

# PNP Transistor

multicomp **PRO**

RoHS  
Compliant



## Features

- Low current (maximum 100mA)
- Low voltage (maximum 65V)

## Applications

- General purpose switching and amplification

### Max. Ratings and Characteristics: T<sub>AMB</sub> = 25°C unless otherwise specified

Parameter	Symbol	Values	Unit
Collector - Base Voltage - BC856 BC857 BC858	V <sub>CB0</sub>	-80 -50 -30	V
Collector - Emitter Voltage - BC856 BC857 BC858	V <sub>CEO</sub>	-65 -45 -30	
Emitter - Base Voltage	V <sub>EBO</sub>	-5	
Collector Current - Continuous	I <sub>C</sub>	-0.1	A
Collector Dissipation	P <sub>C</sub>	250	mW
Junction and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA I <sub>E</sub> =0 BC856 BC857 BC858	-80 -50 -30			V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -10μA I <sub>B</sub> =0 BC856 BC857 BC858	-65 -45 -30			
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -1μA I <sub>C</sub> = 0	-5	-	-	
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> = -30V I <sub>E</sub> = 0	-	-1	-15	nA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0	-	-	-0.1	μA
DC Current Gain BC856, 857 BC856A, 857A, 858A BC856B, 857B, 858B BC857C, 858C	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -2mA	125 125 220 420	-	475 250 475 800	-
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -100mA, I <sub>B</sub> = -5mA I <sub>C</sub> = -10mA, I <sub>B</sub> = -0.5mA	-	-	-0.65 -0.3	V
Base - Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = -0.5mA I <sub>C</sub> = -100mA, I <sub>B</sub> = -5mA	-	-0.7 -0.85	-	V
Base Emitter Voltage	V <sub>BE</sub>	I <sub>C</sub> = -2mA, V <sub>CE</sub> = -5V I <sub>C</sub> = -10mA, V <sub>CE</sub> = -5V	-0.6	-0.65	-0.75 -0.82	V

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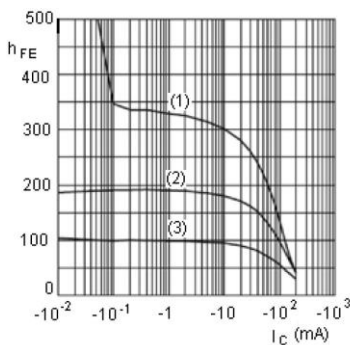
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# PNP Transistor

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector Capacitance	$C_C$	$V_{CB} = -10V, I_E = I_C = 0$ $f = 1MHz$	-	4.5	-	pF
Transition Frequency	F	$I_C = -200\mu A, V_{CE} = -5V,$ $R_S = 2k\Omega, f = 1kHz,$ $B = 200Hz$	-	2	10	dB
Transition Frequency	$f_T$	$V_{CE} = -10, I_C = -50,$ $f = 20 MHz$	100	-	-	MHz

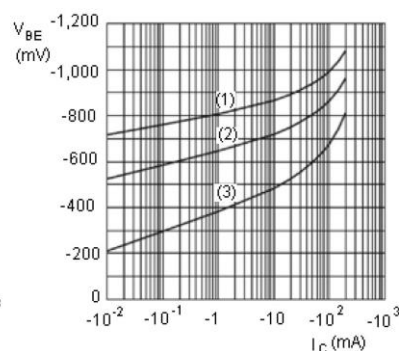
## Maximum Ratings and Characteristics : $T_{amb} = 25^\circ C$ unless otherwise specified

### Ratings and Characteristic Curves



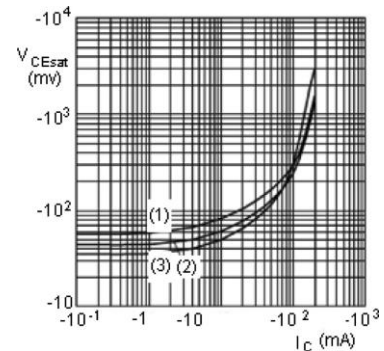
BC857A :  $V_{CE} = -5V$   
(1)  $T_{amb} = 150^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = -55^\circ C$

DC Current Gain as a Function of Collector Current; Typical Values



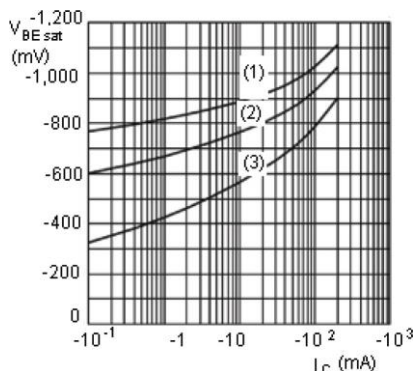
BC857A :  $V_{CE} = -5V$   
(1)  $T_{amb} = -55^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = 150^\circ C$

Base-Emitter Voltage as a Function of Collector Current; Typical Values



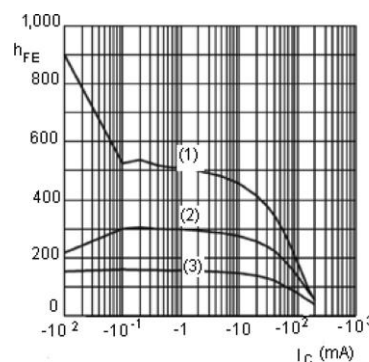
BC857A :  $I_C / I_B = 20$   
(1)  $T_{amb} = 150^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = -55^\circ C$

Collector-Emitter Saturation Voltage as a Function of Collector Current; Typical Values



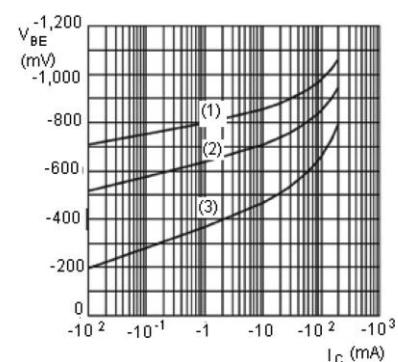
BC857A :  $I_C / I_B = 20$   
(1)  $T_{amb} = -55^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = 150^\circ C$

Base-Emitter Voltage as a Function of Collector Current; Typical Values



BC857B :  $V_{CE} = -5V$   
(1)  $T_{amb} = 150^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = -55^\circ C$

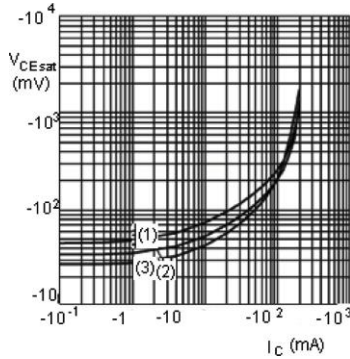
DC Current Gain as a Function of Collector Current; Typical Values



BC857B :  $V_{CE} = -5V$   
(1)  $T_{amb} = -55^\circ C$   
(2)  $T_{amb} = 25^\circ C$   
(3)  $T_{amb} = 150^\circ C$

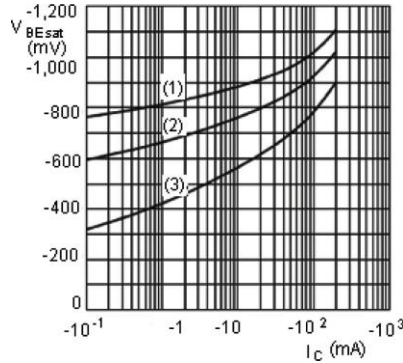
Base-Emitter Voltage as a Function of Collector Current; Typical Values

# PNP Transistor



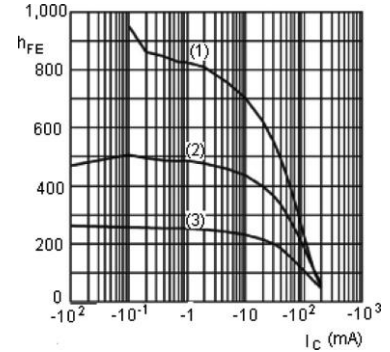
**BC857B : IC / IB = 20**  
 (1) Tamb = 150°C  
 (2) Tamb = 25°C  
 (3) Tamb = -55°C

Collector-Emitter Saturation Voltage as a Function of Collector Current; Typical Values



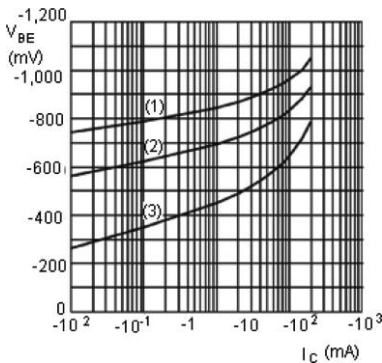
**BC857B : IC / IB = 20**  
 (1) Tamb = -55°C  
 (2) Tamb = 25°C  
 (3) Tamb = 150°C

Base-Emitter Voltage as a Function of Collector Current; Typical Values



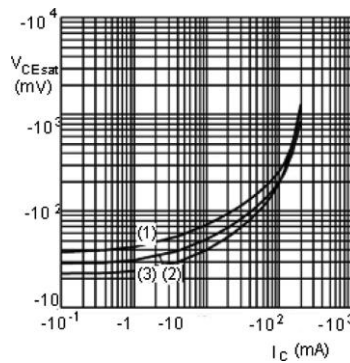
**BC857C : VCE = -5 V**  
 (1) Tamb = 150°C  
 (2) Tamb = 25°C  
 (3) Tamb = -55°C

DC Current Gain as a Function of Collector Current; Typical Values



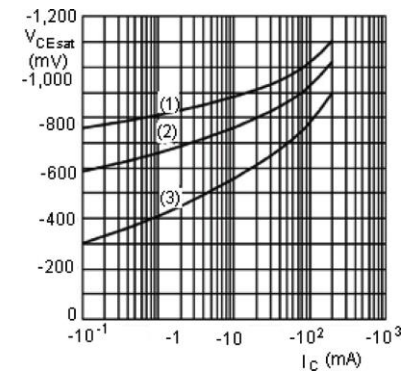
**BC857C : VCE = -5 V**  
 (1) Tamb = -55°C  
 (2) Tamb = 25°C  
 (3) Tamb = 150°C

Base-Emitter Voltage as a Function of Collector Current; Typical Values



**BC857C : IC / IB = 20**  
 (1) Tamb = 150°C  
 (2) Tamb = 25°C  
 (3) Tamb = -55°C

Collector-Emitter Saturation Voltage as a Function of Collector Current; Typical Values

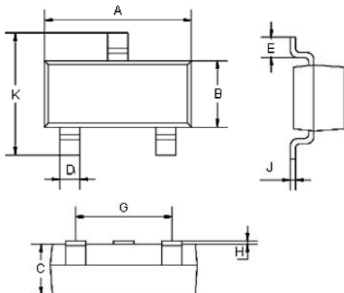


**BC857C : IC / IB = 20**  
 (1) Tamb = -55°C  
 (2) Tamb = 25°C  
 (3) Tamb = 150°C

Base-Emitter Voltage as a Function of Collector Current; Typical Values

## Package Outline

### Plastic Surface Mounted Package



SOT-23		
Dim.	Min.	Max.
A	2.85	2.95
B	1.25	1.35
C	1 Typical	
D	0.4 Typical	
E	0.35	0.48

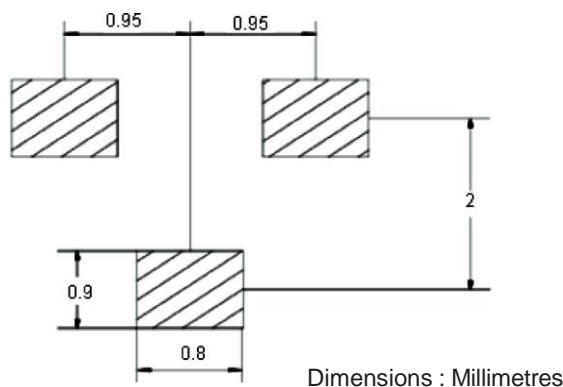
SOT-23		
Dim.	Min.	Max.
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45

Dimensions : Millimetres

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# PNP Transistor

## Soldering Footprint



Part Number	Marking code
BC856	3D
BC856A	3A
BC856B	3B
BC857	3H
BC857A	3E
BC857B	3F
BC857C	3G
BC858B	3K

## Package Information

Device	Package	Shipping
BC856 / 857 / 858	SOT-23	3,000 / Tape and Reel

## Part Number Table

Description	Part Number
Transistor, PNP, 0.1A, 65V, SOT23	BC856
Transistor, PNP, 0.1A, 65V, SOT23	BC856A
Transistor, PNP, 0.1A, 65V, SOT23	BC856B
Transistor, PNP, 0.1A, 45V, SOT23	BC857
Transistor, PNP, 0.1A, 45V, SOT23	BC857A
Transistor, PNP, 0.1A, 45V, SOT23	BC857B
Transistor, PNP, 0.1A, 45V, SOT23	BC857C
Transistor, PNP, 0.1A, 30V, SOT23	BC858B

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