BC846A-G Thru. BC848C-G (NPN)

RoHS Device

Features

-Power dissipation

PCM: 0.20W (@TA=25 °C)

-Collector current

ICM: 0.1A

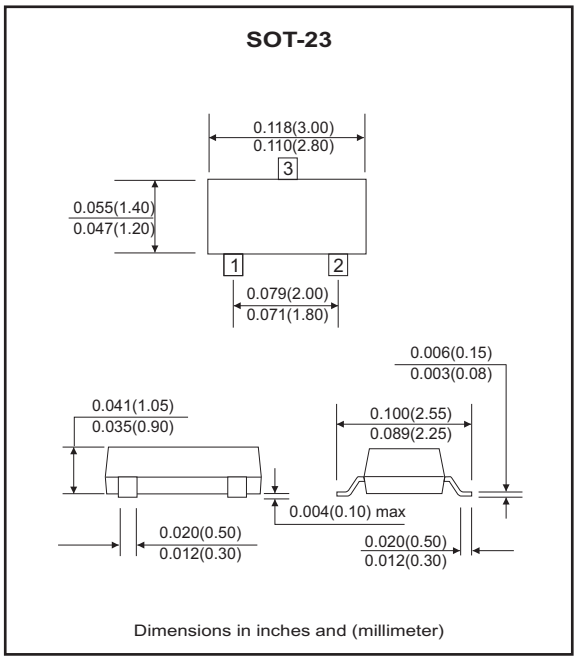
-Collector-base voltage

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.

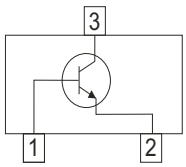
-Approx. weight: 0.008 grams

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, @T_A= 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

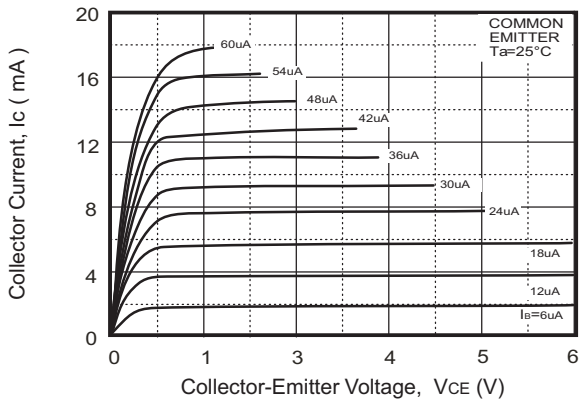


Fig.2- h_{FE} — Ic

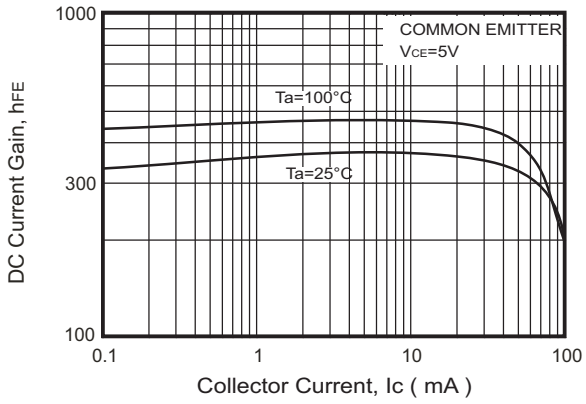


Fig.3- V_{CEsat} — Ic

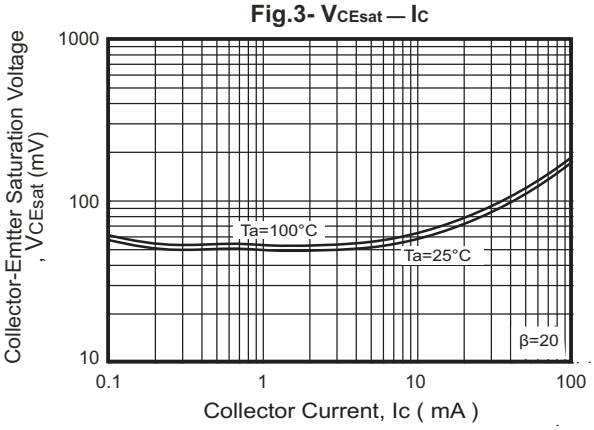


Fig.4- V_{BEsat} — Ic

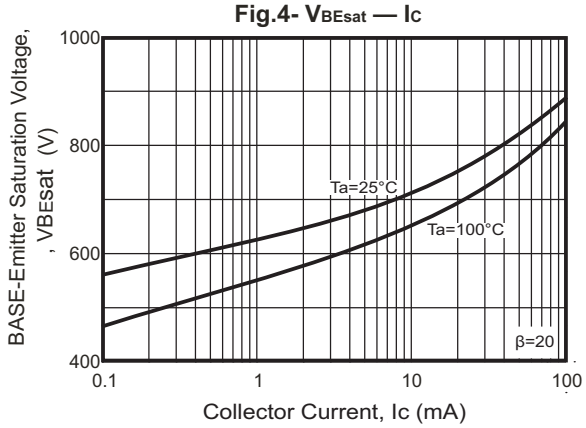


Fig.5- Ic — V_{BE}

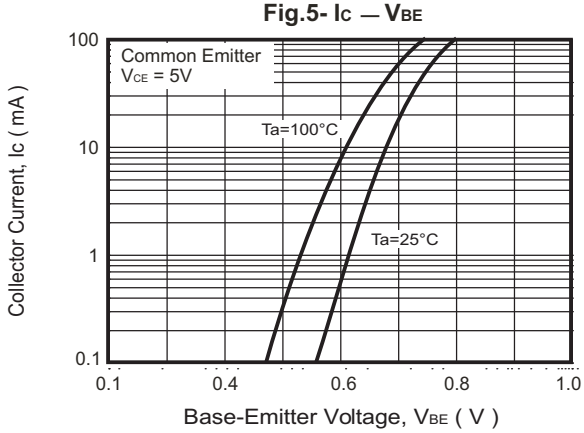


Fig.6- Cob/Cib — V_{CB}/V_{EB}

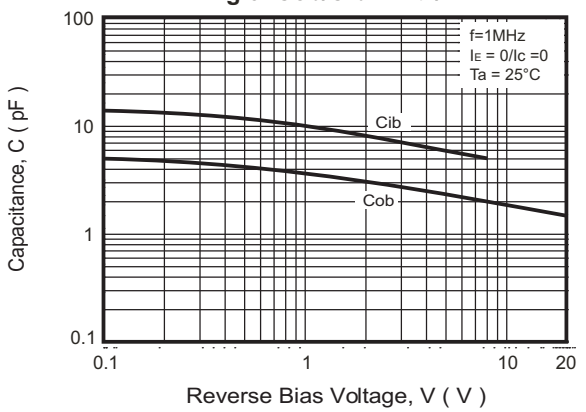


Fig.7- f_T — Ic

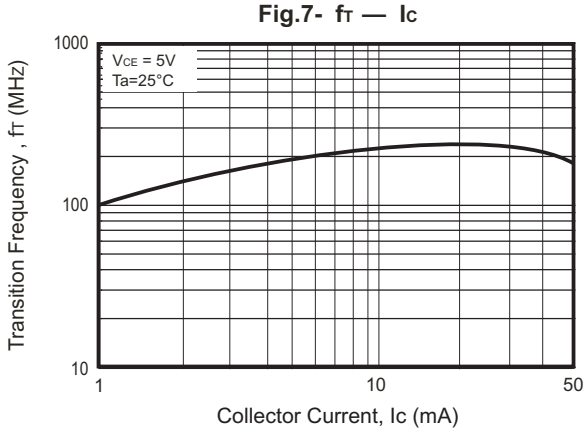
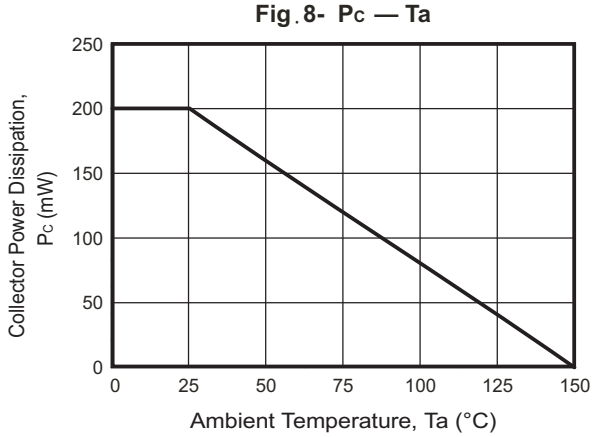
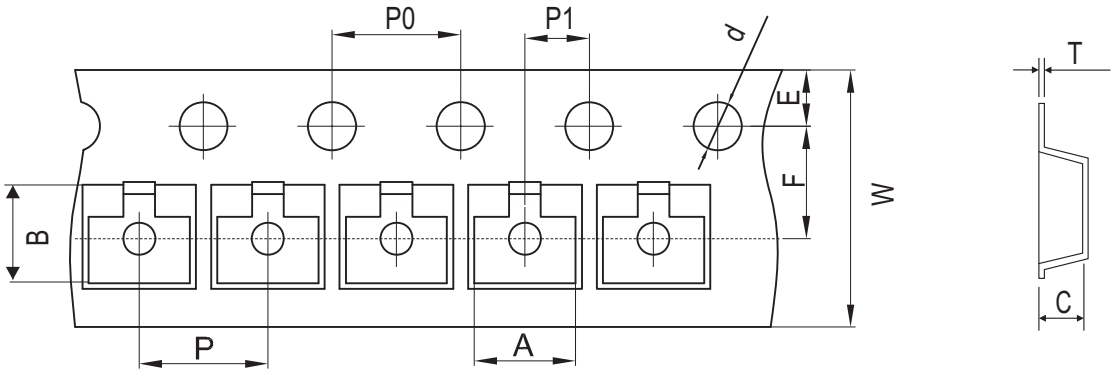
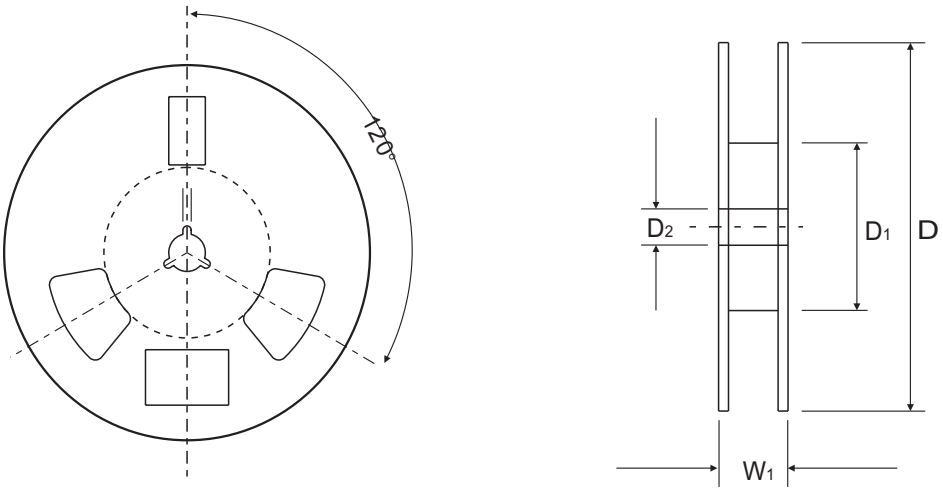


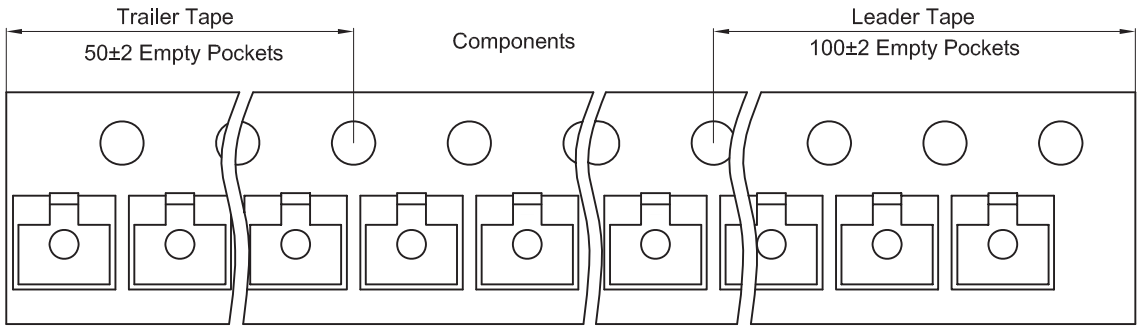
Fig.8- P_C — Ta



Reel Taping Specification





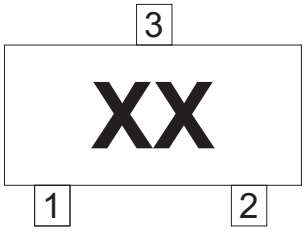


	SYMBOL	A	B	C	d	D	D1	D2
SOT-23	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

	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

Marking Code

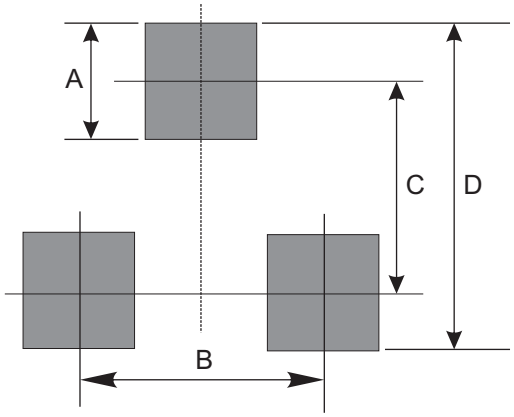
Part Number	Marking Code
BC846A-G	1A
BC847A-G	1E
BC848A-G	1J
BC846B-G	1B
BC847B-G	1F
BC848B-G	1K
BC847C-G	1G
BC848C-G	1L



xx = Product type marking code

Suggested 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



Standard Packaging

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

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