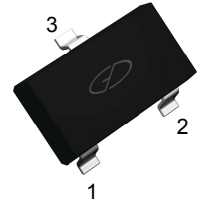


BC846xW/BC847xW/BC848xW NPN Transistors

Features

- Low Current
- Low Voltage
- Ideal for Automatic Insertion

1. BASE
 2. EMITTER
 3. COLLECTOR



SOT-323

Maximum Ratings (T_A=25°C unless otherwise specified)

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	Junction Temperature		-55 to +150	°C
T _{STG}	Storage Temperature		-55 to +150	°C

Device Marking

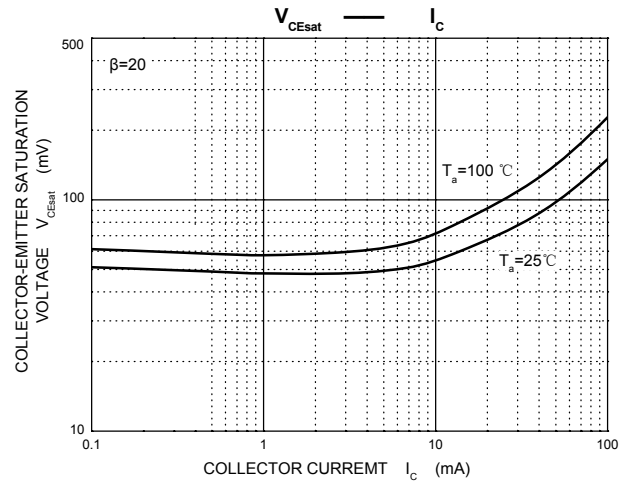
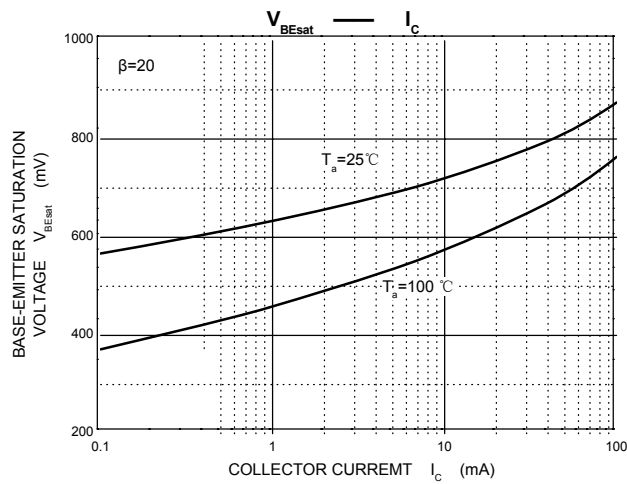
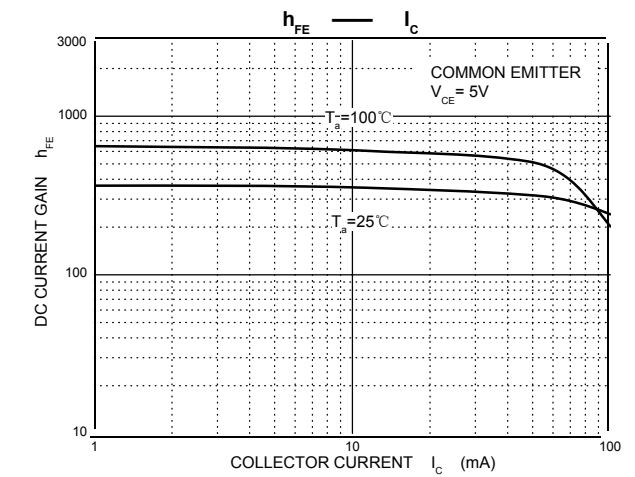
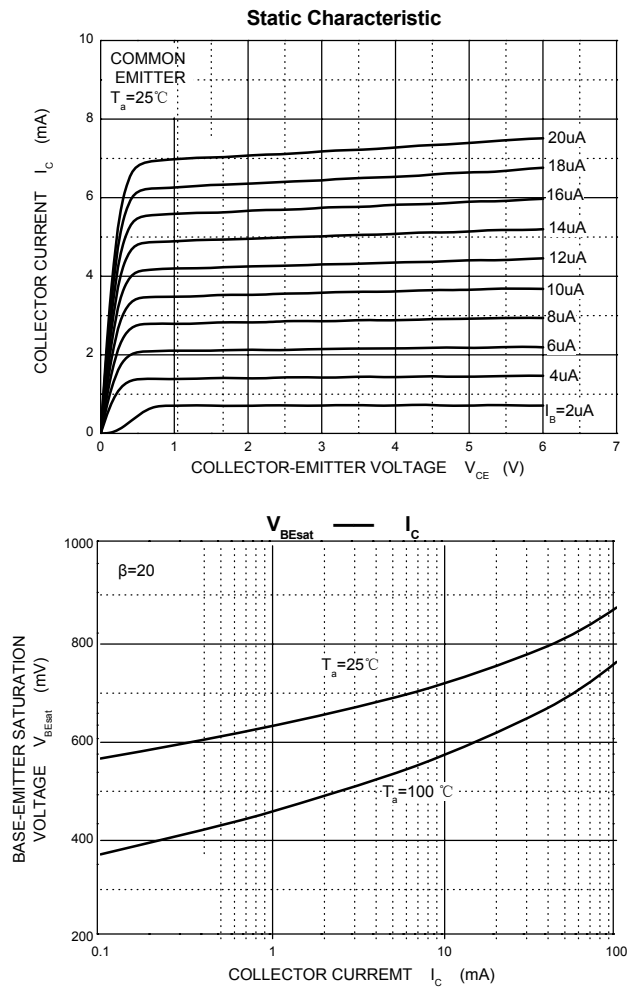
BC846AW=1A;
 BC846BW=1B;
 BC847AW. 1E;
 BC847BW=1F;
 BC847CW=1G;
 BC848AW=1J;
 BC848BW=1K;
 BC848CW=1L.

BC846xW/BC847xW/BC848xW NPN Transistors

Electrical Characteristics (T_A=25°C unless otherwise specified)

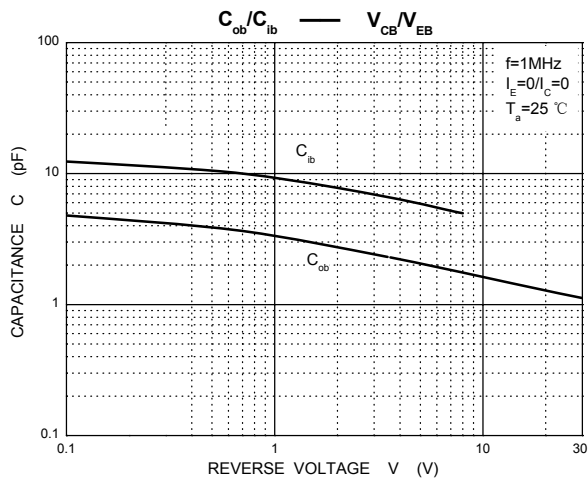
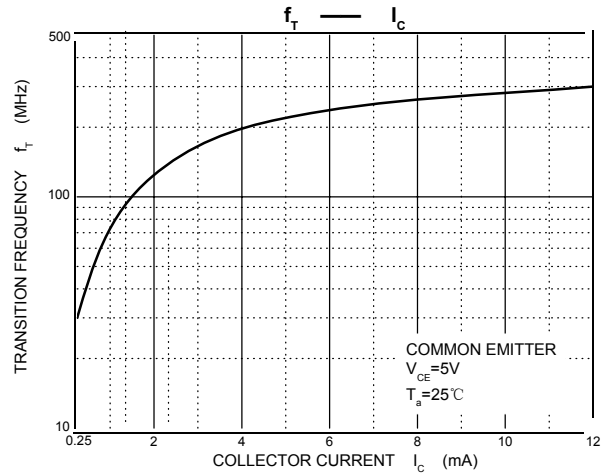
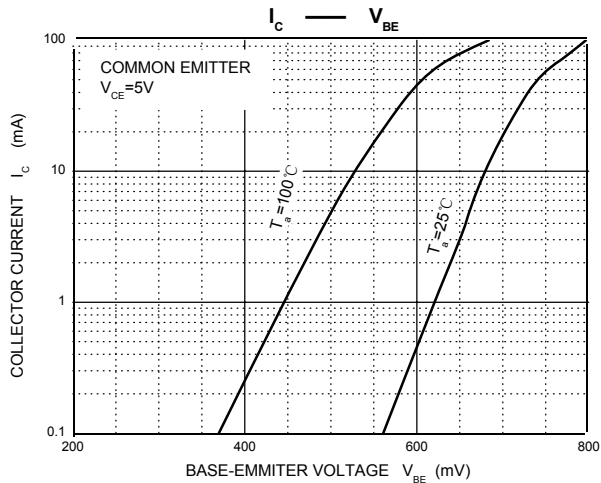
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base Breakdown Voltage BC846xW BC847xW BC848xW	V _{CBO}	I _C = 10μA, I _E =0	80 50 30			V
Collector-Emitter Breakdown Voltage BC846xW BC847xW BC848xW	V _{CEO}	I _C = 10mA, I _B =0	65 45 30			V
Emitter-Base Breakdown Voltage BC846xW BC847xW BC848xW	V _{EBO}	I _E = 1 μA, I _C =0	6 6 5			V
Collector Cutoff Current	I _{CBO}	V _{CB} =30V			15	nA
DC Current Gain BC846AW,BC847AW,BC848AW BC846BW,BC847BW,BC848BW BC847CW,BC848CW BC846AW,BC847AW,BC848AW, BC846BW,BC847BW,BC848BW BC847CW,BC848CW	h _{FE}	V _{CE} = 5V, I _C = 10μA 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 0.6	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} = 5 V, I _C = 10mA f=100MHz	100			MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V,f=1MHz			4.5	pF
Noise Figure BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW	NF	V _{CE} =5V,I _c =0.2mA, f=1kHz,R _S =2kΩ BW=200Hz			10 10 4	dB

Typical Characteristic Curves

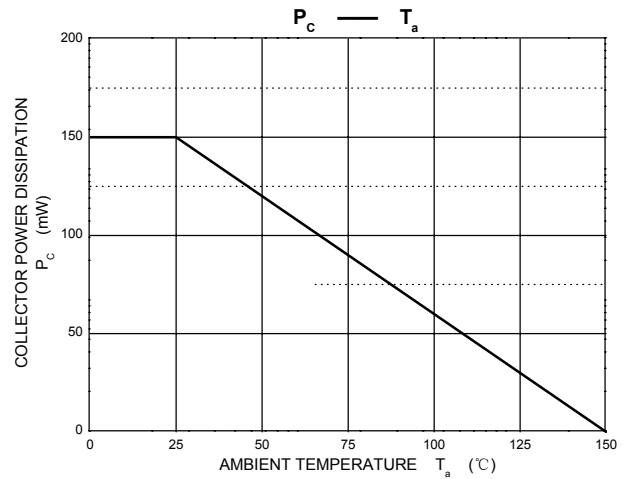


BC846xW/BC847xW/BC848xW NPN Transistors

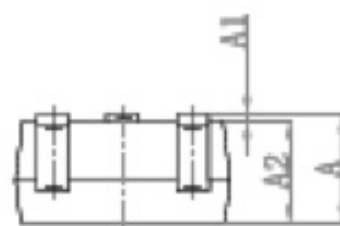
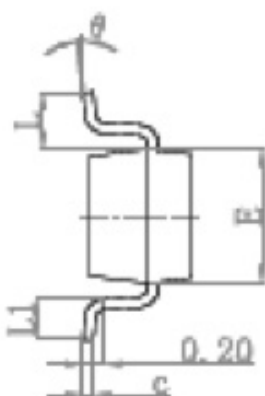
Typical Characteristic Curves



3/4

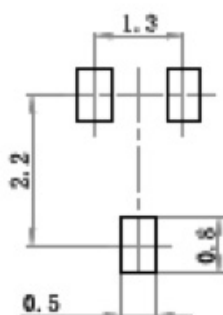


Package Outline Dimensions SOT-323



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



Note:

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