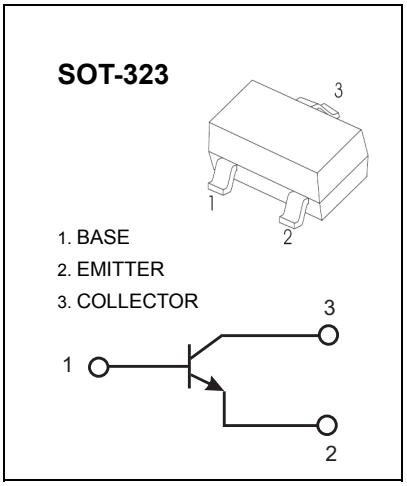
BC846AW THRU BC848CW

NPN Transistors

Features

- High current gain
- Excellent h_{FE} linearity
- High conductance
- Compliant to Halogen-free



Mechanical Data

- **Package**: SOT-323
  Molding compound meets UL 94 V-0 flammability rating
- **Terminals:** Tin plated leads, solderable per
  J-STD-002, Method 208

Maximum Ratings (Ta=25℃ unless otherwise noted)

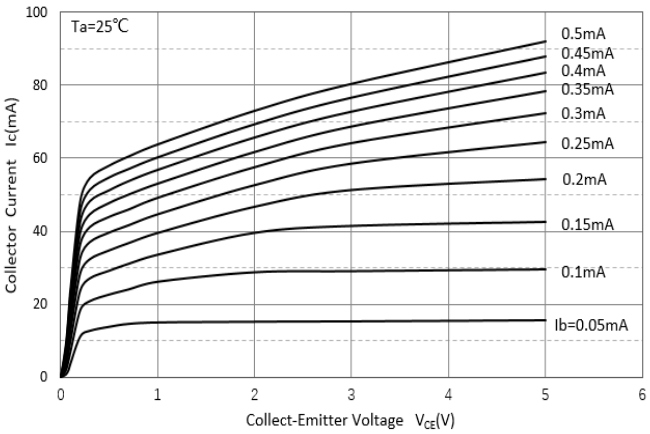
Parameter	Symbol	BC846AW BC846BW	BC847AW BC847BW BC847CW	BC848AW BC848BW BC848CW	Unit
Collector-Base Voltage	V_{CBO}	80	50	30	V
Collector-Emitter Voltage	V_{CEO}	65	45	30	V
Emitter-Base Voltage	V_{EBO}	6	6	6	V
Collector Current (Continuous)	I_C	100			mA
Power Dissipation	P_D	200			mW
Operating Junction Temperature	T_J	-55 ~ +150			°C
Storage Temperature Range	T_{STG}	-55 ~ +150			°C

Electrical Characteristics (Ta=25℃ unless otherwise specified)

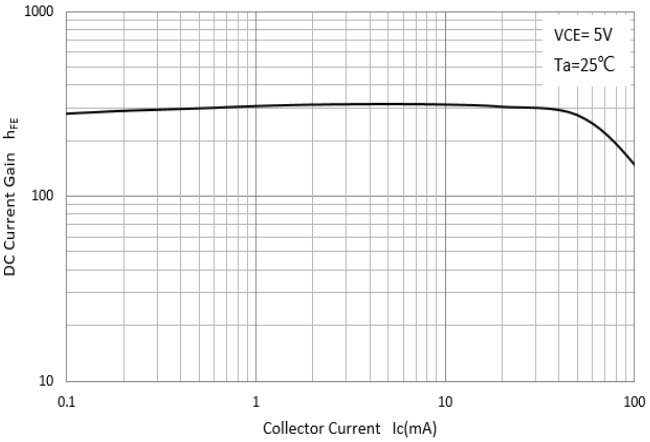
Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	BC846	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	80	-	-	V
Collector-Base Breakdown Voltage	BC847			50	-	-	
Collector-Base Breakdown Voltage	BC848			30	-	-	
Collector-Emitter Breakdown Voltage	BC846	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	65	-	-	V
Collector-Emitter Breakdown Voltage	BC847			45	-	-	
Collector-Emitter Breakdown Voltage	BC848			30	-	-	
Emitter-Base Breakdown Voltage	BC846	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Emitter-Base Breakdown Voltage	BC847			6	-	-	
Emitter-Base Breakdown Voltage	BC848			6	-	-	
Collector Cut-off Current		I_{CBO}	V_{CB} = 30V, I_E = 0	-	-	100	nA
Emitter-base Cut-off Current		I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	100	nA
Collector-emitter Cut-off Current		I_{CEO}	V_{CE}= 30V, I_B = 0	-	-	1	mA
DC Current Gain	BC846/847/848AW	h_{FE}	V_{CE} = 5V, I_C = 2mA	110	-	220	-
DC Current Gain	BC846/847/848BW			200	-	450	-
DC Current Gain	BC847/848CW			420	-	800	-
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C = 100mA, I_B = 5mA	-	-	0.60	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C = 100mA, I_B = 5mA	-	-	1.10	V
Transition Frequency		f_T	V_{CE} = 5V, I_C= 10mA f = 100MHz	100	-	-	MHz

Characteristics (Typical)

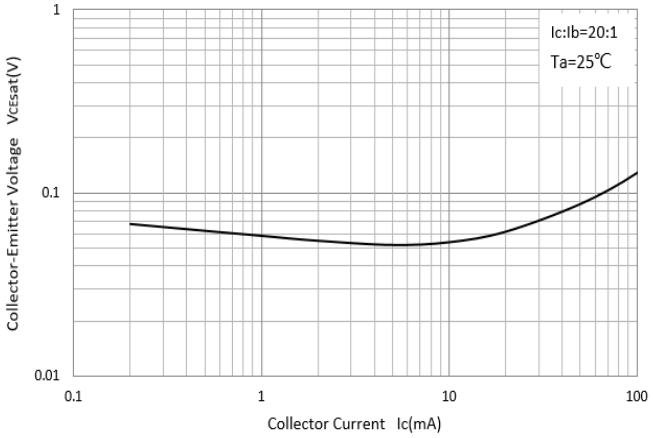
Static Characteristic



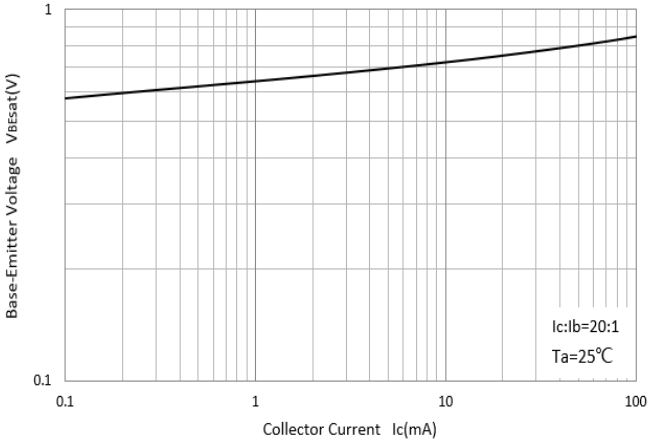
DC Current Gain



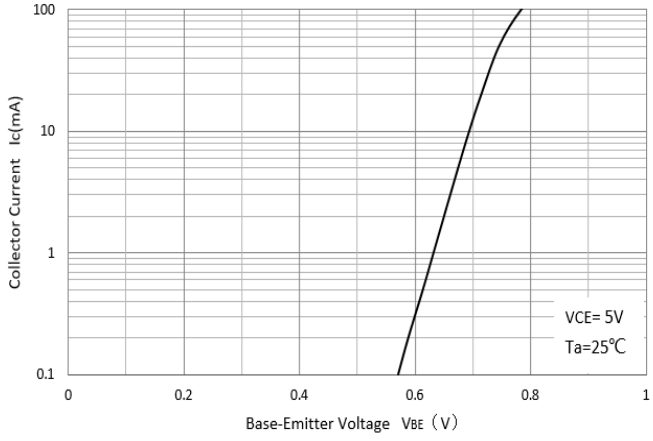
Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



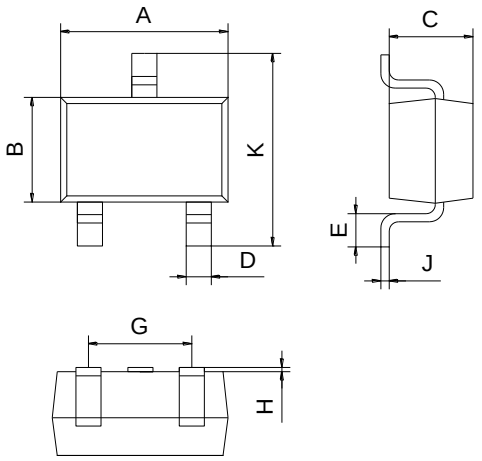
Base-Emitter On Voltage

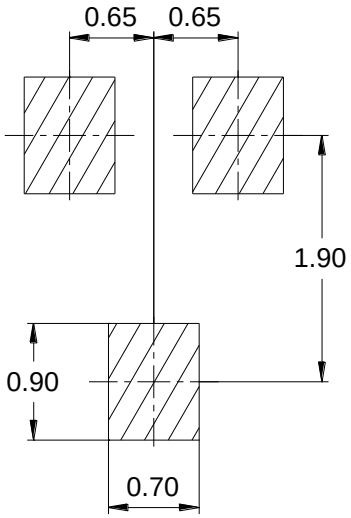


Marking

Type number	Marking code
BC846AW	1A
BC846BW	1B
BC847AW	1E
BC847BW	1F
BC847CW	1G
BC848AW	1J
BC848BW	1K
BC848CW	1L

SOT-323 Package Outline Dimensions



SOT-323		
Dimension	**Min.**	**Max.**
A	1.80	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.40
E	0.25	0.40
G	1.20	1.40
H	0.00	0.10
J	0.05	0.25
K	2.10	2.45

SOT-323 Soldering Footprint (mm)