General Purpose Transistor

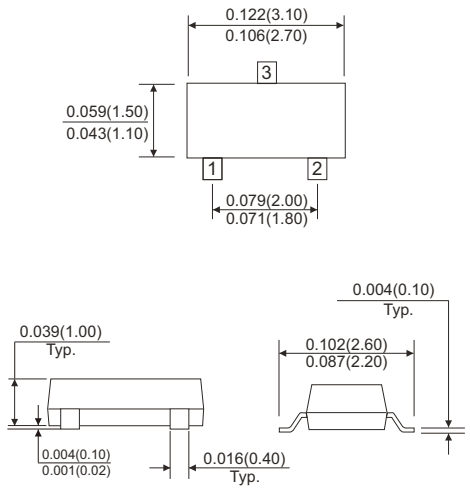
BC856-HF Thru. BC858-HF Series (PNP)

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

SOT-23



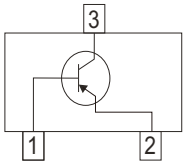
Dimensions in inches and (millimeter)

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

Electrical Characteristics (TA= 25°C unless otherwise specified)

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

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

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

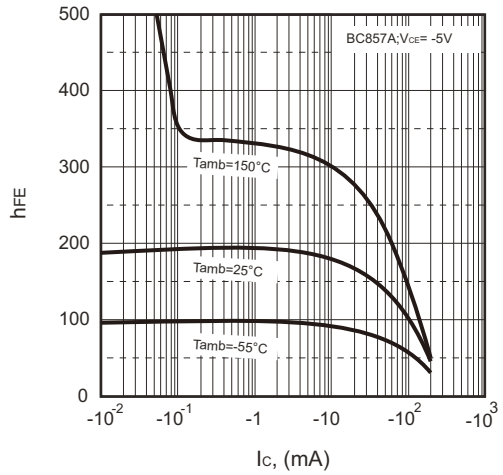


Fig.2 - Base-Emitter voltage as a function of collector current; typical values

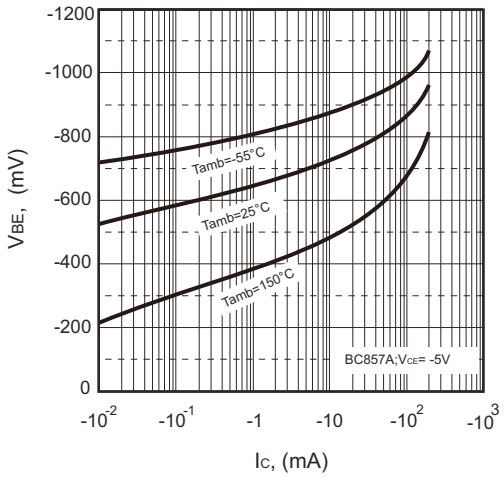


Fig.3 - Collector-Emitter saturation voltage as a function of collector current; typical values.

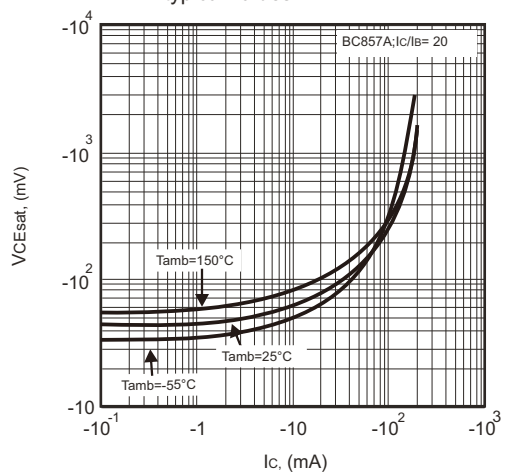


Fig.4 - Base-Emitter saturation voltage as a function of collector current; typical values

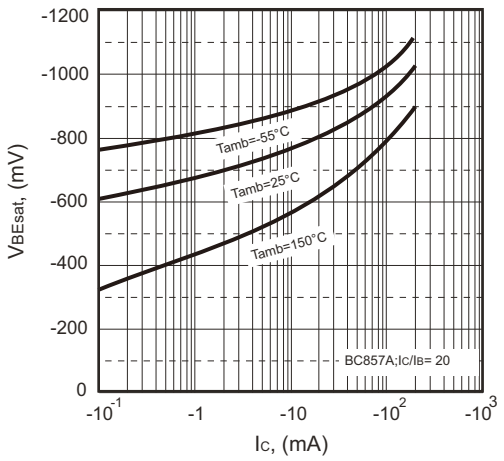


Fig.5 - DC current gain as a function fo collector current; typical values.

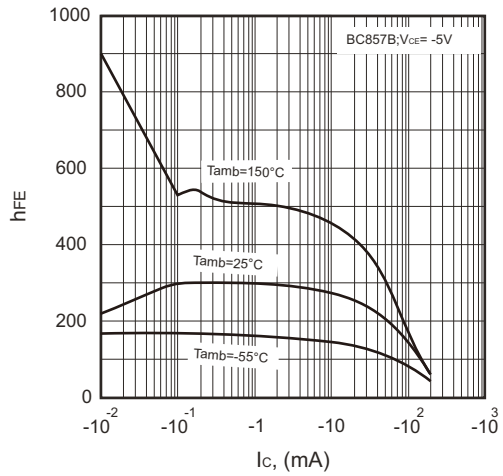
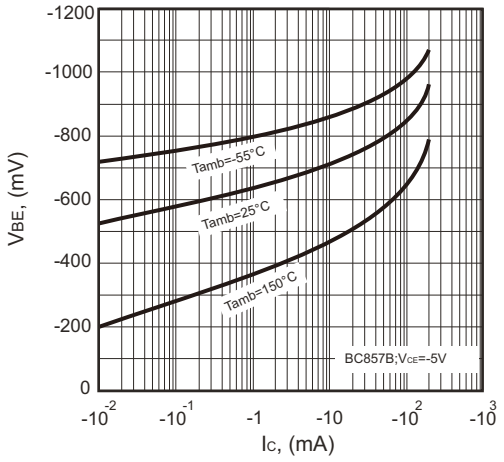


Fig. 6 - Base-Emitter voltage as a function of collector current; typical values.



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

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

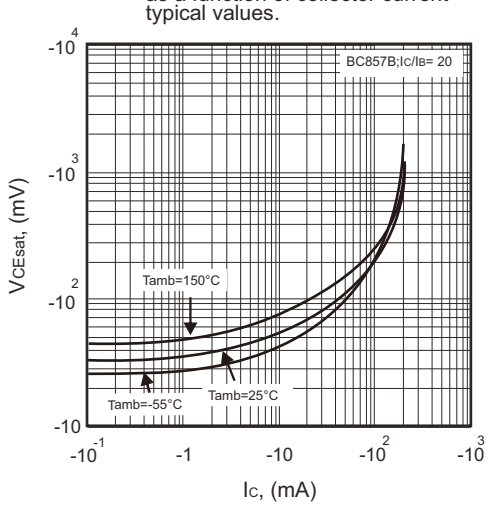


Fig.8 - Base-Emitter saturation voltage as a function of collector current; typical values

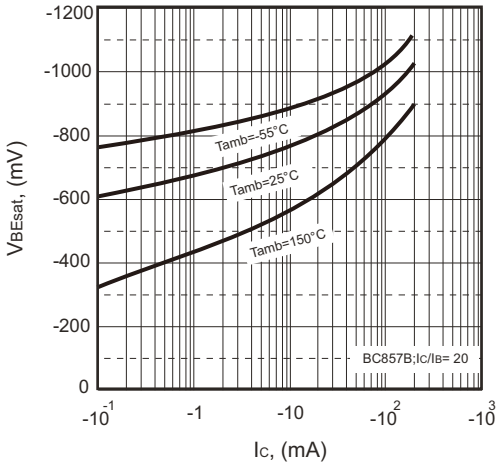


Fig.9 - DC current gain as a function fo collector current; typical values.

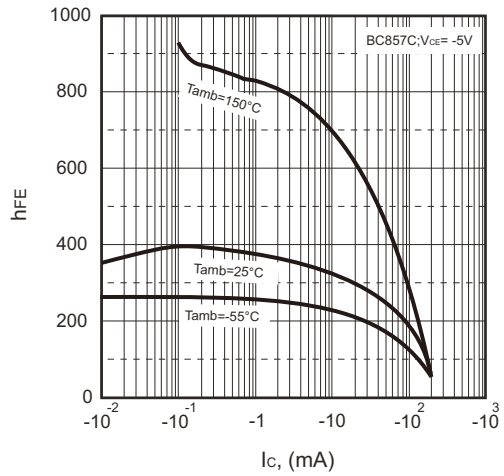


Fig.10 - Base-Emitter voltage as a function of collector current; typical values

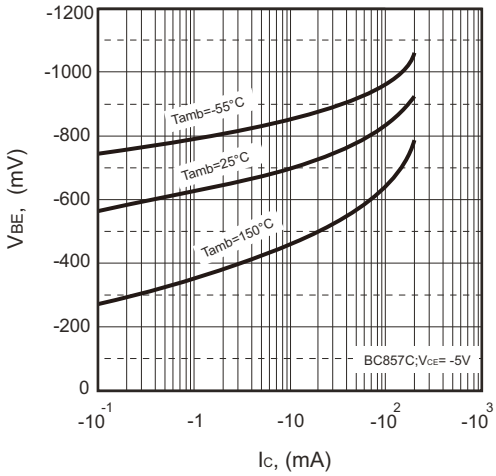


Fig.11 - Collector-Emitter saturation voltage as a function of collector current; typical values.

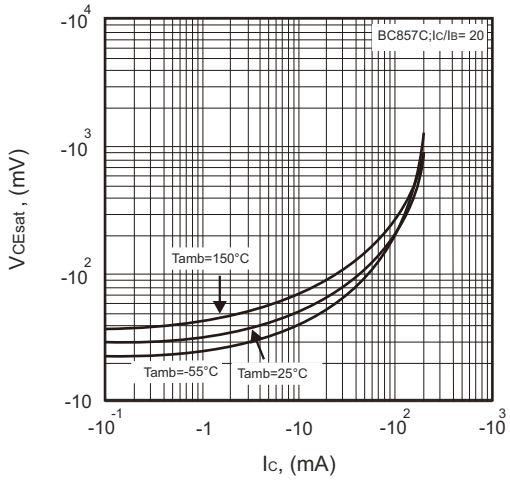
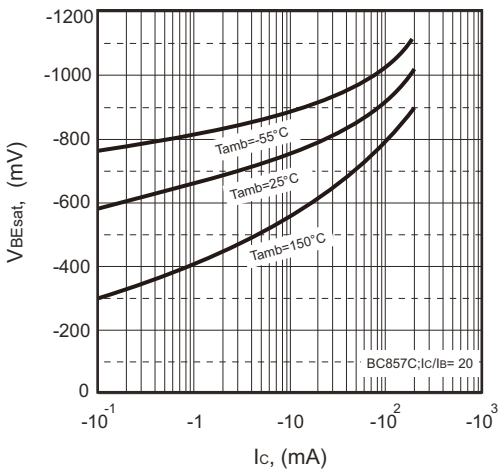
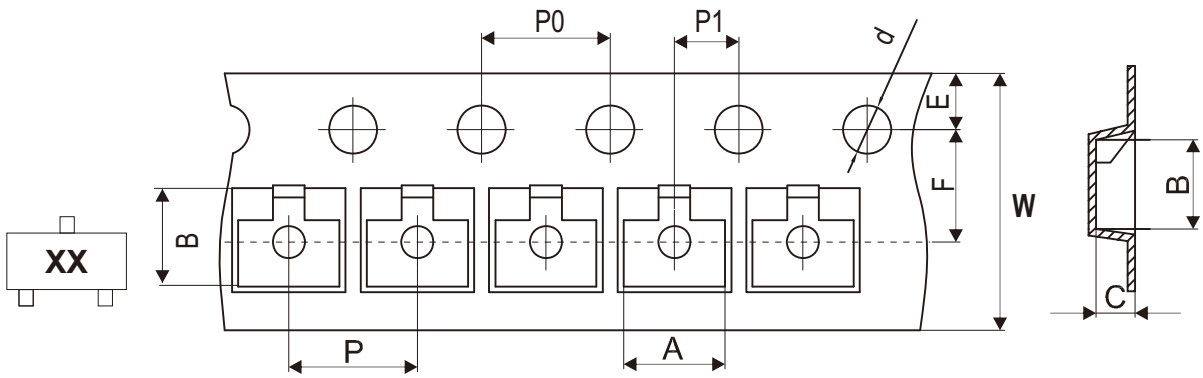
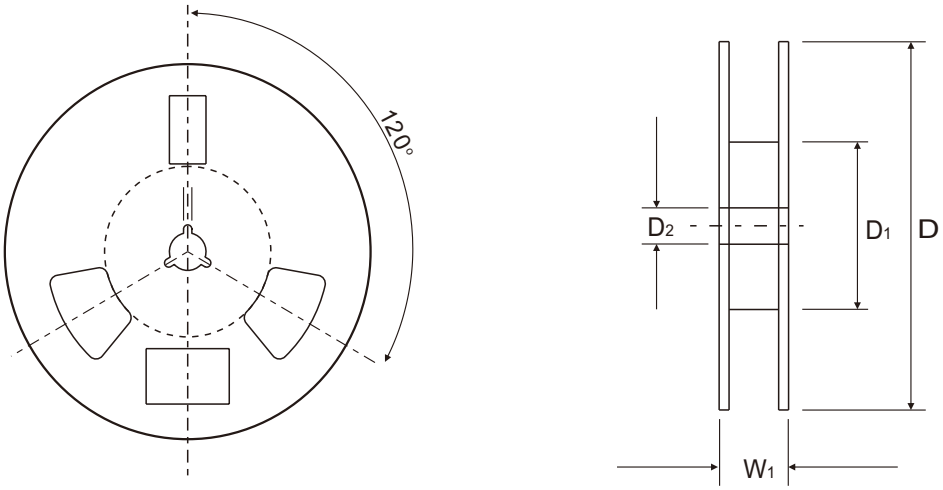


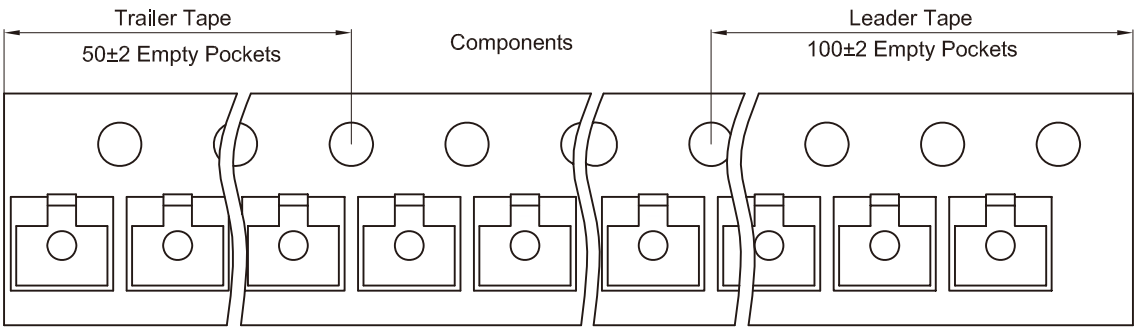
Fig.12 - Base-Emitter saturation voltage as a function of collector current; typical values



Reel Taping Specification





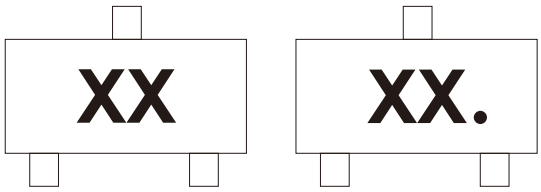


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-23	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.40 ± 0.50	13.00 ± 0.50
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.142 ± 0.020	0.512 ± 0.020

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-23	(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

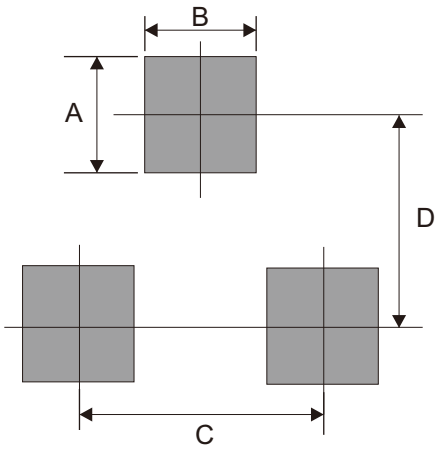
Part Number	Marking Code
BC856A-HF	3A
BC857A-HF	3E
BC858A-HF	3J
BC856B-HF	3B
BC857B-HF	3F
BC858B-HF	3K
BC857C-HF	3G
BC858C-HF	3L



XX = Product type marking code
Solid dot = Control code

Suggested P.C.B. 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	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7