



## DESCRIPTION

The BC817 is available in SOT-23 Package

## FEATURES

- For general AF applications.
- High collector current.
- High current gain.
- Low collector-emitter saturation voltage

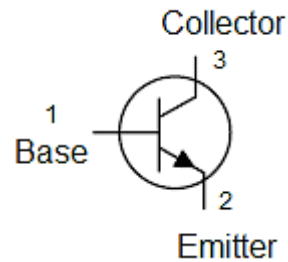
## ORDERING INFORMATION

Package Type	Part Number
SOT-23	BC817
	BC817-16L
	BC817-25L
	BC817-40L
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

## APPLICATIONS

- General Purpose Switching and Amplification

## PIN DESCRIPTION



## CLASSIFICATION OF $h_{FE}$

Part Number	$h_{FE}$ Range
BC817	100~600
BC817-16L	100~250
BC817-25L	160~400
BC817-40L	250~600



## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub>=25°C

V <sub>CB0</sub> , Collector-Base Voltage	50V
V <sub>CEO</sub> , Collector-Emitter Voltage	45V
V <sub>EBO</sub> , Emitter-Base Voltage	5V
I <sub>C</sub> , Collector Current-Continuous	500mA
P <sub>D</sub> , power dissipation	300mW
T <sub>J</sub> , T <sub>STG</sub> , Junction and Storage Temperature	-65°C ~150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub>=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>CB0</sub>	I <sub>C</sub> = 10μA, V <sub>BE</sub> = 0	50	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	45	-	-	V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> = 1μA, I <sub>C</sub> = 0	5	-	-	V
Collector cutoff current	I <sub>CES</sub>	V <sub>CB</sub> = 45 V, V <sub>BE</sub> = 0	-	-	100	nA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> = 0	-	-	100	nA
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> = 100mA, V <sub>CE</sub> = 1V	100	-	600	
		I <sub>C</sub> = 500mA, V <sub>CE</sub> = 1V	40	-	-	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	-	-	0.7	V
Base emitter on voltage	V <sub>BE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	-	-	1.2	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz	-	10	-	pF
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5V, f = 100MHz	100	-	-	MHz



## ELECTRICAL CHARACTERISTICS CURVES

Fig1 Power Derating Curve

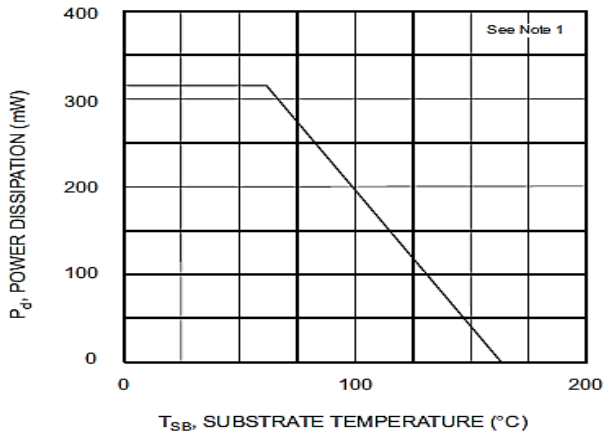


Fig2 Gain-Bandwidth Product vs Collector Current

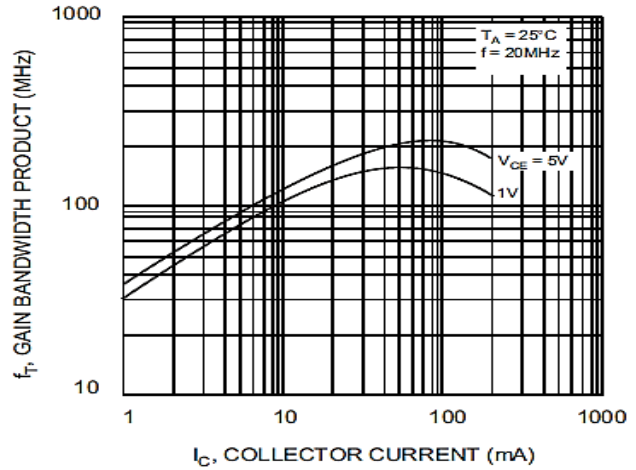


Fig3 Collector Sat. Voltage vs Collector Current

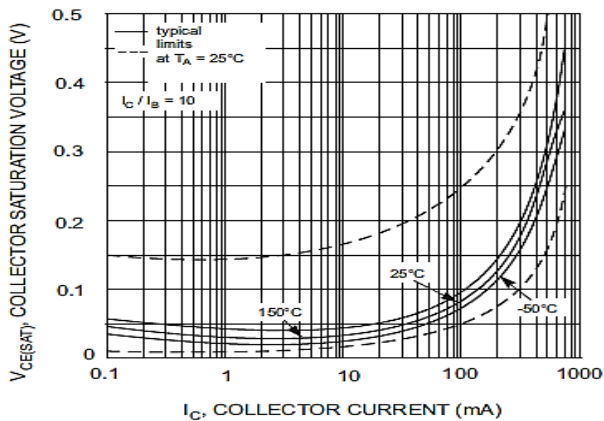


Fig4. DC Current Gain vs Collector Current

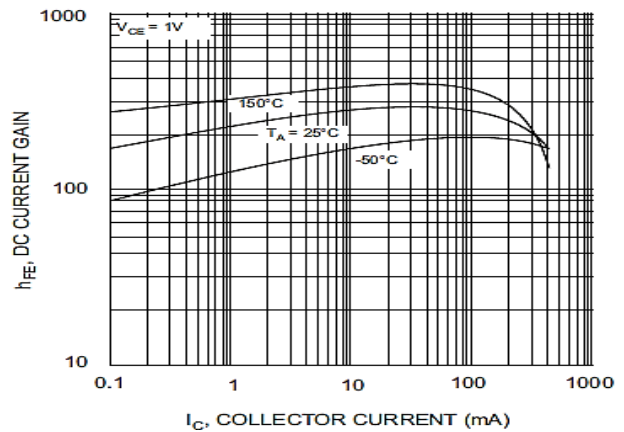


Fig5 Typical Emitter-Collector Characteristics

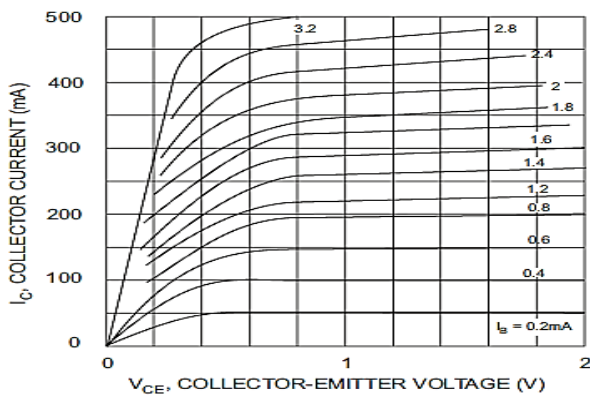
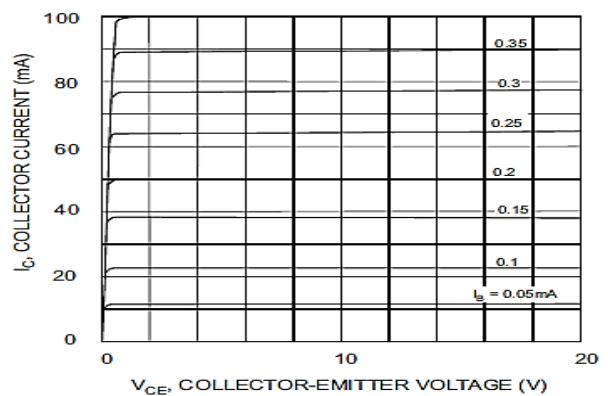


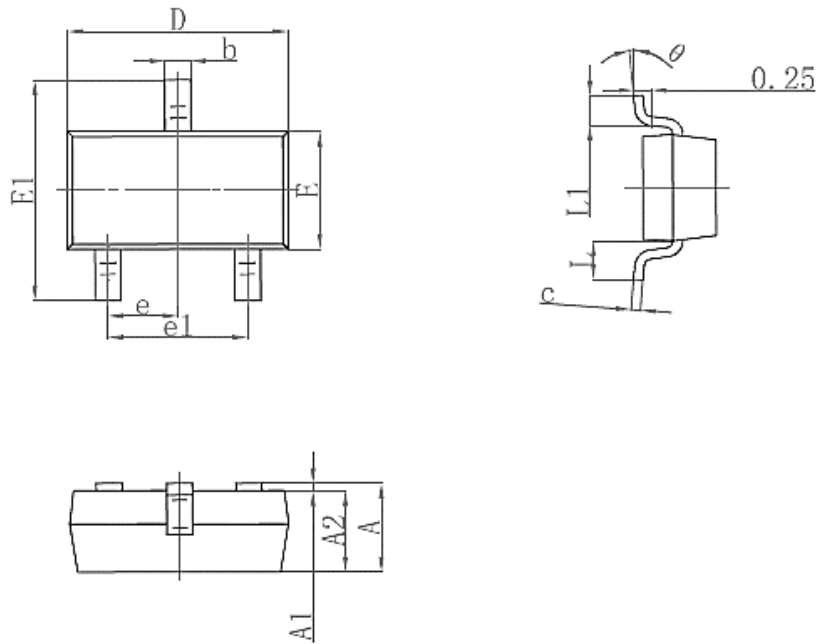
Fig6 Typical Emitter-Collector Characteristics





## PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



Symbol	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.960 TYP	
e1	1.800	2.000
L	0.550 REF	
L1	0.300	0.500
$\theta$	0°	8°



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