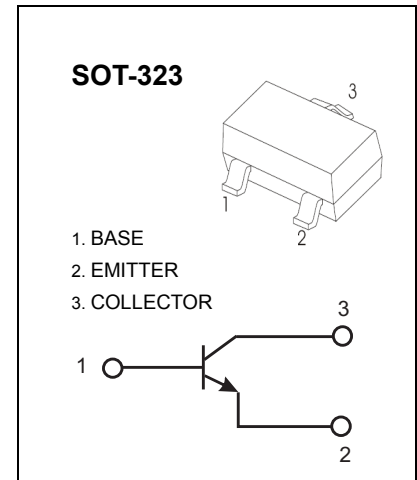


Features

- High current gain
- Excellent h_{FE} linearity
- High conductance
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

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°C unless otherwise noted)

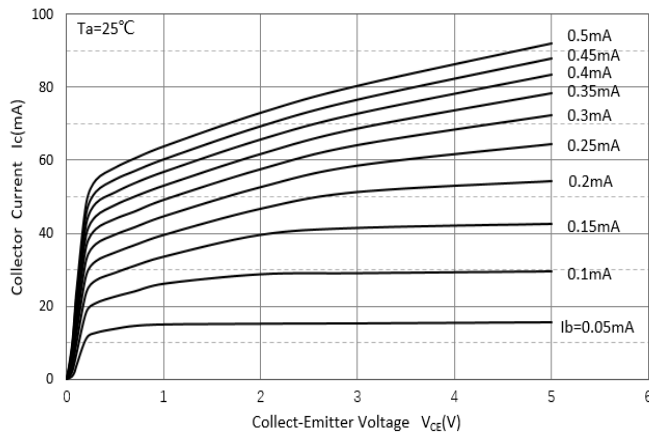
Parameter	Symbol	BC846AW-Q1 BC846BW-Q1	BC847AW-Q1 BC847BW-Q1 BC847CW-Q1	BC848AW-Q1 BC848BW-Q1 BC848CW-Q1	Unit
Collector-Base Voltage	V_{CBO}	80	50	30	V
Collector-Emitter Voltage	V_{CEO}	65	45	30	V
Emitter-Base Voltage	V_{EBO}	6	6	6	V
Collector Current (Continuous)	I_C	100			mA
Power Dissipation	P_D	200			mW
Operating Junction Temperature	T_J	-55 ~ +150			°C
Storage Temperature Range	T_{STG}	-55 ~ +150			°C

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

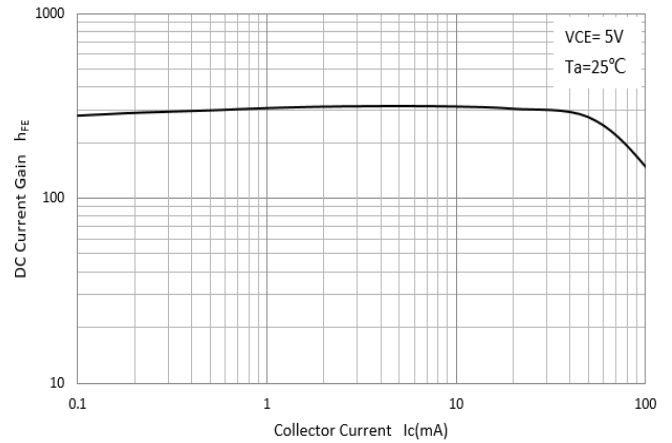
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage BC846-Q1	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	80	-	-	V
Collector-Base Breakdown Voltage BC847-Q1			50	-	-	
Collector-Base Breakdown Voltage BC848-Q1			30	-	-	
Collector-Emitter Breakdown Voltage BC846-Q1	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	65	-	-	V
Collector-Emitter Breakdown Voltage BC847-Q1			45	-	-	
Collector-Emitter Breakdown Voltage BC848-Q1			30	-	-	
Emitter-Base Breakdown Voltage BC846-Q1	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6	-	-	V
Emitter-Base Breakdown Voltage BC847-Q1			6	-	-	
Emitter-Base Breakdown Voltage BC848-Q1			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-Q1	h_{FE}	$V_{CE} = 5V, I_C = 2mA$	110	-	220	-
DC Current Gain BC846/847/848BW-Q1			200	-	450	-
DC Current Gain BC847/848CW-Q1			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)

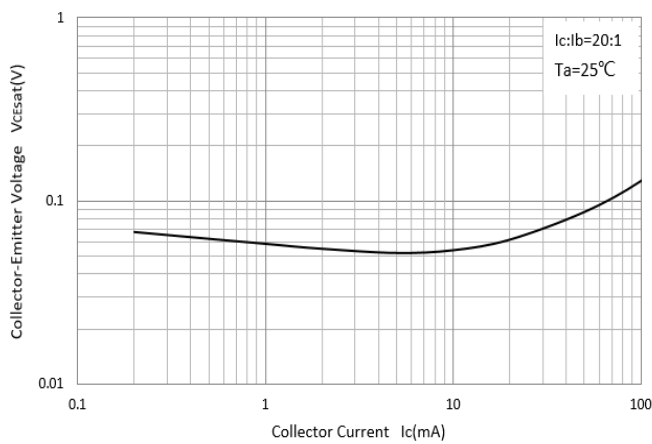
Static Characteristic



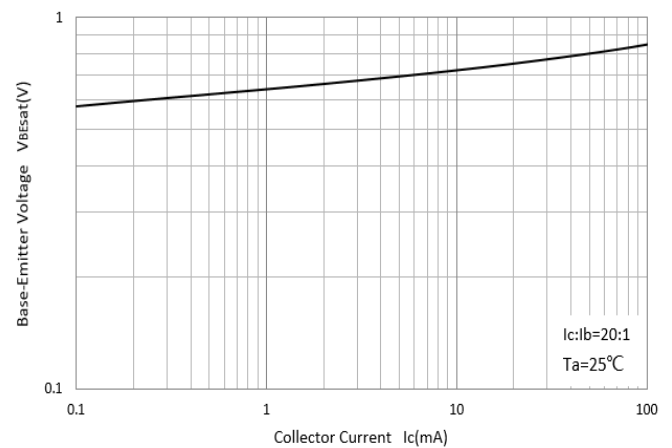
DC Current Gain



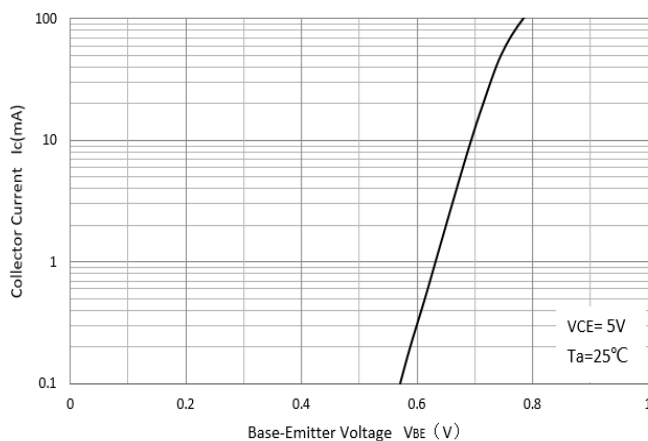
Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



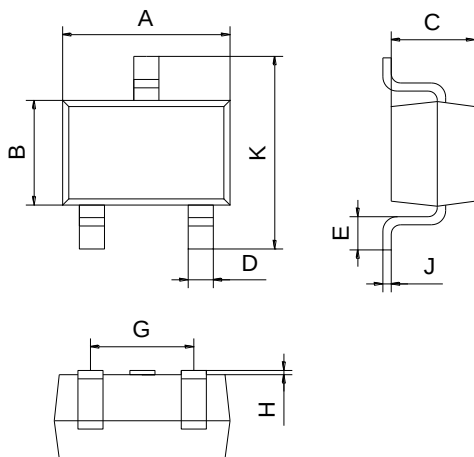
Base-Emitter On Voltage



Marking

Type number	Marking code
BC846AW-Q1	1A
BC846BW-Q1	1B
BC847AW-Q1	1E
BC847BW-Q1	1F
BC847CW-Q1	1G
BC848AW-Q1	1J
BC848BW-Q1	1K
BC848CW-Q1	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)

