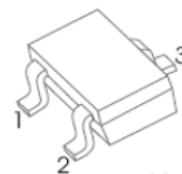


## SOT-323 Plastic-Encapsulate Transistors

SOT-323



1. BASE
2. EMITTER
3. COLLECTOR

### FEATURES

- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

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

### DEVICE MARKING

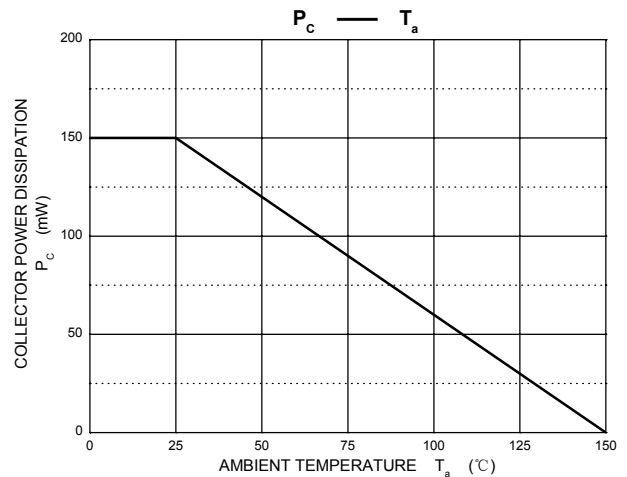
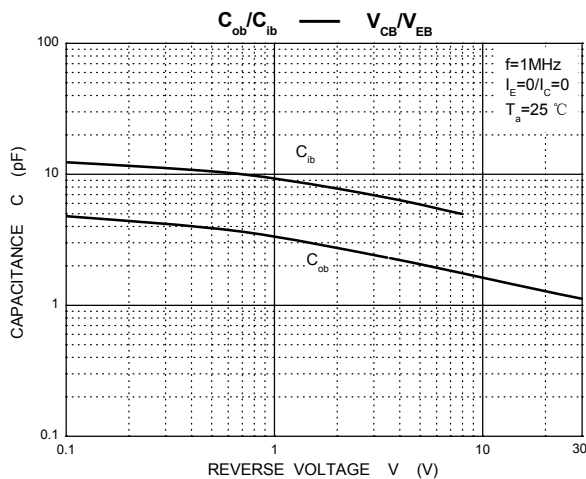
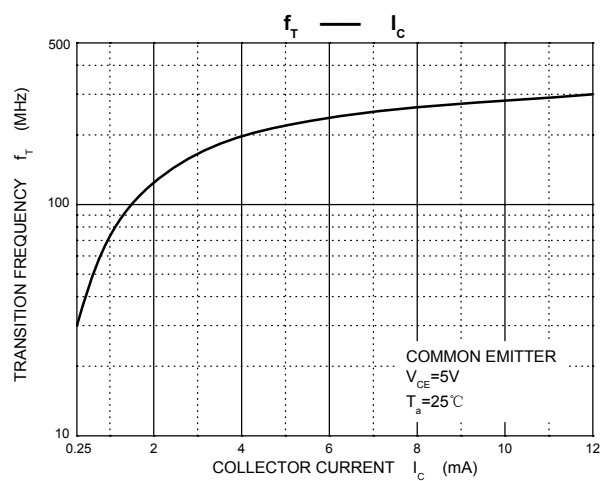
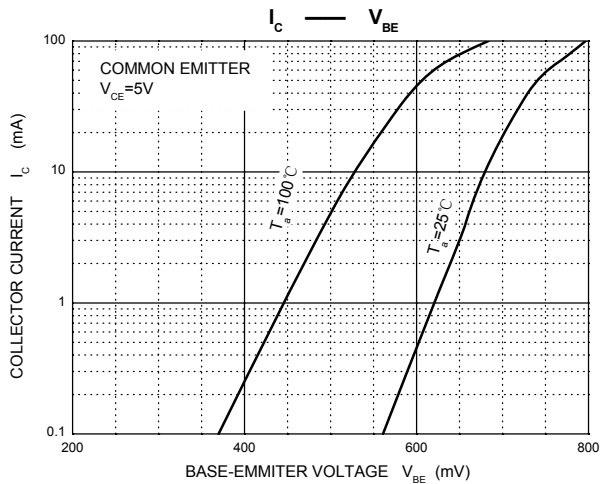
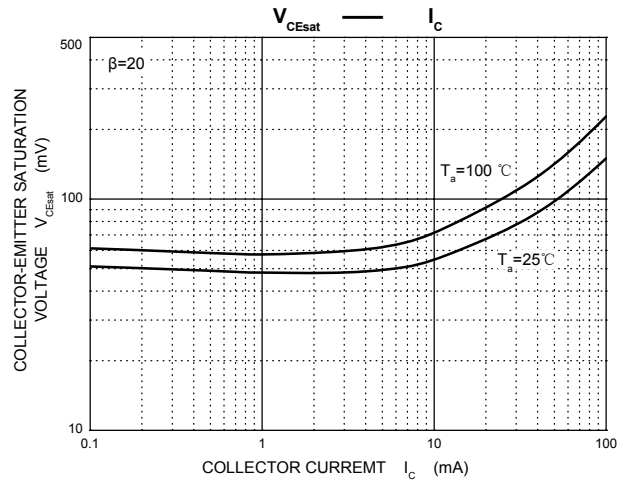
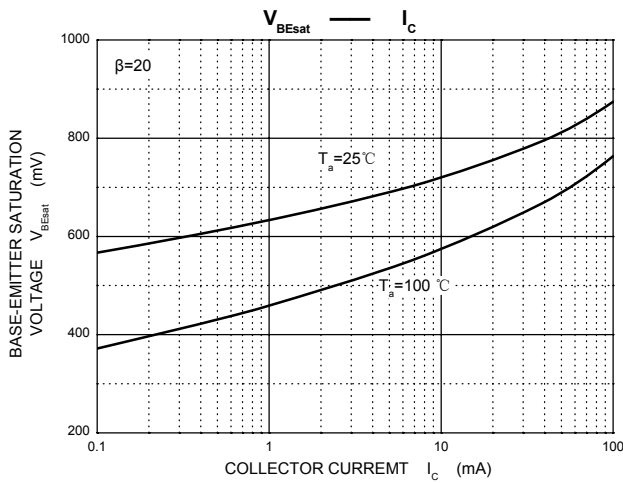
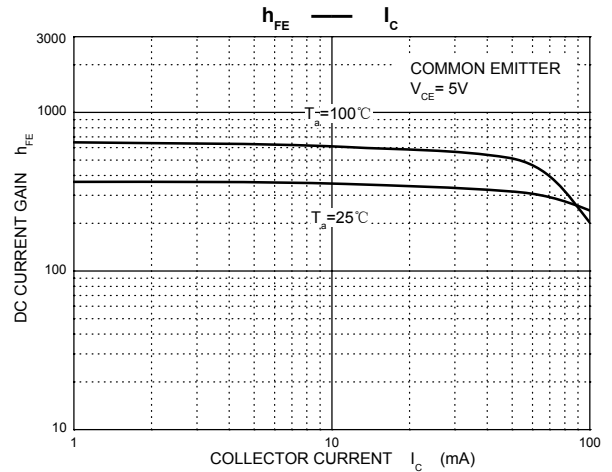
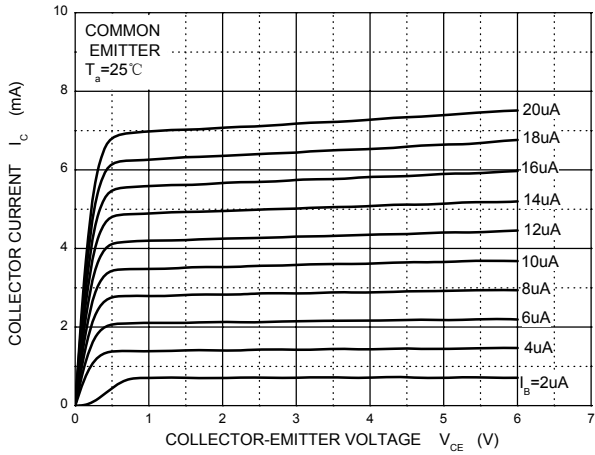
BC846AW=1A; BC846BW=1B;  
BC847AW=1E; BC847BW=1F; BC847CW=1G;  
BC848AW=1J; BC848BW=1K; BC848CW=1L

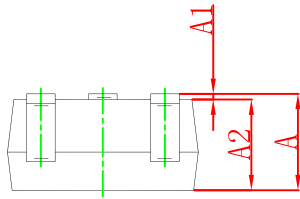
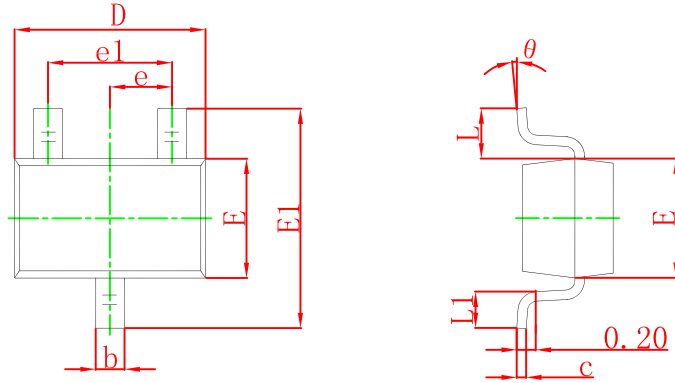
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC846W BC847W BC848W	V <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> =0	80 50 30		V
Collector-emitter breakdown voltage	BC846W BC847W BC848W	V <sub>CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	65 45 30		V
Emitter-base breakdown voltage	BC846W BC847W BC848W	V <sub>EBO</sub>	I <sub>E</sub> = 1 μA, I <sub>C</sub> =0	6 6 5		V
Collector Cutoff Current		I <sub>CBO</sub>	V <sub>CB</sub> =30V		15	nA
DC current gain	BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10μA  V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	90 150 270  110 200 420		220 450 800
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA		0.25 0.6	V
Base-emitter saturation voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA	0.7 0.9		V
Base-emitter voltage		V <sub>BE(on)</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA	580	660 700 770	mV
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10mA f=100MHz	100		MHz
Collector output capacitance		C <sub>ob</sub>	V <sub>CB</sub> =10V,f=1MHz		4.5	pF
Noise figure	BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW	NF	V <sub>CE</sub> =5V,I <sub>c</sub> =0.2mA, f=1KHz,R <sub>S</sub> =2KΩ BW=200Hz		F€ 10 4	dB

## Typical Characteristics

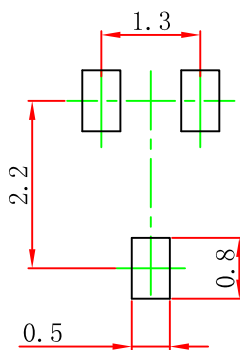
### Static Characteristic





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°

### SOT-323 Suggested Pad Layout



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