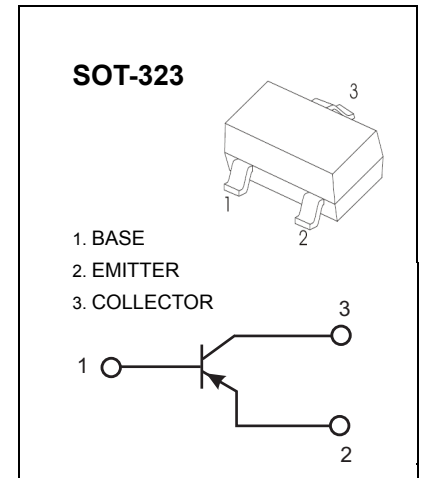


Features

- Capable of 0.2Watts($T_A=25^{\circ}\text{C}$) of Power Dissipation
- Collector-current -0.5A
- Collector-base Voltage -50V
- 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 and JESD22-B102



Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Item	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	-45	V
Collector-Base Voltage	V_{CBO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-0.5	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Operation Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}\text{C}$

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

Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -10\text{mA}$, $I_B = 0$	-45	
Collector-Base Voltage	V_{CBO}	V	$I_C = -10\text{uA}$, $I_E = 0$	-50	
Emitter-Base Voltage	V_{EBO}	V	$I_E = -1.0\text{uA}$, $I_C = 0$	-5.0	
Emitter-base Cut-off Current	I_{EBO}	μA	$V_{EB} = -4.0\text{V}$, $I_C = 0$		-0.1
Collector -base Cut-off Current	I_{CBO}	μA	$V_{CB} = -45\text{V}$, $I_E = 0$		-0.1
DC Current Gain	$h_{FE(1)}$		$I_C = -100\text{mA}$, $V_{CE} = -1.0\text{V}$	100	600
DC Current Gain	$h_{FE(2)}$		$I_C = -500\text{mA}$, $V_{CE} = -1.0\text{V}$	40	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$		-0.7
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$		-1.2

Small-signal Characteristics

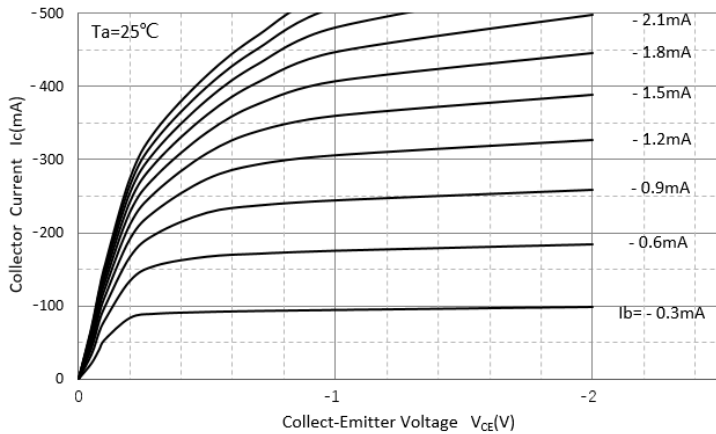
Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	f_T	MHz	$I_C = -10\text{mA}$, $V_{CE} = -5.0\text{V}$, $f = 100\text{MHz}$	80	

Classification of h_{FE}

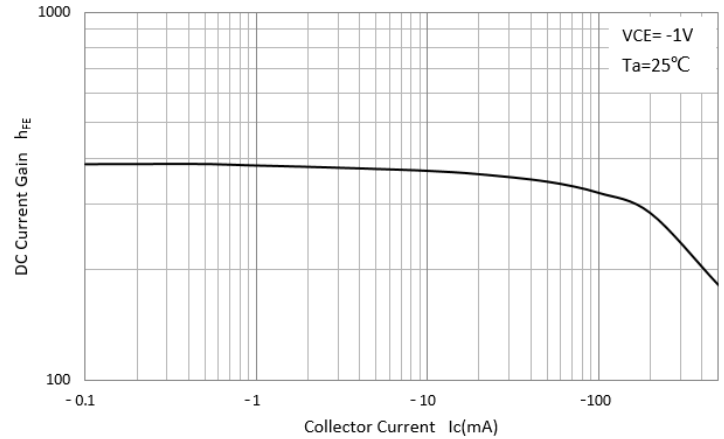
Rank	BC807-16W-Q1	BC807-25W-Q1	BC807-40W-Q1
Range	100-250	160-400	250-600

Characteristics (Typical)

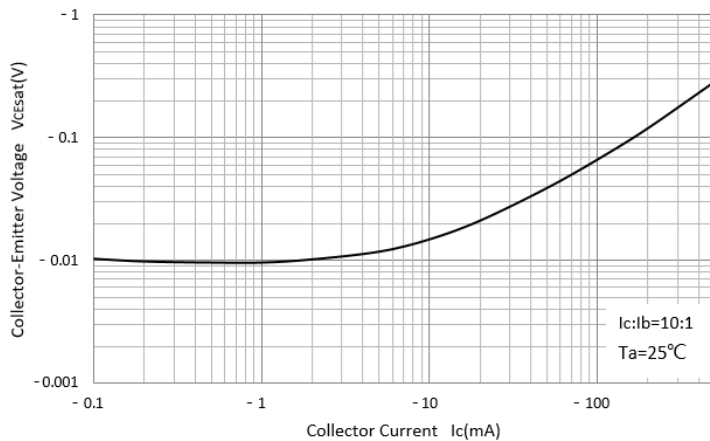
Static Characteristic



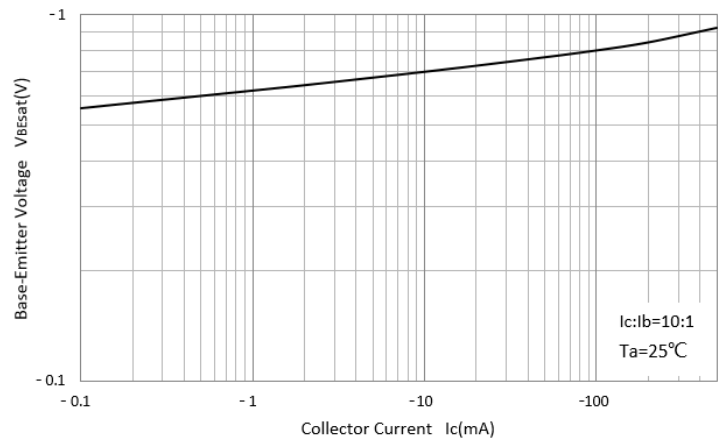
DC Current Gain



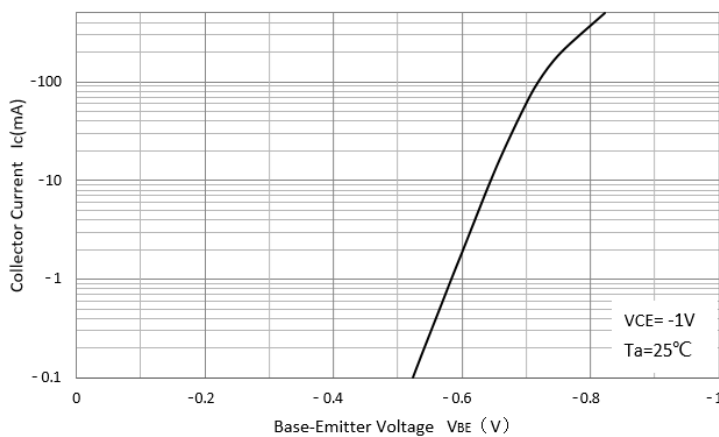
Collector-Emitter Saturation Voltage



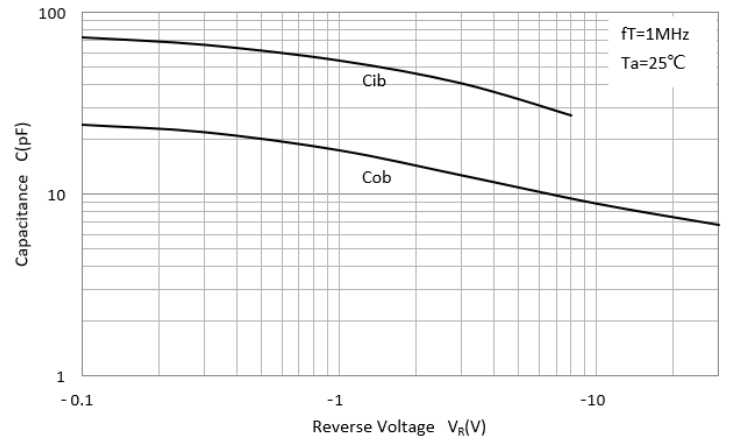
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



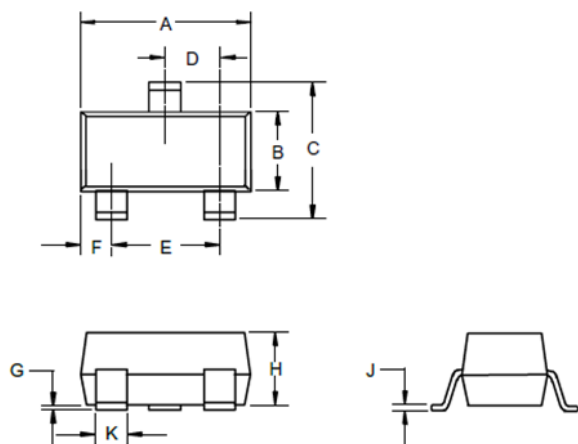
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Marking

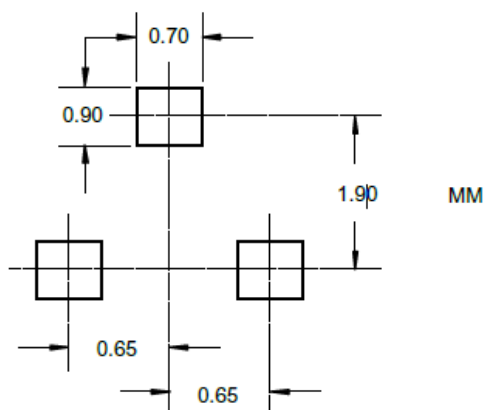
Type number	Marking code
BC807-16W-Q1	5A
BC807-25W-Q1	5B
BC807-40W-Q1	5C

SOT-323 Package Outline Dimensions



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65 Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

SOT-323 Soldering Footprint



Note:

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