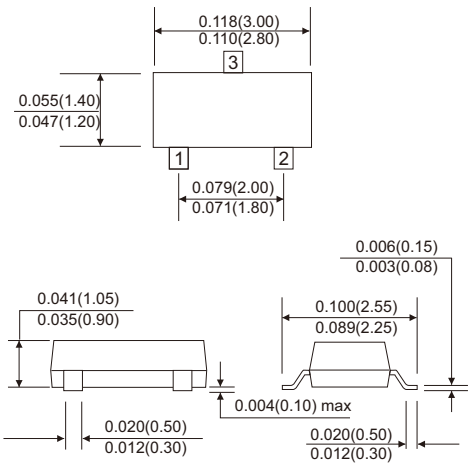
BC846A-G Thru. BC848C-G (NPN)

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

SOT-23



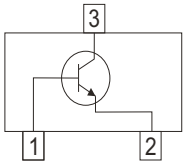
Dimensions in inches and (millimeter)

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	VCBO	80 50 30	V
Collector-emitter voltage	BC846-G BC847-G BC848-G	VCEO	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

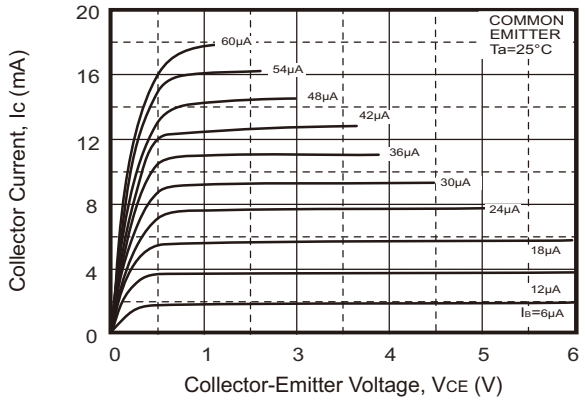


Fig.2 - h_{FE} — I_C

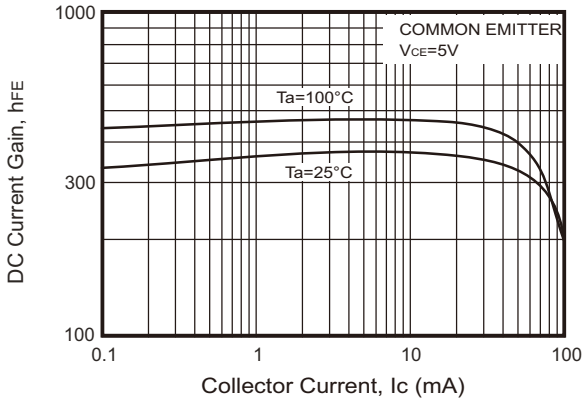


Fig.3 - V_{CEsat} — I_C

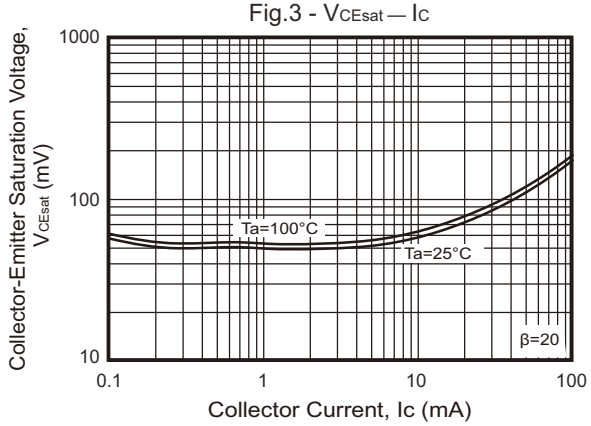


Fig.4 - V_{BEsat} — I_C

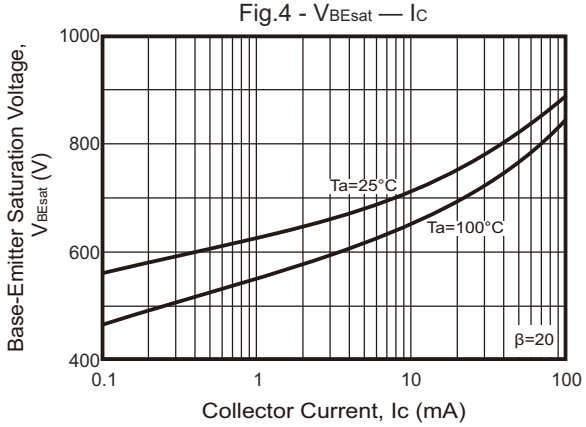


Fig.5 - I_C — V_{BE}

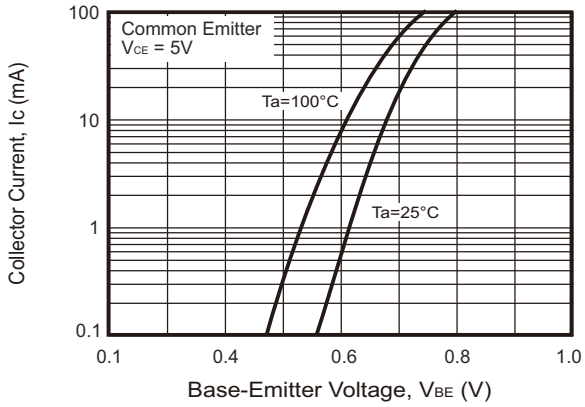


Fig.6 - Cob/Cib — V_{CB}/V_{EB}

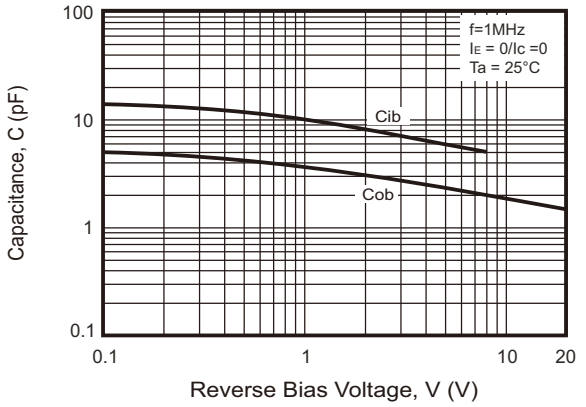


Fig.7 - f_T — I_C

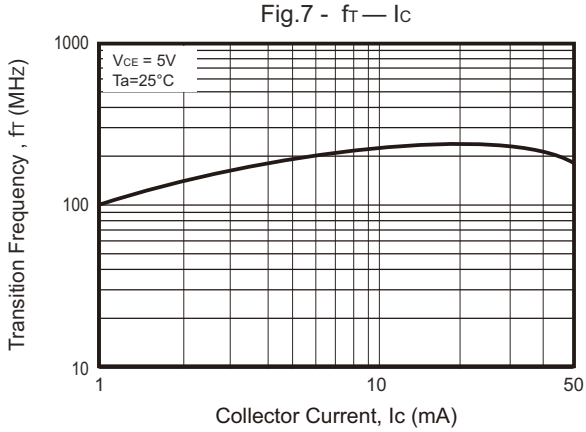
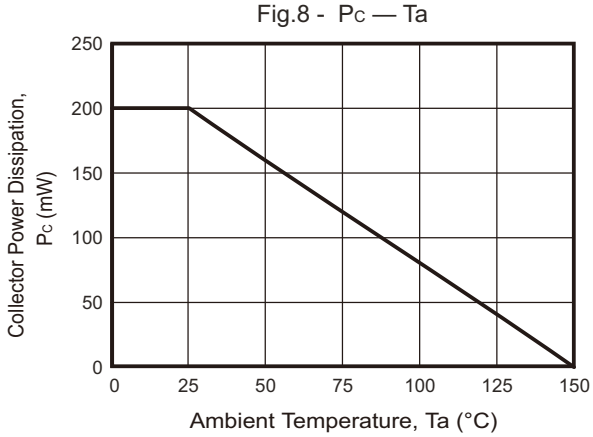
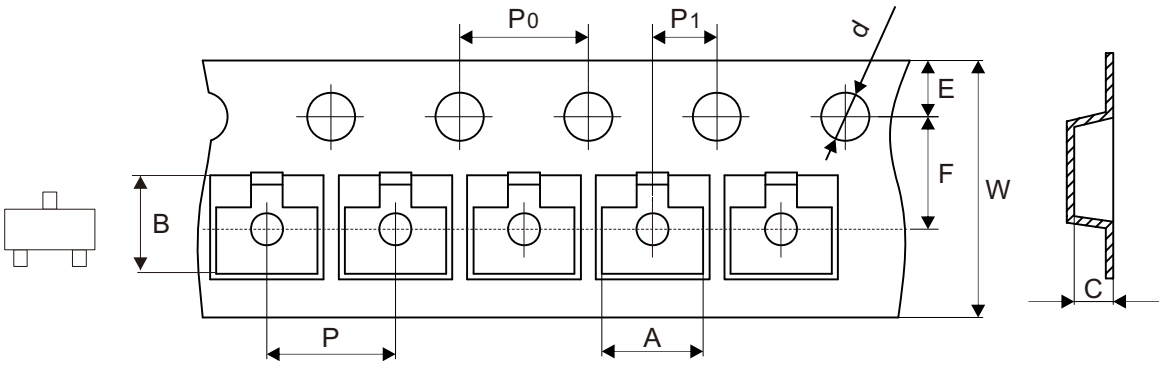
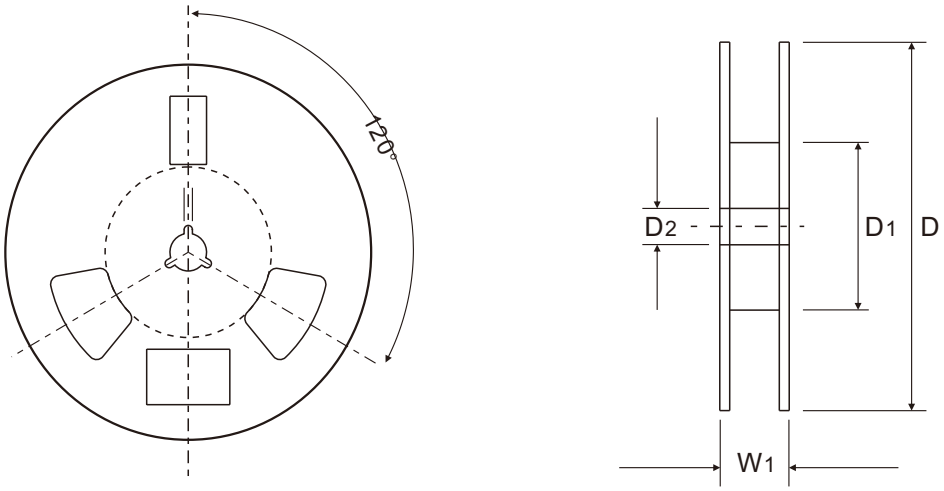


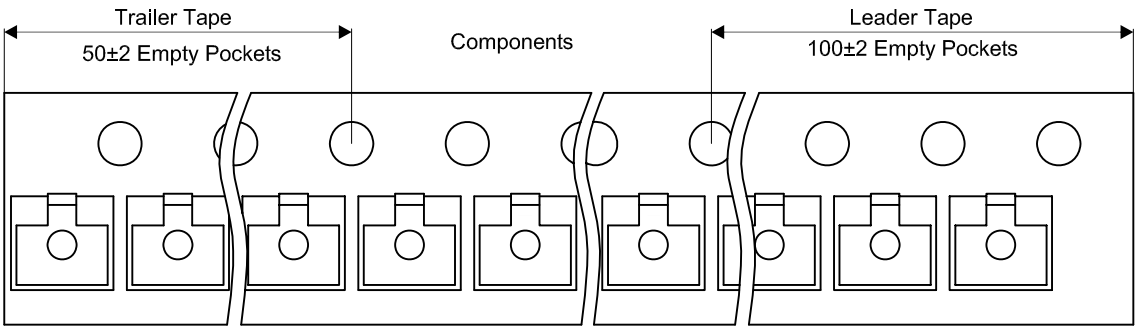
Fig.8 - P_C — Ta



Reel Taping Specification







	SYMBOL	A	B	C	d	D	D1	D2
SOT-23	(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

	SYMBOL	E	F	P	P0	P1	W	W1
SOT-23	(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