

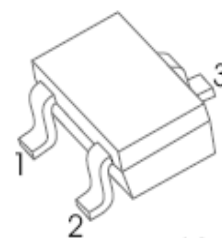
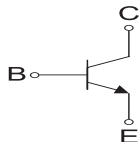
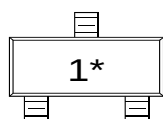
SOT-323 Plastic-Encapsulate Transistors**BC846W/BC847W/BC848W**

TRANSISTOR (NPN)

SOT - 323

FEATURES

- Ideally suited for automatic insertion
- For switching and AF amplifier applicationst

MARKING**Equivalent Circuit**

1. BASE

2. EMITTER

3. COLLECTOR

HFE	110 - 220	200 - 450	420 - 800
BC846	1A	1B	
BC847	1E	1F	1G
BC848	1J	1K	1L

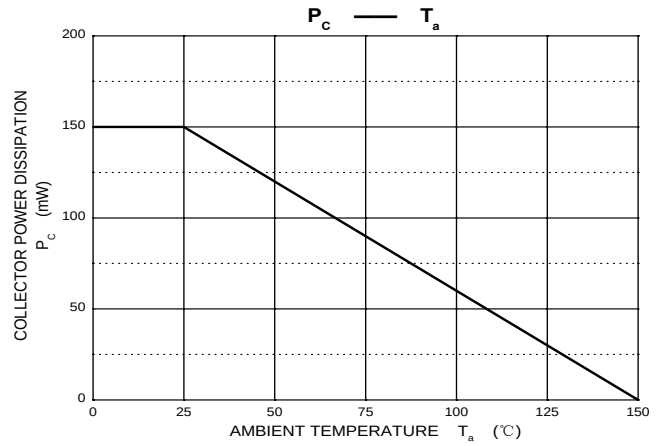
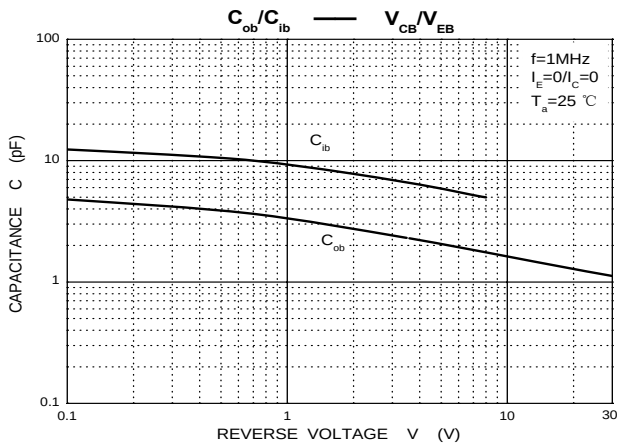
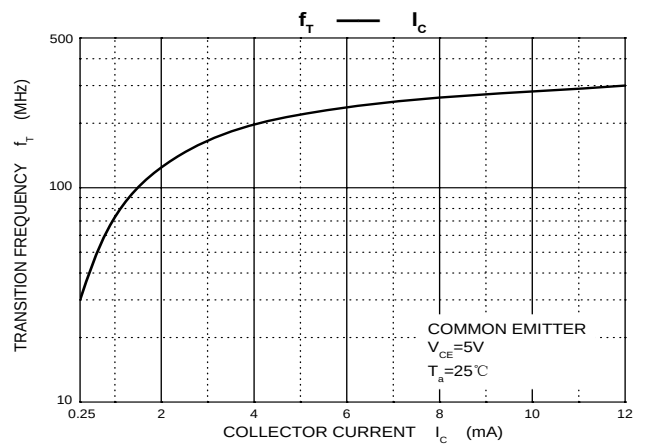
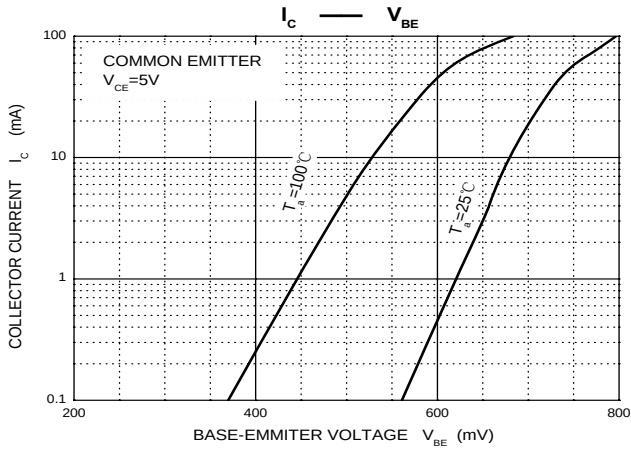
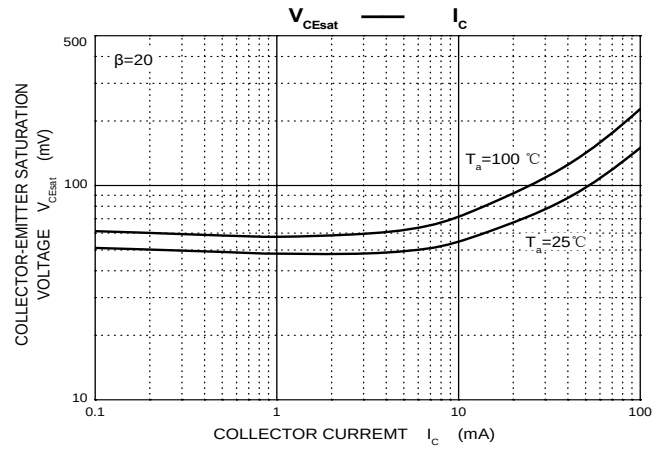
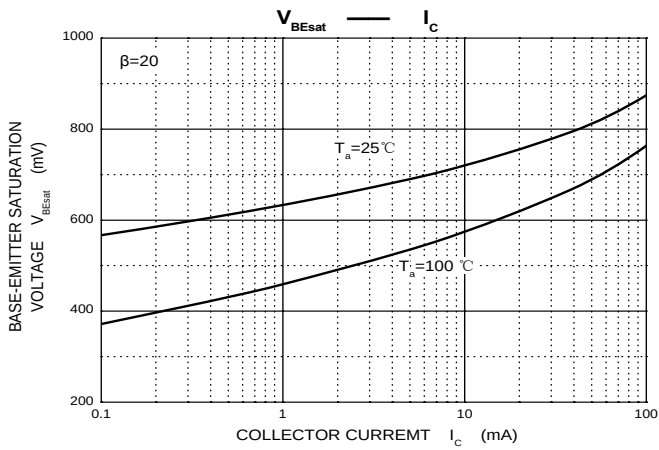
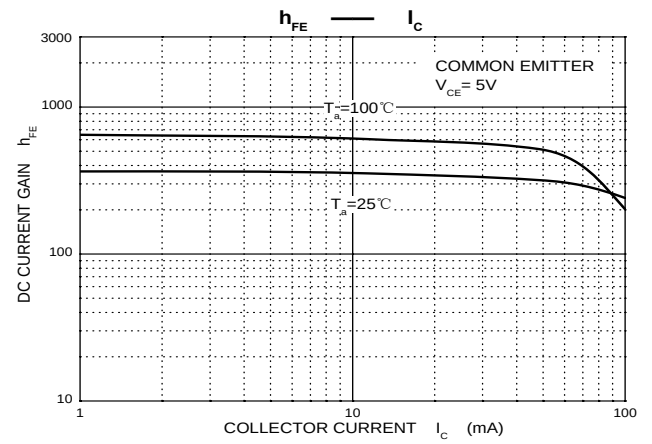
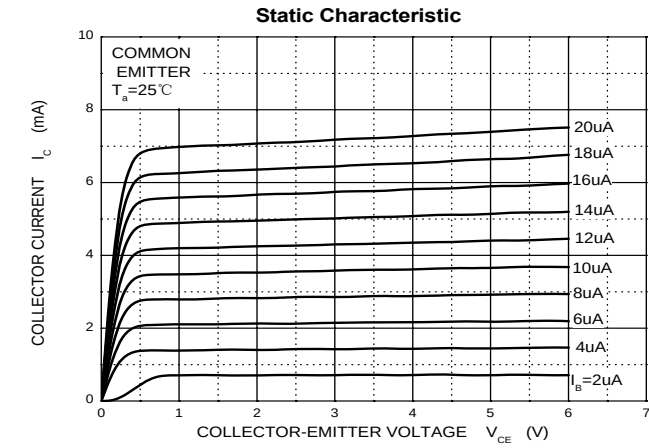
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V _{CBO}	Collector-Base Voltage	BC846W	80	V
		BC847W	50	
		BC848W	30	
V _{CEO}	Collector-Emitter Voltage	BC846W	65	V
		BC847W	45	
		BC848W	30	
V _{EBO}	Emitter-Base Voltage	BC846W	6	V
		BC847W	6	
		BC848W	5	
I _C	Collector Current –Continuous		0.1	A
P _C	Collector Power Dissipation		150	mW
R _{θJA}	Thermal Resistance From Junction To Ambient		833	°C/W
T _J ,T _{stg}	Operation Junction and Storage Temperature Range		-55-150	°C

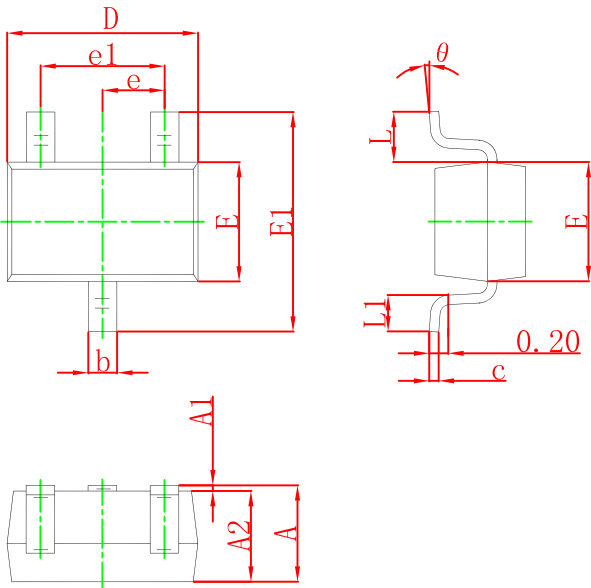
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC846W BC847W BC848W	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	80 50 30		V
Collector-emitter breakdown voltage	BC846W BC847W BC848W	V_{CEO}	$I_C = 10\text{mA}, I_B = 0$	65 45 30		V
Emitter-base breakdown voltage	BC846W BC847W BC848W	V_{EBO}	$I_E = 1\mu\text{A}, I_C = 0$	6 6 5		V
Collector Cutoff Current		I_{CBO}	$V_{CB} = 30\text{V}$		15	nA
DC current gain	BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW	h_{FE}	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}, I_C = 2\text{mA}$	90 150 270 110 200 420		220 450 800
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$		0.25 0.6	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	0.7 0.9		V
Base-emitter voltage		$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $V_{CE} = 5\text{V}, I_C = 10\text{mA}$	580 660	700 770	mV
Transition frequency		f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ $f = 100\text{MHz}$	100		MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		4.5	pF
Noise figure	BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW	NF	$V_{CE} = 5\text{V}, I_C = 0.2\text{mA}$ $f = 1\text{KHz}, R_S = 2\text{K}\Omega$ $BW = 200\text{Hz}$		10 10 4	dB

Typical Characteristics

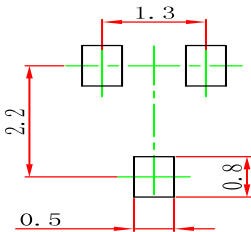


Package Outline Dimensions (SOT-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout (SOT-323)



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.