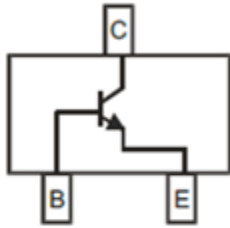


## NPN General Purpose Amplifier



**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
BC817-16Q	6A
BC817-25Q	6B
BC817-40Q	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	300
Junction Temperature	$T_j$	°C	-55 to +150
Storage Temperature	$T_{STG}$	°C	-55 to +150

### ■ 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	$I_C = 10\mu\text{A}, I_E = 0$	50	-
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E = 1.0\mu\text{A}, I_C = 0$	5.0	-
Emitter cut-off current	$I_{EBO}$	$\mu\text{A}$	$V_{EB} = 4.0\text{Vdc}, I_C = 0$	-	0.1
Collector cut-off current	$I_{CBO}$	$\mu\text{A}$	$V_{CB} = 45\text{Vdc}, I_E = 0$	-	0.1



# BC817-16Q THRU BC817-40Q

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

Item		Symbol	Unit	Conditions	Min	Max
DC Current Gain	BC817-16Q	$h_{FE}$	-	$I_C=100\text{mA}, V_{CE}=1.0\text{Vdc}$	100	250
	BC817-25Q				160	400
	BC817-40Q				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)

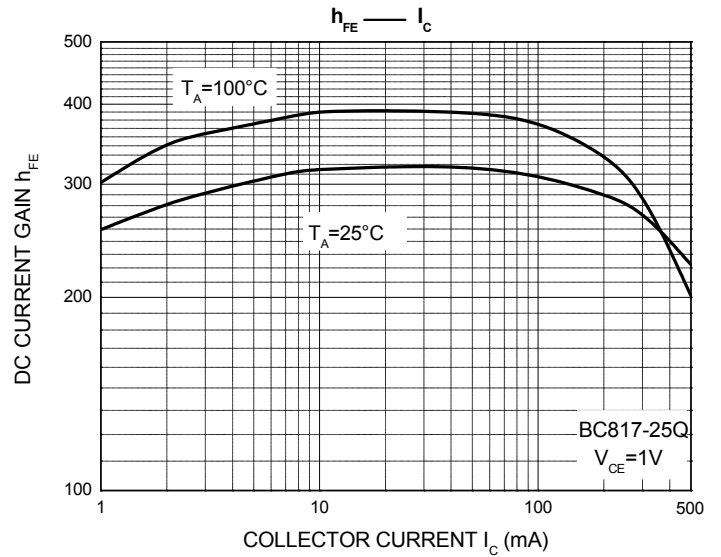
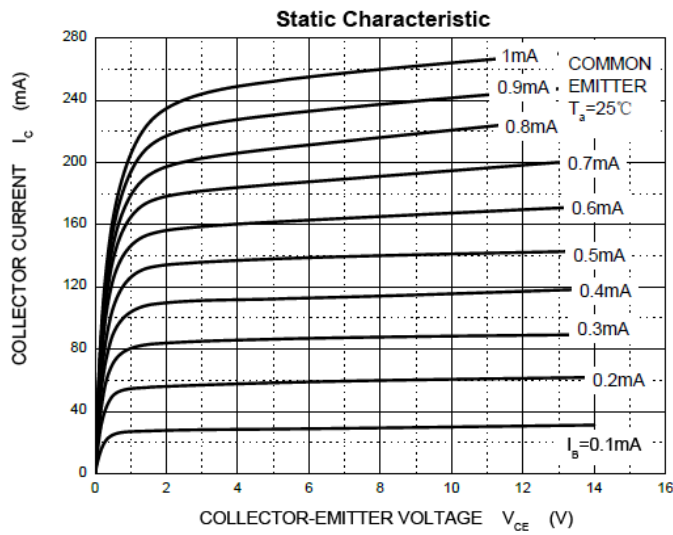
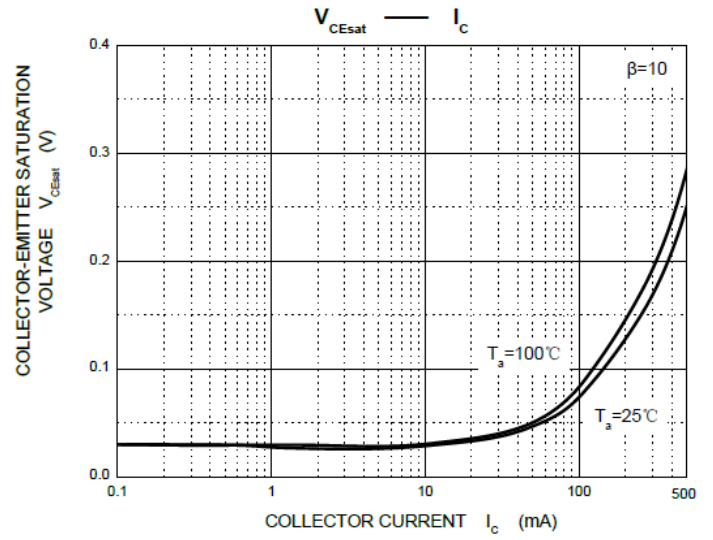
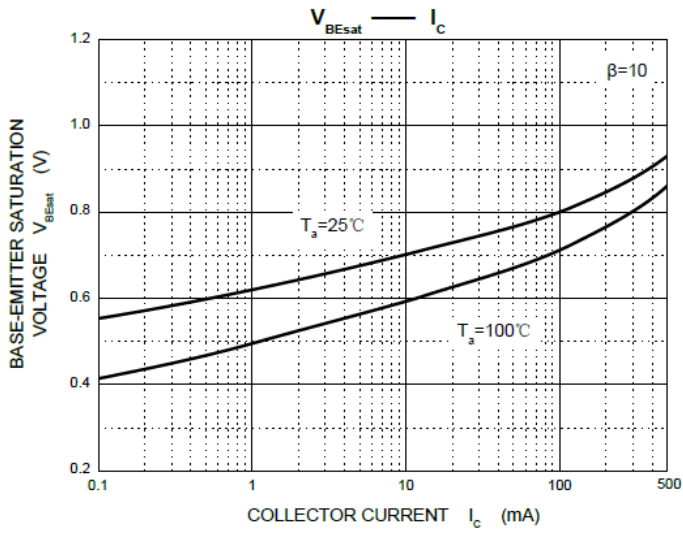
Item	Symbol	Unit	Conditions	Min	Max
Current Gain-bandwidth Product	$f_T$	MHz	$I_C=10\text{mA}, V_{ce}=5.0\text{Vdc}, f=100\text{MHz}$	100	-

## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BC817-16Q THRU BC817-40Q	F2	Approximate 0.01	3000	30000	120000	7" reel



## ■ Characteristics (Typical)

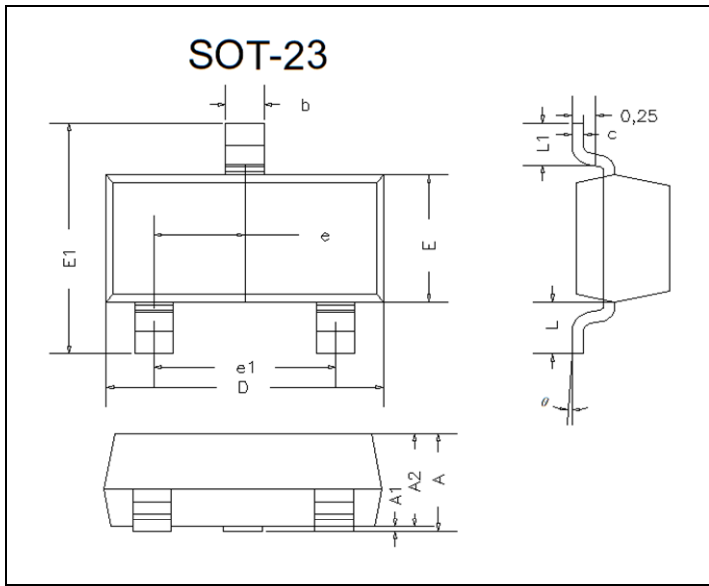




# BC817-16Q THRU BC817-40Q

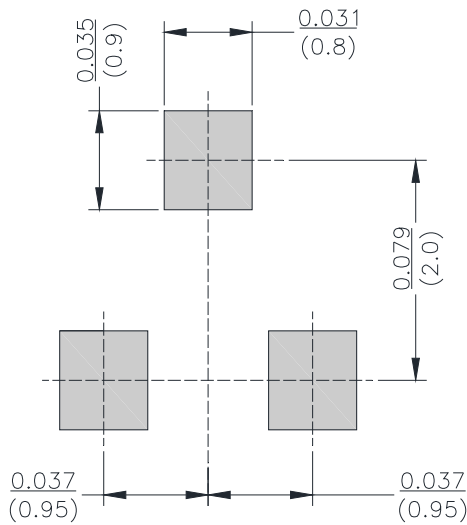
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## ■ SOT-23 Package Outline Dimensions



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



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