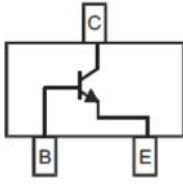


NPN General Purpose Amplifier



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

- NPN General purpose switching and amplification

Mechanical Data

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

BC817-16WQ	6A
BC817-25WQ	6B
BC817-40WQ	6C

■ Maximum Ratings (Ta=25°C unless otherwise noted)

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
Collector Current -Continuous	I_C	mA	500
Total Device Dissipation (*)	P_D	mW	200
Thermal Resistance Junction to Ambient (*)	R_{thJA}	K/W	625
Junction Temperature	T_j	°C	-55 to +150
Storage Temperature	T_{STG}	°C	-55 to +150

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



BC817-16WQ THRU BC817-40WQ

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=10mA, I_B=0$	45		
Collector-base breakdown voltage	V_{CBO}	V	$I_C=10\mu A, I_E=0$	50		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=1\mu A, I_C=0$	5		
Emitter-base cut-off current	I_{EBO}	μA	$V_{EB}=4V, I_C=0$			0.1
Collector-base cut-off current	I_{CBO}	μA	$V_{CB}=45V, I_E=0$			0.1
DC current gain	h_{FE}		BC817-16WQ	$V_{CE}=1V, I_C=100mA$	100	250
			BC817-25WQ		160	400
			BC817-40WQ		250	600
DC current gain	h_{FE}		$V_{CE}=1V, I_C=500mA$	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

■ Other Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Transition frequency	f_T	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$	100		

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BC817-16WQ THRU BC817-40WQ	F2	Approximate 0.005	3000	30000	120000	7" reel



BC817-16WQ THRU BC817-40WQ

■ Characteristics(Typical)

Fig.1 - Static Characteristic

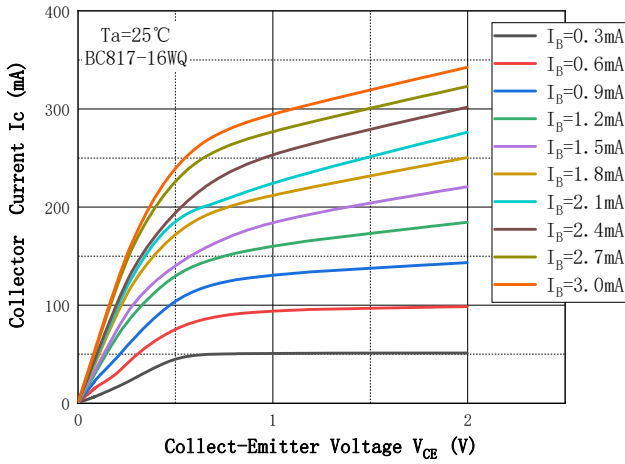


Fig.2 - DC Current Gian

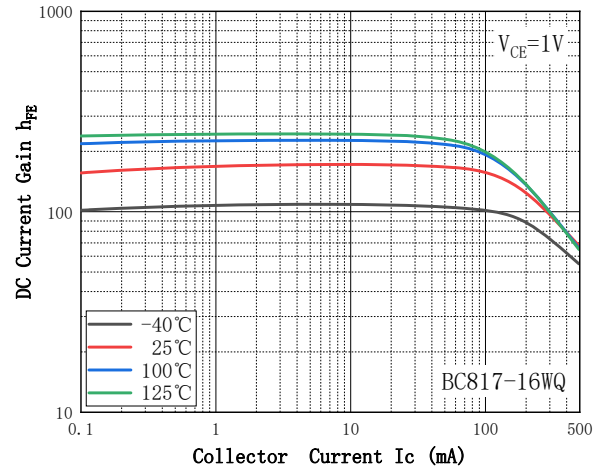


Fig.3 - Static Characteristic

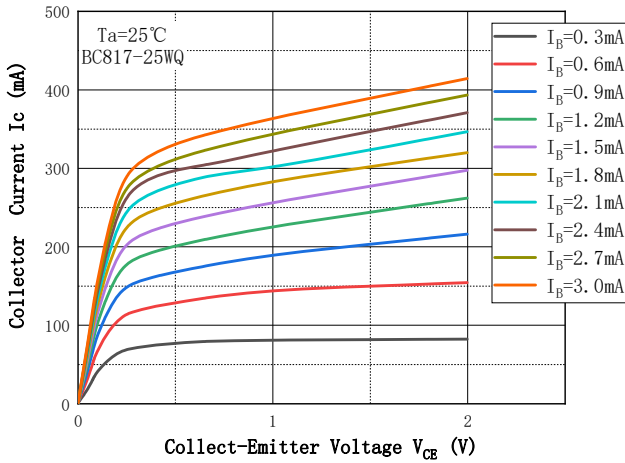


Fig.4 - DC Current Gian

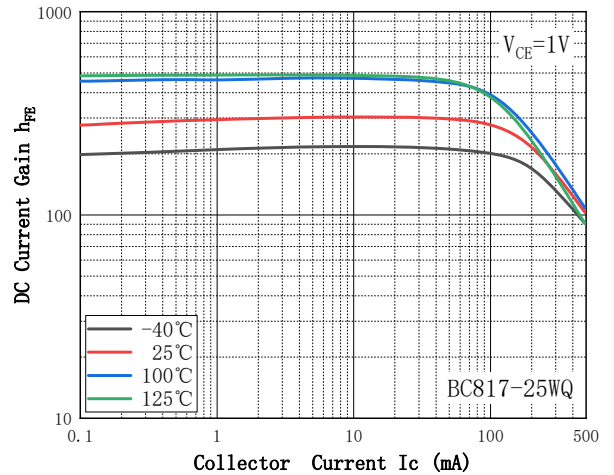


Fig.5 - Static Characteristic

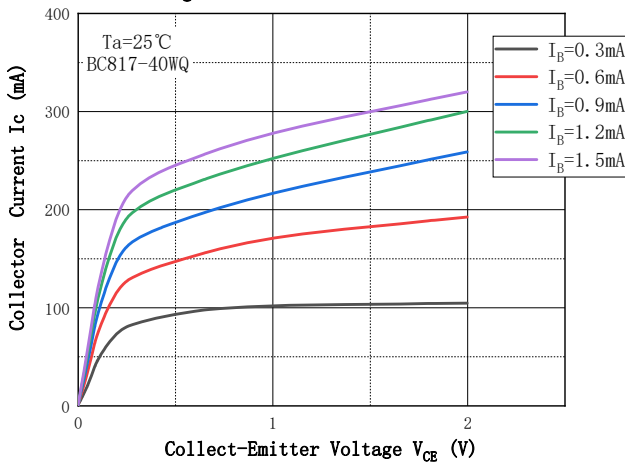
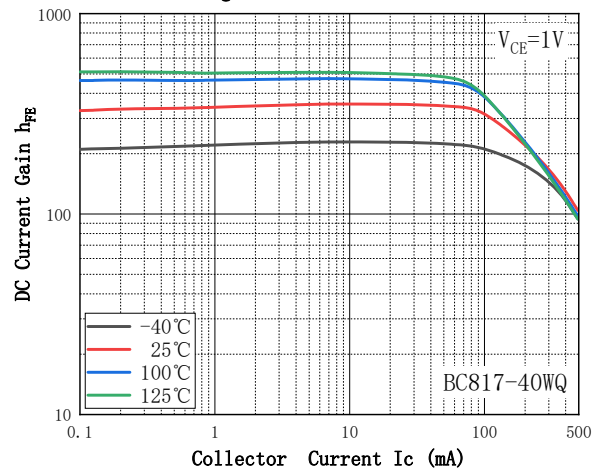


Fig.6 - DC Current Gian





BC817-16WQ THRU BC817-40WQ

Fig.7 - Collect-Emmitter Saturation Voltage

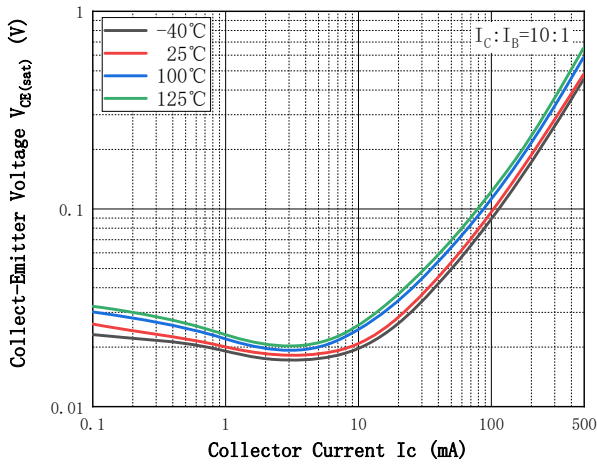


Fig.8 - Base-Emmitter Voltage

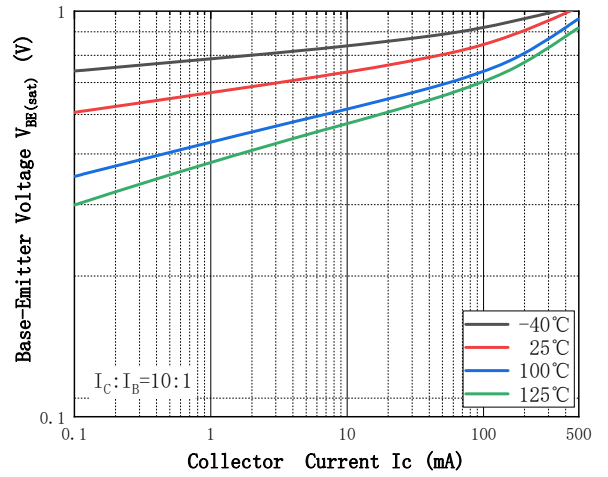


Fig.9 - Base-Emmitter On Voltage

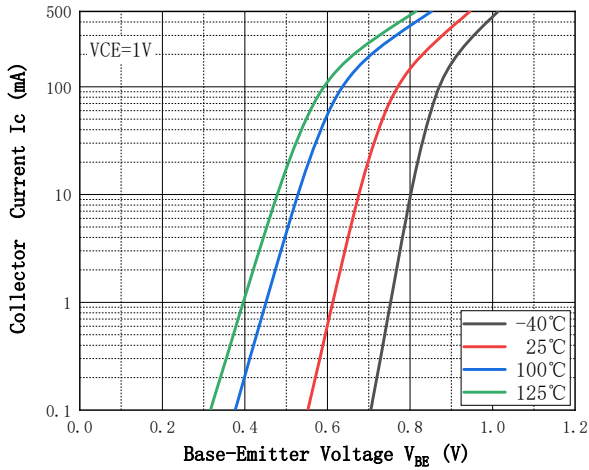
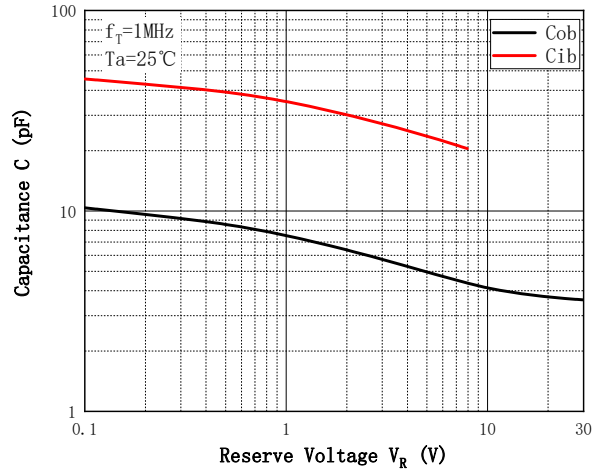


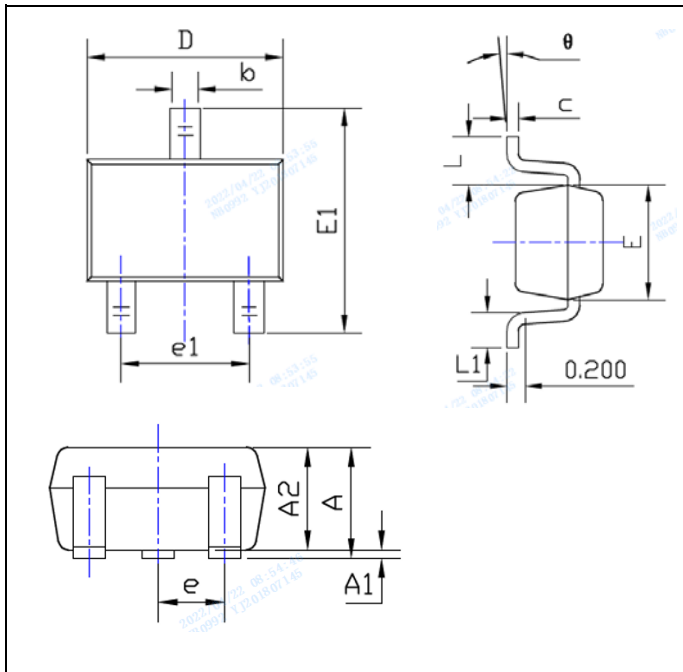
Fig.10 - Cob/Cib - V_{CB}/V_{EB}





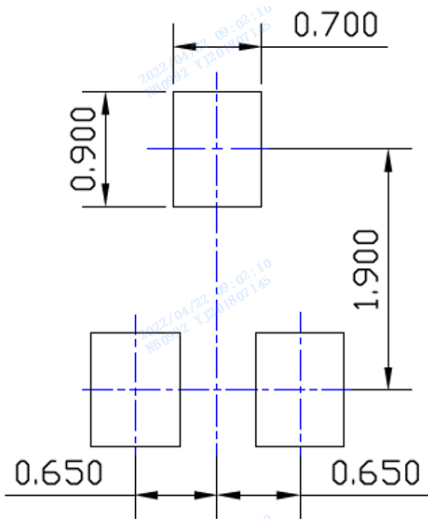
BC817-16WQ THRU BC817-40WQ

■ SOT-323 Package Outline Dimensions



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°

■ SOT-323 Suggested Pad Layout



Unit: mm



BC817-16WQ THRU BC817-40WQ

Disclaimer

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