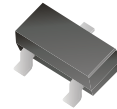


BC846W-G Thru. BC848W-G (NPN) RoHS Device



Features

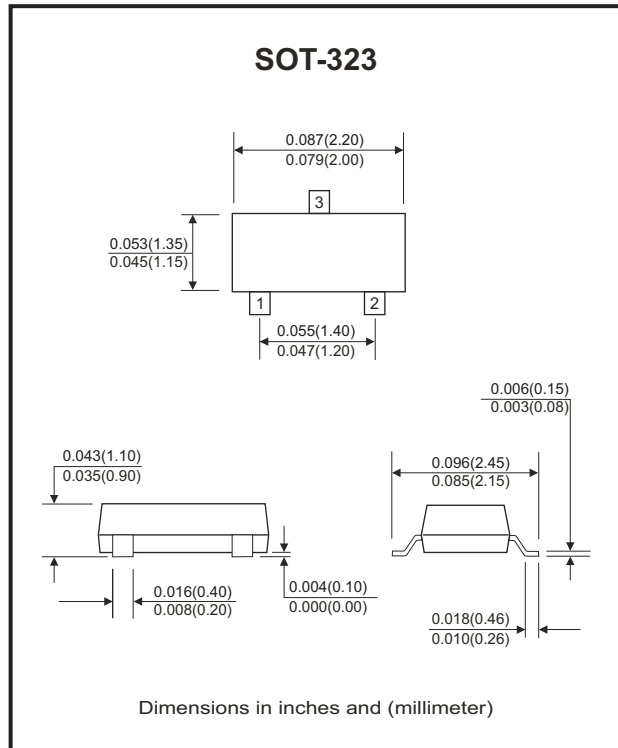
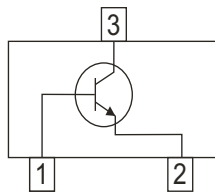
- Power dissipation
PCM: 0.15W (@TA=25°C)
- Collector current
ICM: 0.1A
- Collector-base voltage
VCBO: BC846W=80V
BC847W=50V
BC848W=30V

Mechanical data

- Case: SOT-323, 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	Units
Collector-Base voltage	VCBO	80	V
BC847W-G		50	
BC848W-G		30	
Collector-Emitter voltage	VCEO	65	V
BC847W-G		45	
BC848W-G		30	
Emitter-Base voltage	VEBO	6	V
BC848W-G		5	
Collector current -continuous	IC	0.1	A
Collector power dissipation	PC	150	mW
Thermal resistance from junction to ambient	REJA	833	°C/W
Junction temperature range	TJ	150	°C
Storage temperature range	TSTG	-55 to +150	°C

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Collector-base breakdown voltage	BC846W-G BC847W-G BC848W-G	V_{CBO}	$I_C = 10\mu A, I_E = 0$	80 50 30		V
Collector-emitter breakdown voltage	BC846W-G BC847W-G BC848W-G	V_{CEO}	$I_C = 10mA, I_B = 0$	65 45 30		V
Emitter-base break voltage	BC846W-G, BC847W-G BC848W-G	V_{EBO}	$I_E = 1\mu A, I_C = 0$	6 5		V
Collector cutoff current		I_{CBO}	$V_{CB} = 30V$		15	nA
DC current gain	BC846AW-G, 847AW-G, 848AW-G BC846BW-G, 847BW-G, 848BW-G BC847CW-G, 848CW-G BC846AW-G, 847AW-G, 848AW-G BC846BW-G, 847BW-G, 848BW-G BC847CW-G, 848CW-G	h_{FE}	$V_{CE} = 5V, I_C = 10\mu A$ $V_{CE} = 5V, I_C = 2mA$	110 200 420	90 150 270 220 450 800	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 10mA, I_B = 0.5mA$ $I_C = 100mA, I_B = 5mA$		0.25 0.60	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 10mA, I_B = 0.5mA$ $I_C = 100mA, I_B = 5mA$		0.7 0.9	V
Base-emitter voltage		$V_{BE(on)}$	$V_{CE} = 5V, I_C = 2mA$ $V_{CE} = 5V, I_C = 10mA$	580	660 700 770	mV
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
Noise figure	BC846AW-G, 847AW-G, 848AW-G BC846BW-G, 847BW-G, 848BW-G BC847CW-G, 848CW-G	NF	$V_{CE} = 5V, I_C = 0.2mA$ $f = 1KHz, R_S = 2K\Omega$ $BW = 200Hz$		10 10 4	dB

Electrical Characteristic Curves (BC846W-G Thru. BC848W-G)

Fig.1 - Static Characteristic

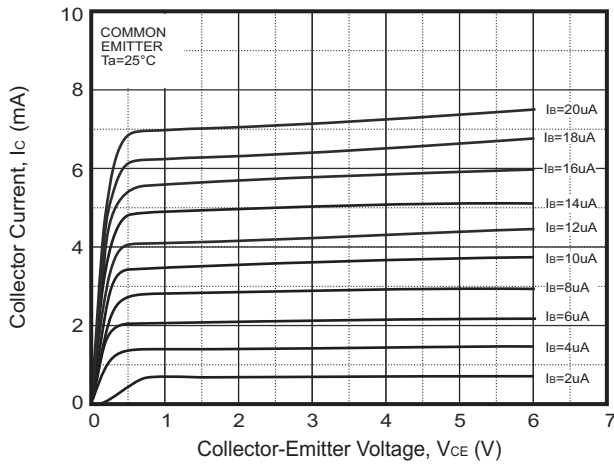


Fig.2 - $h_{FE} - I_c$

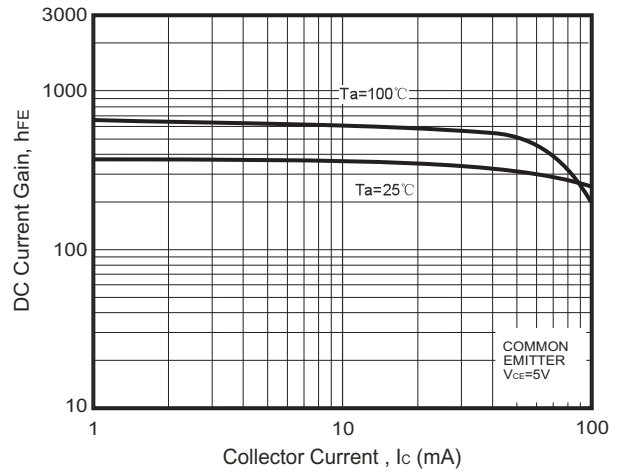


Fig.3 - $V_{BEsat} - I_c$

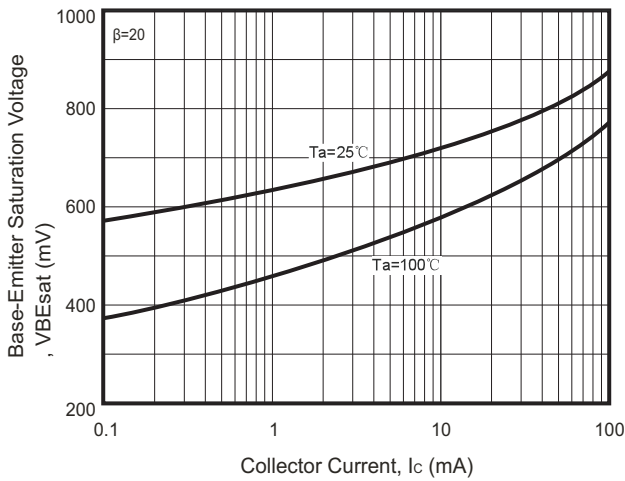


Fig.4 - $V_{CEsat} - I_c$

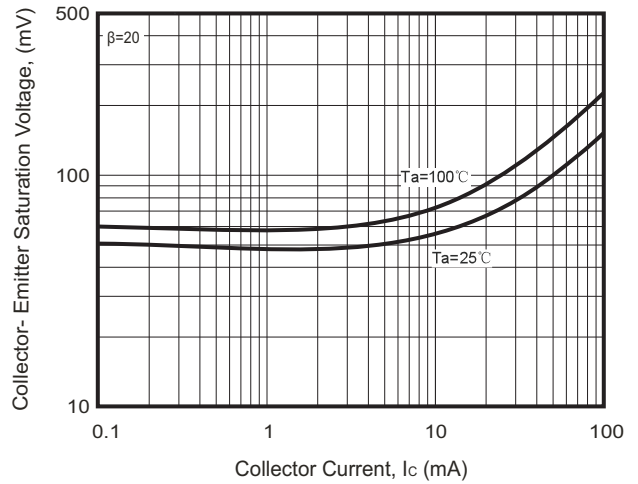


Fig.5 - $I_c - V_{BE}$

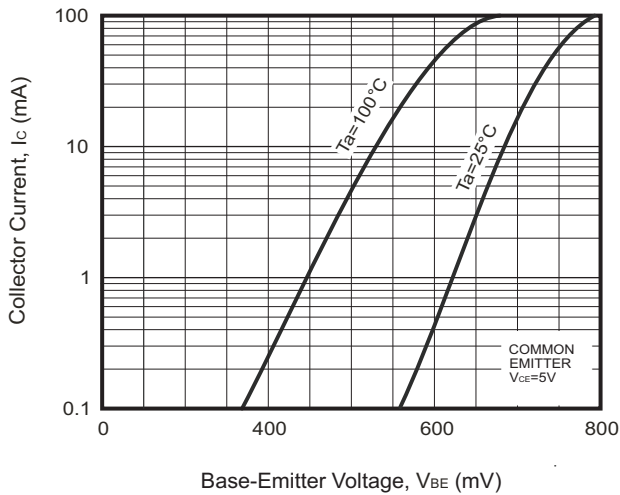
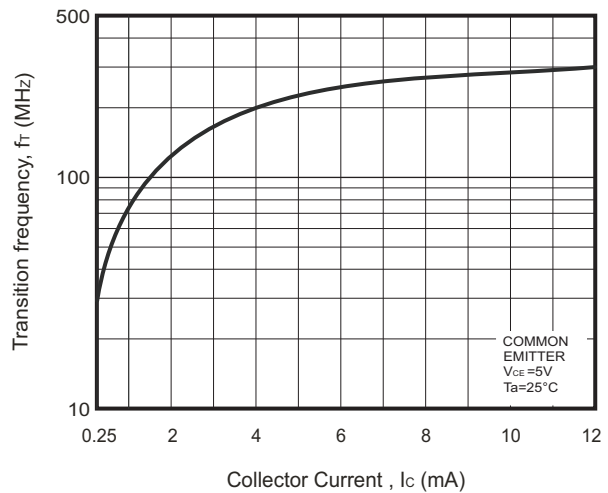
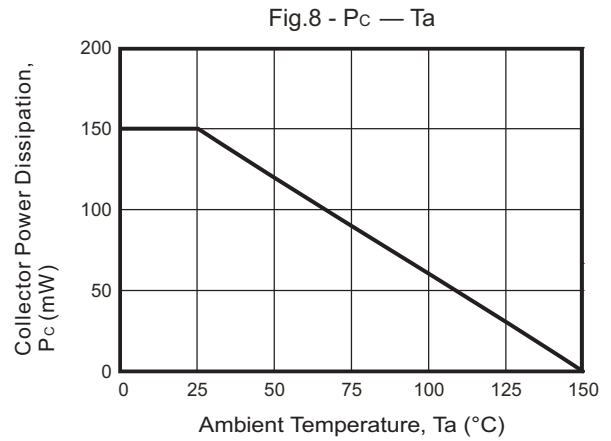
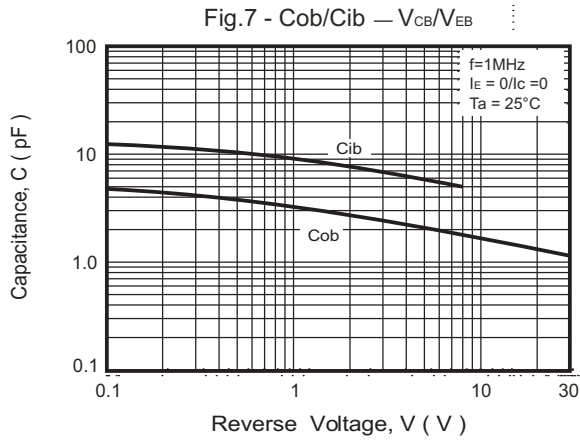


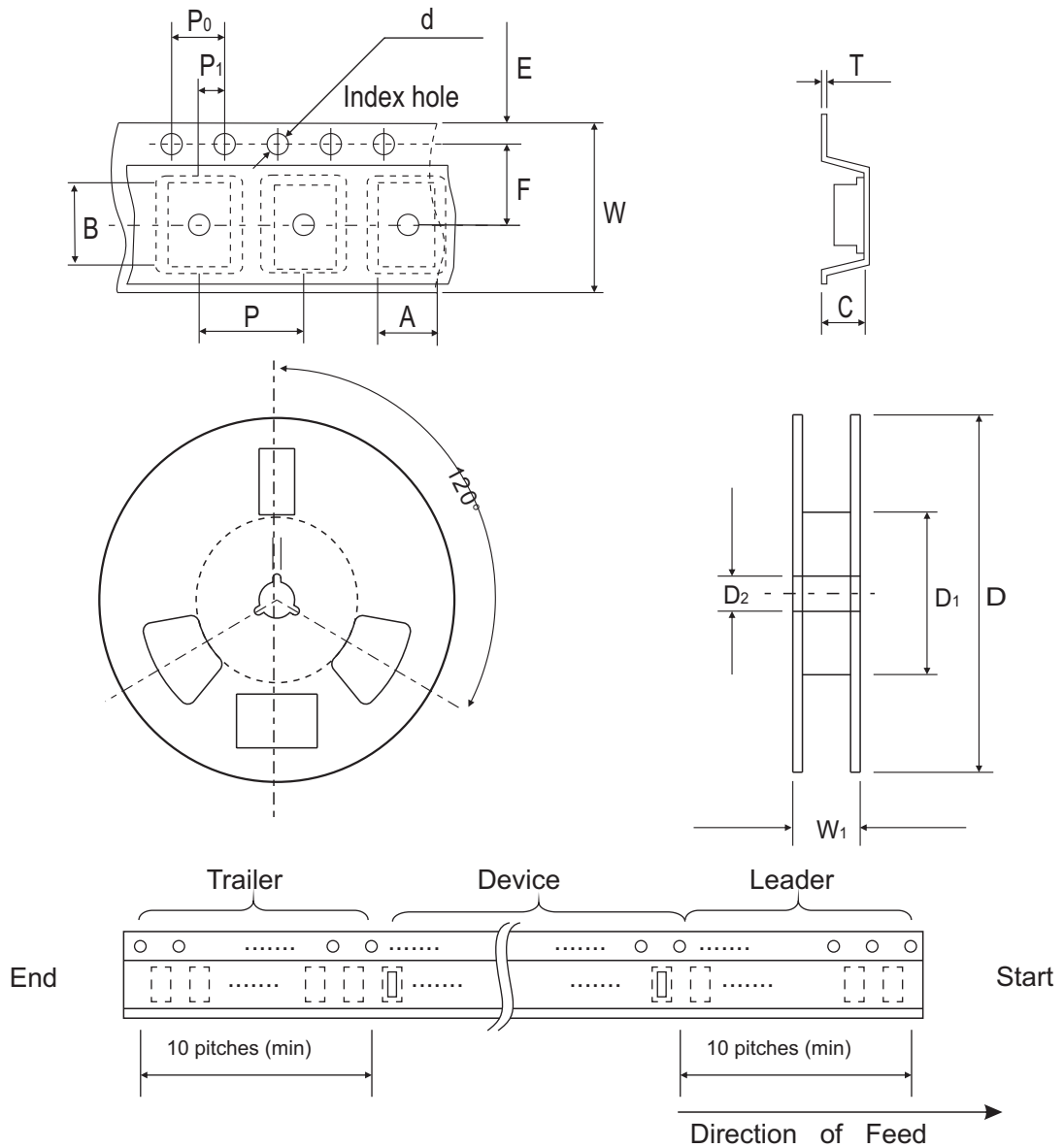
Fig.6 - $f_T - I_c$



Electrical Characteristic Curves (BC846W-G Thru. BC848W-G)



Reel Taping Specification

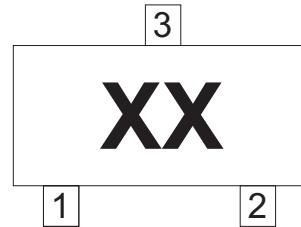


SOT-323	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.25 ± 0.05	2.55 ± 0.05	1.19 ± 0.05	1.55 ± 0.10	178 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.089 ± 0.002	0.100 ± 0.002	0.047 ± 0.002	0.061 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-323	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 ± 0.002	0.158 ± 0.004	0.158 ± 0.004	0.079 ± 0.004	$0.315^{+0.012}_{-0.004}$	0.484 ± 0.039

Marking Code

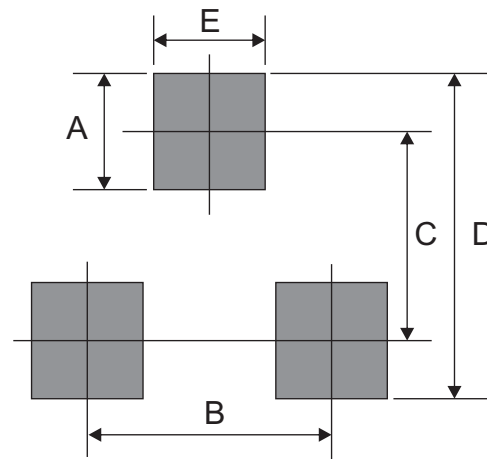
Part Number	Marking Code
BC846AW-G	1A
BC847AW-G	1E
BC848AW-G	1J
BC846BW-G	1B
BC847BW-G	1F
BC848BW-G	1K
BC847CW-G	1G
BC848CW-G	1L



xx = Product type marking code

Suggested PAD Layout

SIZE	SOT-323	
	(mm)	(inch)
A	0.80	0.031
B	1.30	0.051
C	2.20	0.087
D	3.00	0.118
E	0.50	0.020



Standard Packaging

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
SOT-323	3,000	7

Mouser Electronics

Authorized Distributor

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