PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	1.90	0.075
D	2.00	0.079



Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3,000	7

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