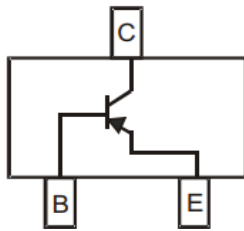


## PNP General Purpose Amplifier



**SOT-23**

### 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

### Mechanical Data

- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:**

	Marking
BC807-16Q	5A
BC807-25Q	5B
BC807-40Q	5C

### ■ 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	300
Thermal Resistance Junction to Ambient (*)	$R_{thJA}$	K/W	417
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.



# BC807-16Q THRU BC807-40Q

RoHS  
COMPLIANT

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

Item	Symbol	Unit	Conditions	Min	Max
Collector-emitter breakdown voltage	$V_{CEO}$	V	$I_C = -10\text{mA}, I_B = 0$	-45	-
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C = -10\text{uA}, I_E = 0$	-50	-
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E = -1.0\text{uA}, I_C = 0$	-5.0	-
Emitter cut-off current	$I_{EBO}$	uAdc	$V_{EB} = -4.0\text{Vdc}, I_C = 0$	-	-0.1
Collector cut-off current	$I_{CBO}$	uAdc	$V_{CB} = -45\text{Vdc}, I_E = 0$	-	-0.1
Collector cut-off current	$I_{CEO}$	uAdc	$V_{CE} = -40\text{Vdc}, I_B = 0$	-	-0.2

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

Item	Symbol	Unit	Conditions	Min	Max
DC Current Gain	BC807-16Q	$h_{FE}$	$I_C = -100\text{mA}, V_{CE} = -1.0\text{Vdc}$	100	250
	BC807-25Q			160	400
	BC807-40Q			250	600
DC Current Gain	$h_{FE}$	-	$I_C = -500\text{mA}, V_{CE} = -1.0\text{Vdc}$	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 (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Max
Current Gain-bandwidth Product	$f_T$	MHz	$I_C = -10\text{mA}, V_{ce} = -5.0\text{Vdc}, f = 100\text{MHz}$	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
BC807-16Q THRU BC807-40Q	F2	Approximate 0.01	3000	30000	120000	7" reel



## ■ Characteristics (Typical)

Fig.1 - Static characteristic

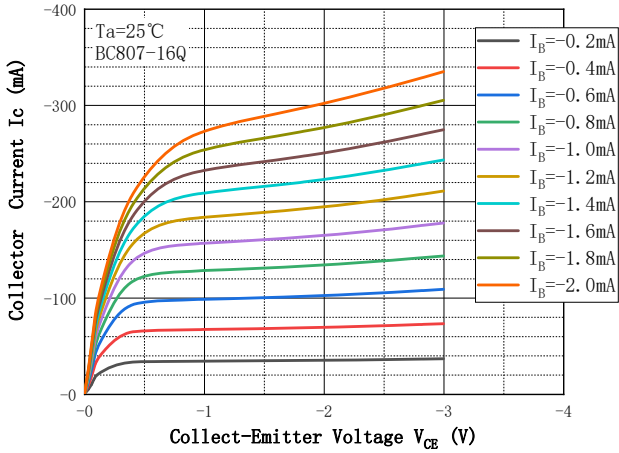


Fig.2 - DC Current Gain

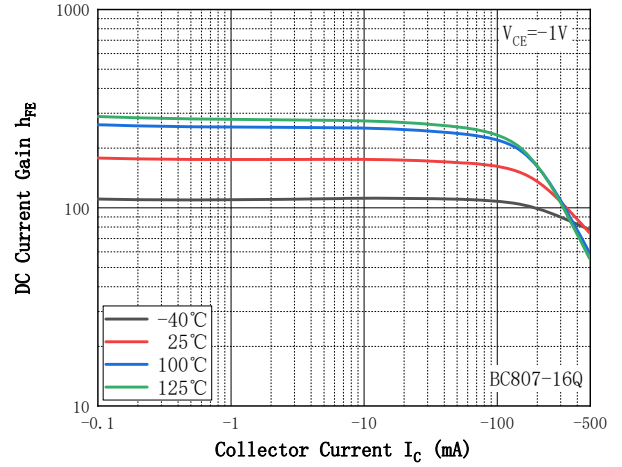


Fig.3 - Collect-Emmitter Saturation Voltage

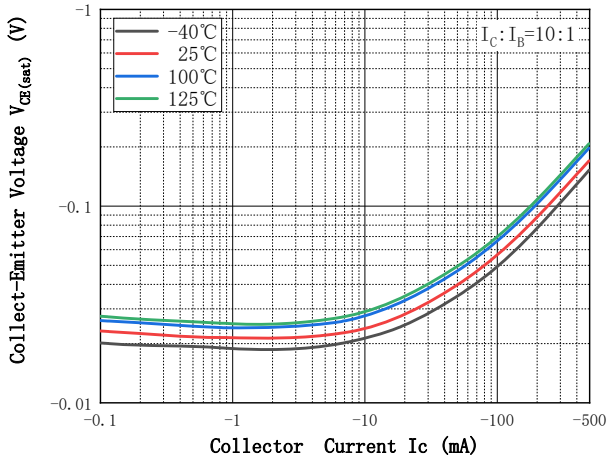


Fig.4 - Base-Emmitter Voltage

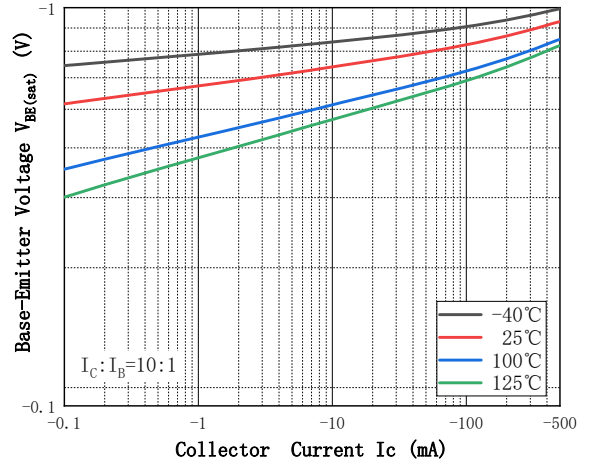


Fig.5 - Base-Emmitter On Voltage

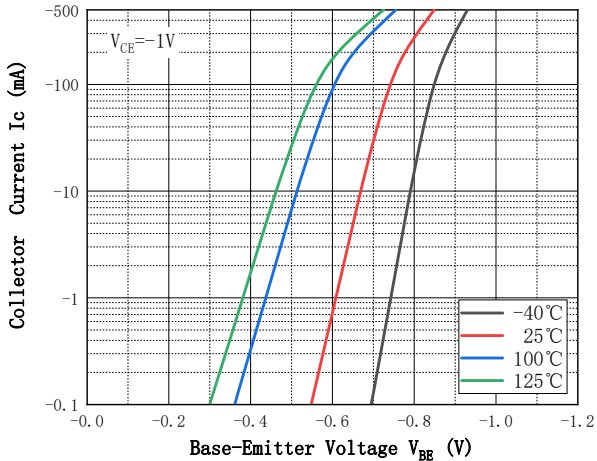
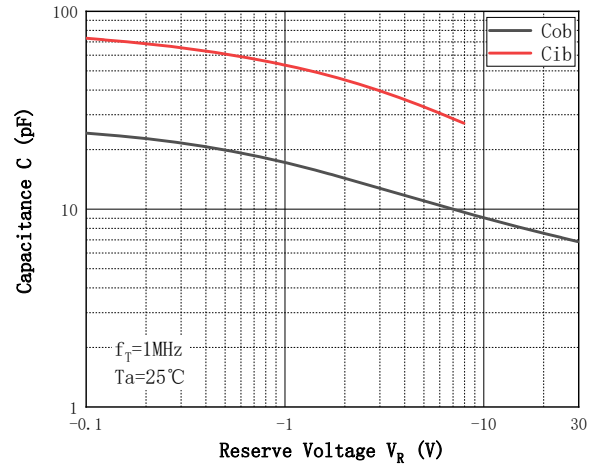
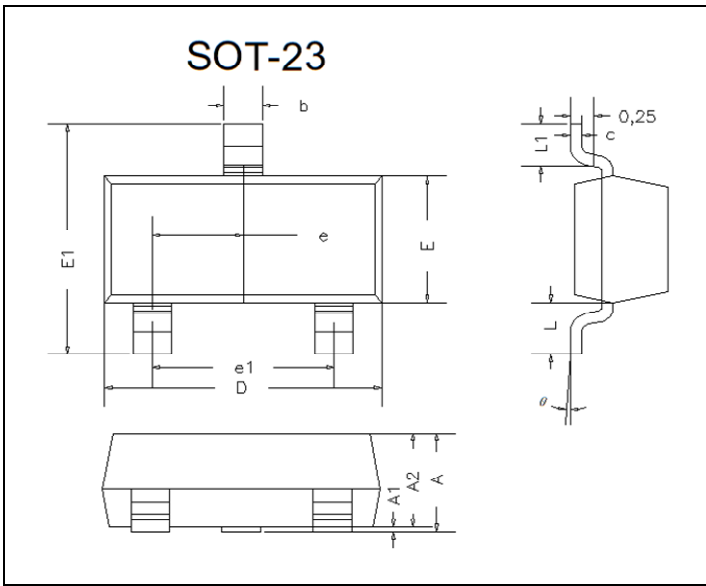


Fig.6 - Cob/Cib—VCB/VEB

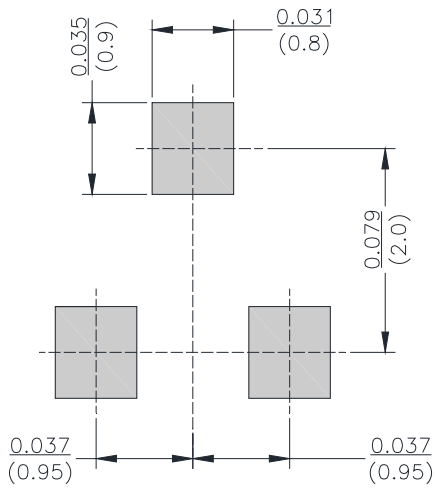


## ■ SOT-23 Package Outline Dimensions



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.035	0.045	0.90	1.15	
A1	0.000	0.004	0.00	0.10	
A2	0.035	0.041	0.90	1.05	
b	0.012	0.020	0.30	0.50	
c	0.004	0.008	0.10	0.20	
D	0.110	0.118	2.80	3.00	
E	0.047	0.055	1.20	1.40	
E1	0.089	0.100	2.25	2.55	
e	0.370TYP		0.95TYP		
e1	0.071	0.079	1.80	2.00	
L	0.220REF		0.55REF		
L1	0.012	0.020	0.30	0.50	
θ	0°	8°	0°	8°	

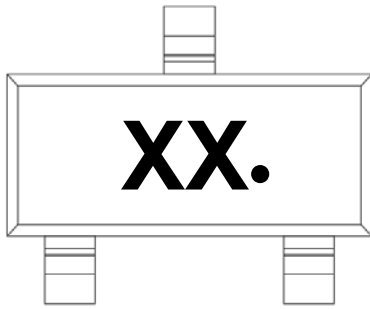
## ■ SOT-23 Suggested Pad Layout



Unit:  $\frac{\text{inch}}{\text{mm}}$



## ■ Marking Information



**Note:**

1. All marking is at middle of the product body
2. All marking is in laser marking
3. XX is Marking Code determined by specific model
4. Body color: Black



## Disclaimer

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