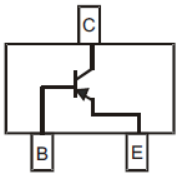
PNP General Purpose Transistors



SOT-323

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Part no. with suffix “Q” means AEC-Q101 qualified

Applications

- General purpose switching and amplification

Mechanical Data

- Case: SOT-323
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking:

BC807-16WQ	5A
BC807-25WQ	5B
BC807-40WQ	5C

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Value
Collector-Emitter Voltage	V_{CEO}	V	-45
Collector-Base Voltage	V_{CBO}	V	-50
Emitter-Base Voltage	V_{EBO}	V	-5.0
Collector Current	I_C	A	-0.5
Total Device Dissipation (*)	P_D	mW	200
Thermal Resistance from Junction to Ambient (*)	$R_{\theta JA}$	℃/W	625
Operation Junction Temperature	T_j	℃	150
Storage Temperature	T_{stg}	℃	-55 to +150

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch

■Electrical Characteristics (Ta=25℃ unless otherwise specified)

Item	Symbol	Unit	Conditions		Min	Max
Collector-Emitter Voltage	V_{CEO}	V	I_C= -10mA, I_B=0		-45	
Collector-Base Voltage	V_{CBO}	V	I_C= -10uA, I_E=0		-50	
Emitter-Base Voltage	V_{EBO}	V	I_E= -1.0uA, I_C=0		-5.0	
Emitter-base Cut-off Current	I_{EBO}	uA	V_{EB}= -4.0V, I_C=0			-0.1
Collector -base Cut-off Current	I_{CBO}	uA	V_{CB}= -45V, I_E=0			-0.1
DC Current Gain	h_{FE}		BC807-16WQ	V_{CE}= -1.0V, I_C= -100mA	100	250
			BC807-25WQ		160	400
			BC807-40WQ		250	600
DC Current Gain	h_{FE}		V_{CE}= -1.0V, I_C= -500mA		40	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	I_C= -500mA, I_B= -50mA			-0.7
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	I_C= -500mA, I_B= -50mA			-1.2

■ Small-signal Characteristics

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

■ Ordering Information (Example)

Prefered P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
BC807-16WQ THRU BC807-40WQ	F2	Approximate 0.005	3000	30000	120000	7” reel

■ Characteristics (Typical)

Fig. 1 - Static characteristic

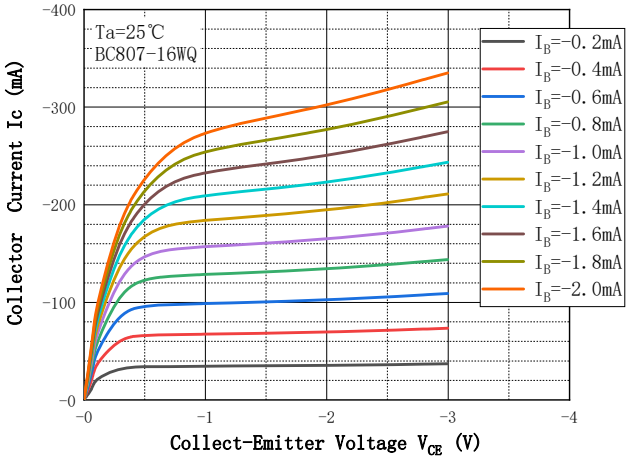


Fig. 2 - DC Current Gain

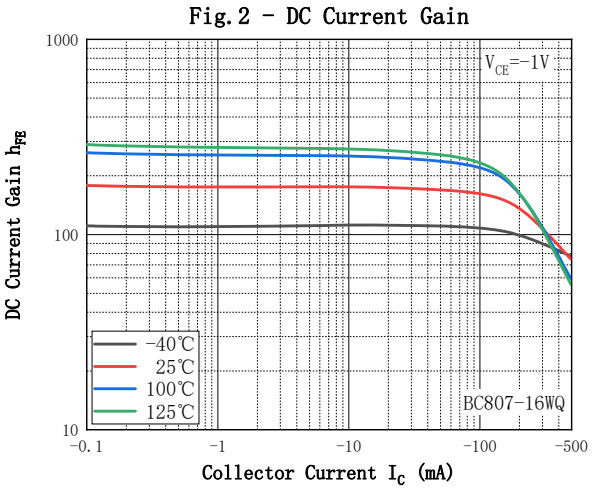


Fig. 3 - Static characteristic

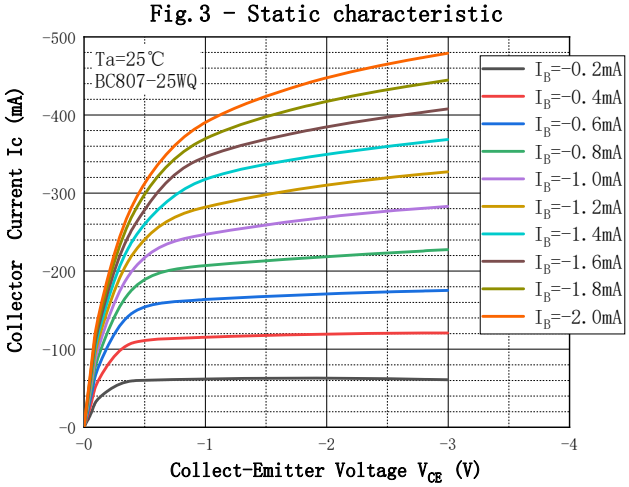


Fig. 4 - DC Current Gain

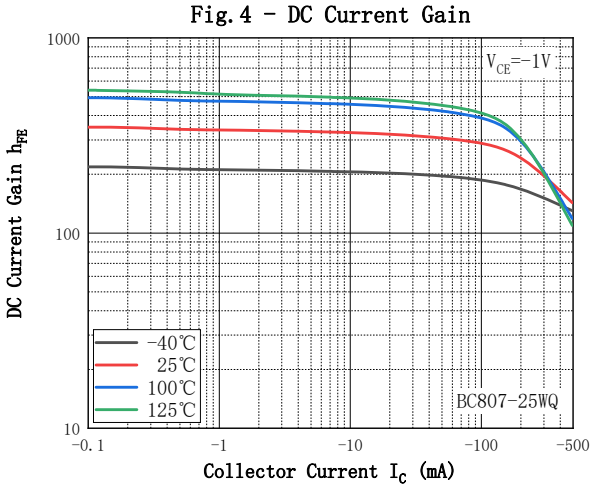


Fig. 5 - Static characteristic

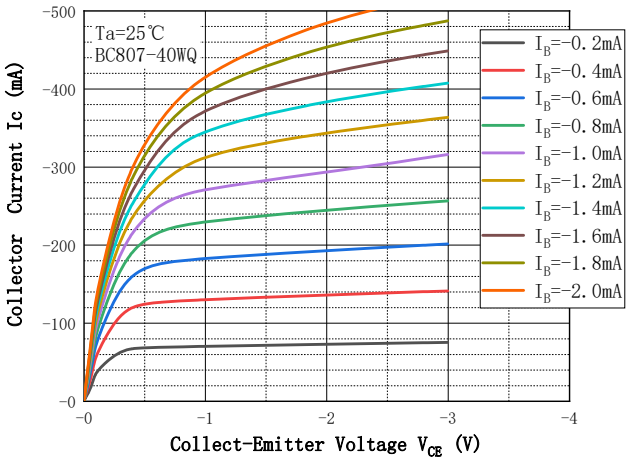


Fig. 6 - DC Current Gain

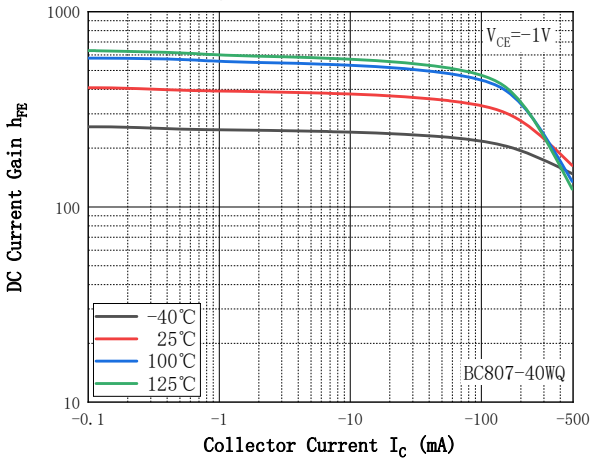


Fig. 7 - Collect-Emitter Saturation Voltage

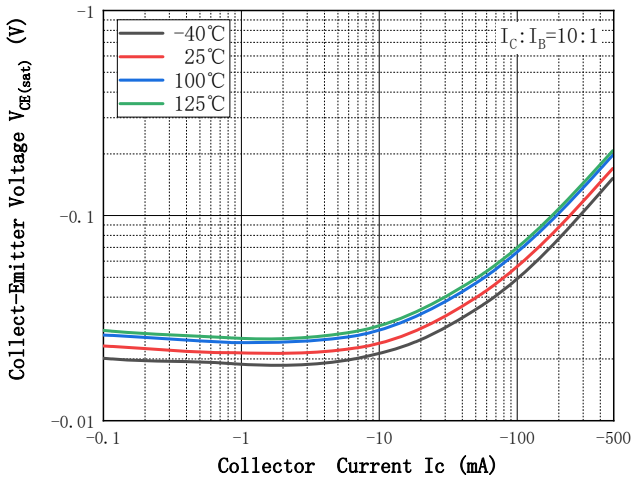


Fig. 8 - Base-Emitter Voltage

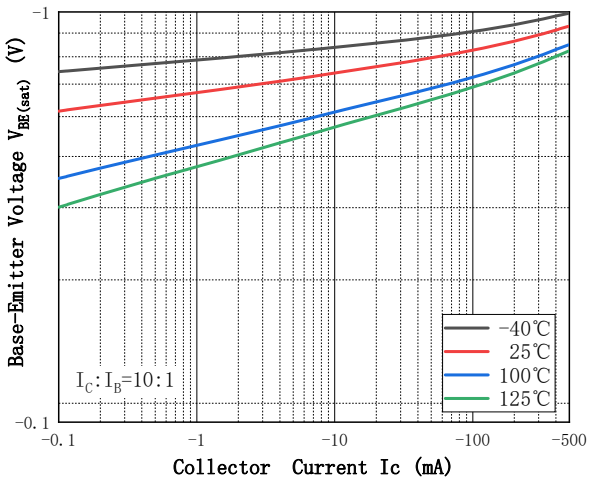


Fig. 9 - Base-Emitter On Voltage

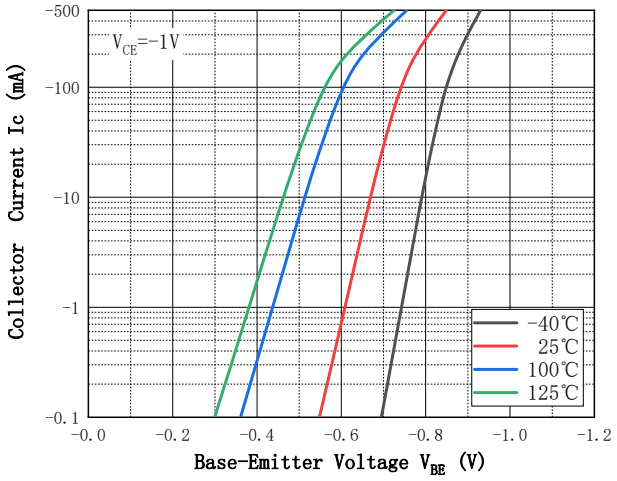
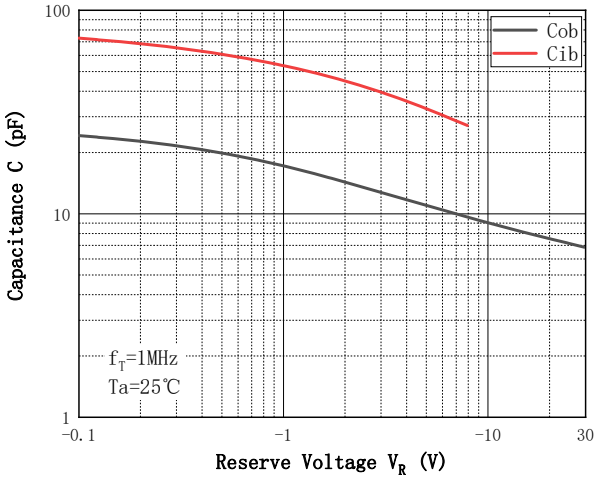
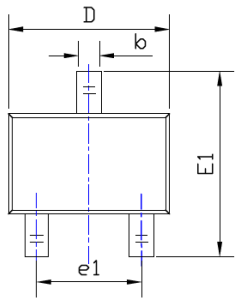


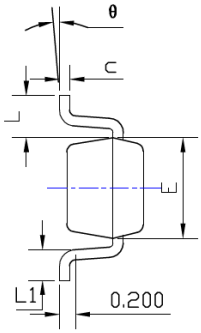
Fig. 10 - Cob/Cib—VCB/VEB



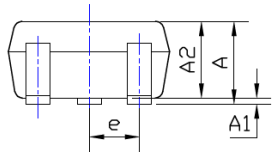
■ SOT-323 Package Outline Dimensions & Suggested Pad Layout



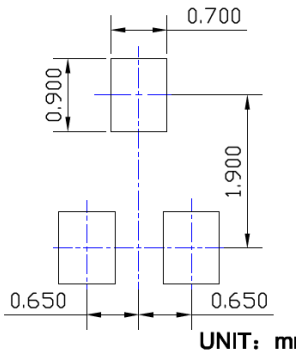
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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