

BC846A-G Thru. BC848C-G (NPN)

RoHS Device

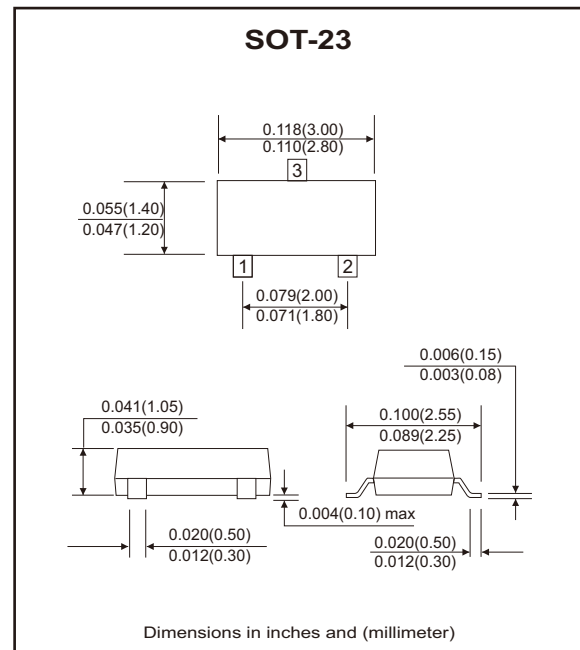


Features

- Power dissipation
PCM: 0.20W (@TA=25°C)
- Collector current
ICM: 0.1A
- Collector-base voltage
VCBO: BC846=80V
BC847=50V
BC848=30V
- Operating and storage junction temperature
range: TJ, TSTG= -65 to +150°C

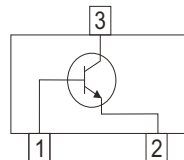
Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Weight: 0.008 grams (approx.).



Circuit Diagram

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



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

Parameter	Symbol	Value	UNIT
Collector-base voltage	BC846-G BC847-G BC848-G	80 50 30	V
Collector-emitter voltage	BC846-G BC847-G BC848-G	65 45 30	V
Emitter-base voltage	VEBO	6	V
Collector current-continuous	IC	0.1	A
Collector power dissipation	PC	200	mW
Junction temperature	TJ	150	°C
Storage temperature range	TSTG	-65 to +150	°C

Electrical Characteristics (BC846A-G Thru. BC848C-G, @TA= 25 °C unless otherwise specified)

Parameter	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Collector-base breakdown voltage BC846-G BC847-G BC848-G	V _{CBO}	I _C = 10μA, I _E = 0	80 50 30			V
Collector-emitter breakdown voltage BC846-G BC847-G BC848-G	V _{CEO}	I _C = 10mA, I _B = 0	65 45 30			V
Emitter-base break voltage	V _{EBO}	I _E = 10μA, I _C = 0	6			V
Collector cut-off current BC846-G BC847-G BC848-G	I _{CBO}	V _{CB} = 70V, I _E = 0 V _{CB} = 50V, I _E = 0 V _{CB} = 30V, I _E = 0			0.1	μA
Collector cut-off current BC846-G BC847-G BC848-G	I _{CEO}	V _{CB} = 60V, I _E = 0 V _{CB} = 45V, I _E = 0 V _{CB} = 30V, I _E = 0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 5V, I _C = 0			0.1	μA
DC current gain BC846A,BC847A,BC848A BC846B,BC847B,BC848B BC847C,BC848C	h _{FE}	V _{CE} = 5V, I _C = 2mA	110 200 420		220 450 800	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 100mA, I _B = 5mA			0.5	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 100mA, I _B = 5mA			1.1	V
Transition frequency	f _T	V _{CE} = 5V, I _C = 10mA f = 100MHz	100			MHz
Collector output capacitance	C _{ob}	V _{CB} = 10V, f = 1MHz			4.5	pF

Electrical Characteristic Curves (BC846A-G Thru. BC848C-G)

Fig.1 - Static Characteristic

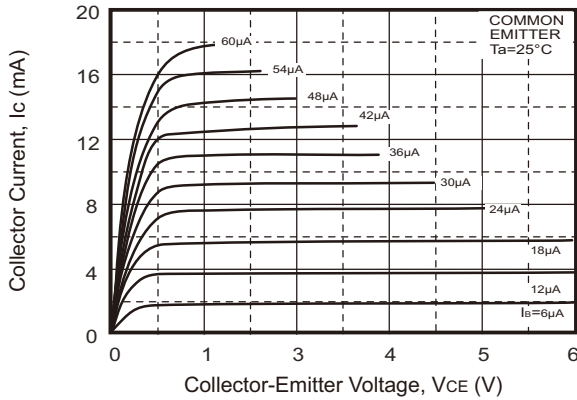


Fig.2 - $h_{FE} - I_c$

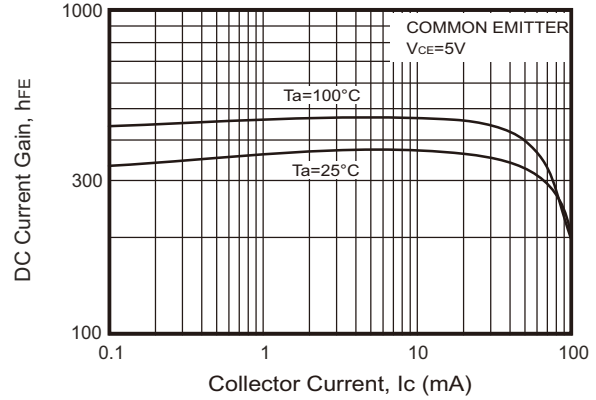


Fig.3 - $V_{CEsat} - I_c$

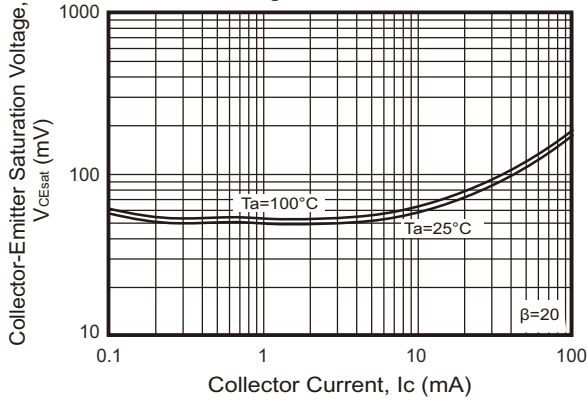


Fig.4 - $V_{BEsat} - I_c$

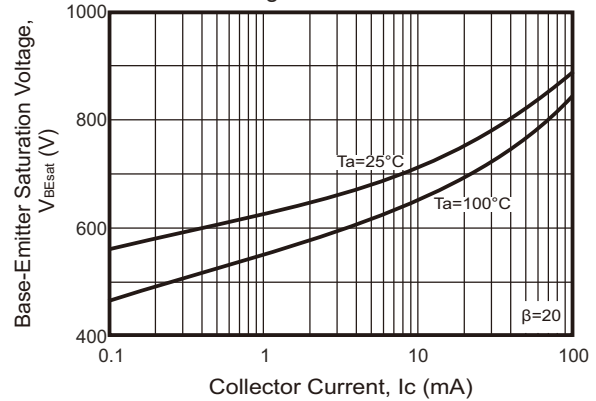


Fig.5 - $I_c - V_{BE}$

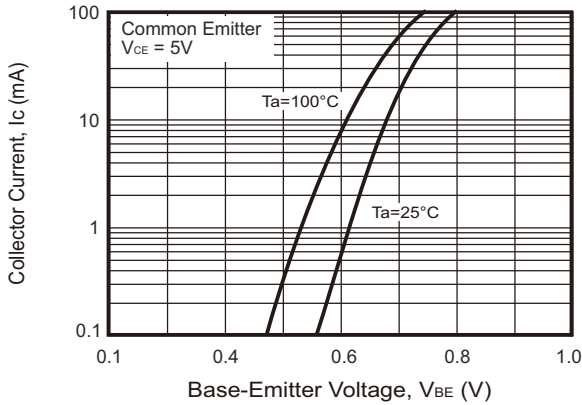


Fig.6 - $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

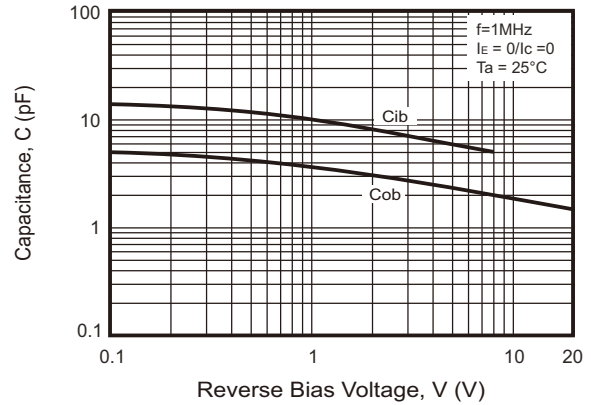


Fig.7 - $f_T - I_c$

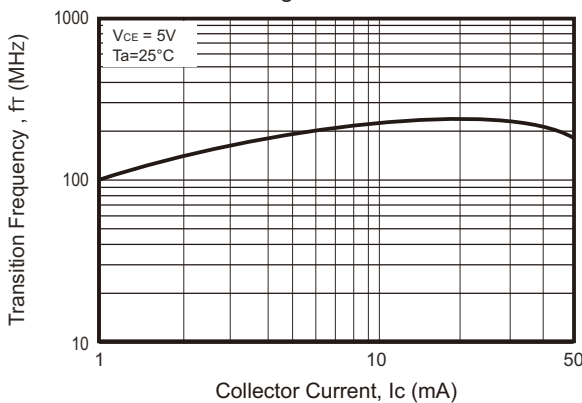
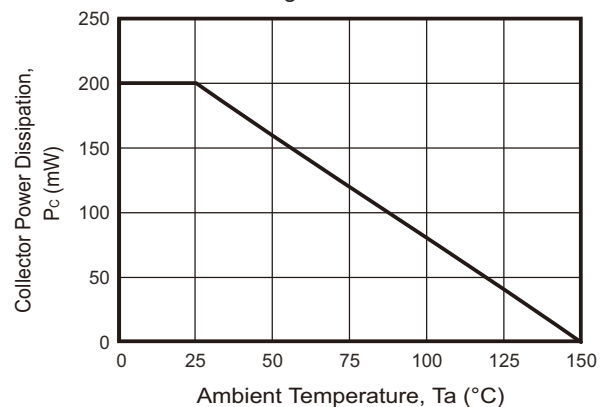
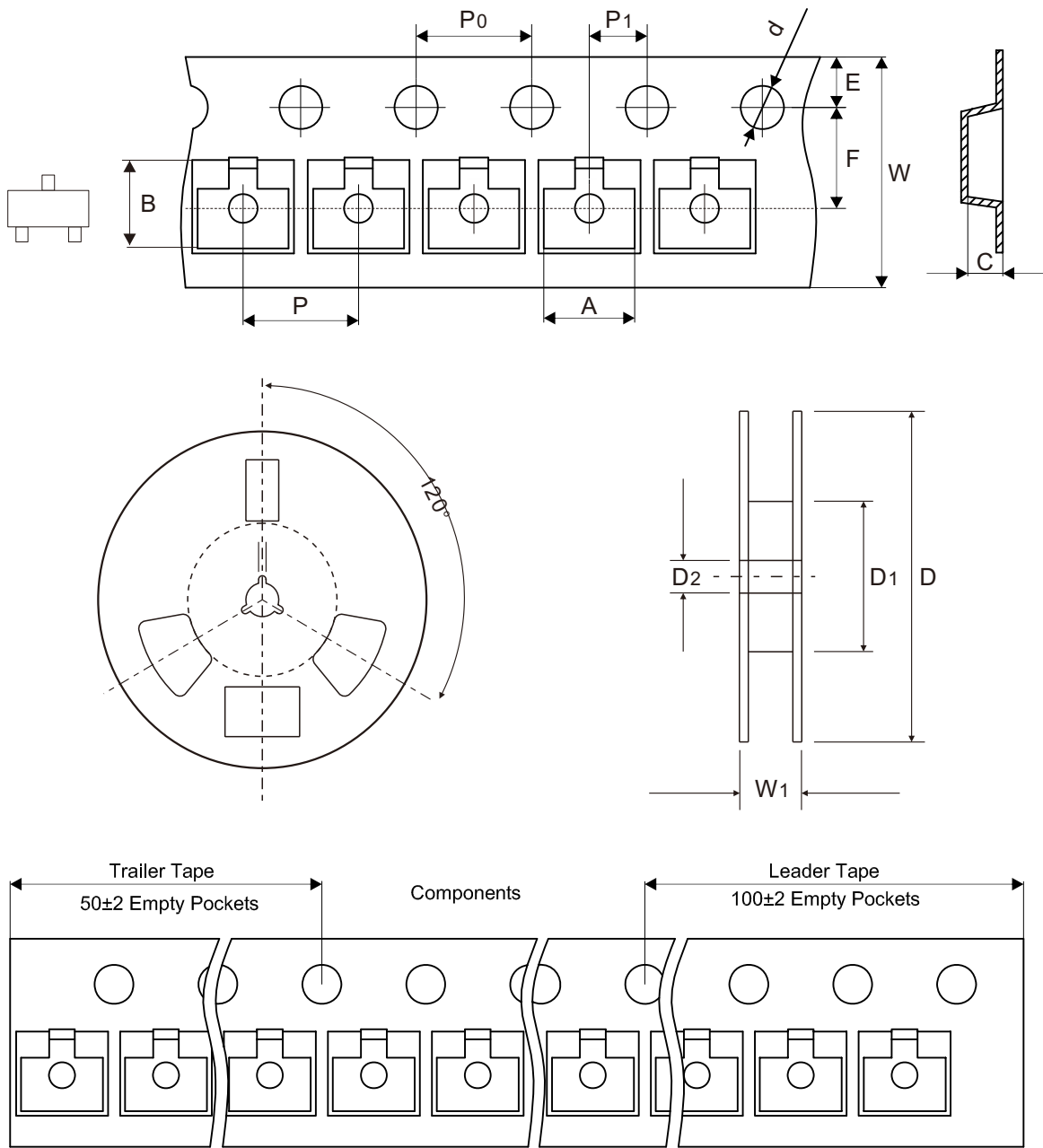


Fig.8 - $P_c - T_a$



Reel Taping Specification

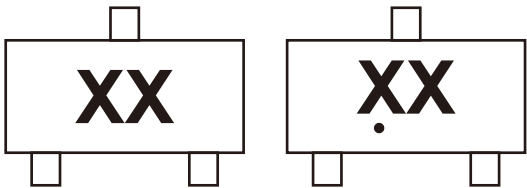


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 - 0.004	0.484 ± 0.039

Marking Code

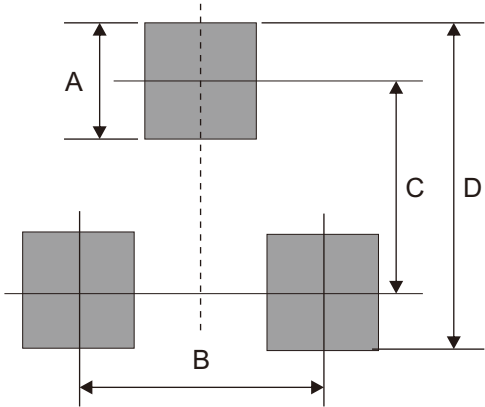
Part Number	Marking Code
BC846A-G	1A
BC847A-G	1E
BC848A-G	1J
BC846B-G	1B
BC847B-G	1F
BC848B-G	1K
BC847C-G	1G
BC848C-G	1L



Solid dot = Control code
xx = Product type marking code

Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	1.90	0.075
C	2.02	0.080
D	2.82	0.111



Note: 1. The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7