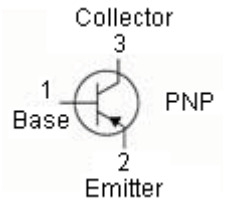
PNP Transistor

General Purpose

SOT-23



Features:

- Low current (maximum100 mA)
- Low voltage (maximum 65 V)

Applications:

- General purpose switching and amplification

Maximum Ratings and Characteristics : T_{amb} = 25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Collector - Base Voltage - BC856 - BC857 - BC858	V_{CBO}	-80 -50 -30	V
Collector - Emitter Voltage - BC856 - BC857 - BC858	V_{CEO}	-65 -45 -30	
Emitter - Base Voltage	V_{ebo}	-5	
Collector Current - Continuous	I_C	-0.1	A
Collector Dissipation	P_C	250	mW
Junction and Storage Temperature	T_j, T_{stg}	-65 to +150	°C

Parameter	Symbol	Test Conditions	Minimum	Typical	Maximum	Unit
Collector-Base Breakdown Voltage	$V_{(BR)\ CBO}$	I_C = -10 µA I_E=0 BC856 BC857 BC858	-80 -50 -30	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)\ CEO}$	I_C = -10 µA I_B=0 BC856 BC857 BC858	-65 -45 -30			
Emiter-Base Breakdown Voltage	$V_{(BR)\ EBO}$	I_E = -1 µA I_C = 0	-5	-	-	
Collector Cut-Off Current	I_{CBO}	V_{CB} = -30 V I_E = 0	-	-1	-15	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB} = -5 V, I_C = 0	-	-	-0.1	µA
DC Current Gain BC856, 857 BC856A, 857A, 858A BC856B, 857B, 858B BC857C, 858C	h_{FE}	V_{CE} = -5 V, I_C = -2 mA	125 125 220 420	-	475 250 475 800	-
Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C = -100 mA, I_B = -5 mA I_C = -10 mA, I_B = -0.5 mA	-	-	-0.65 -0.3	V

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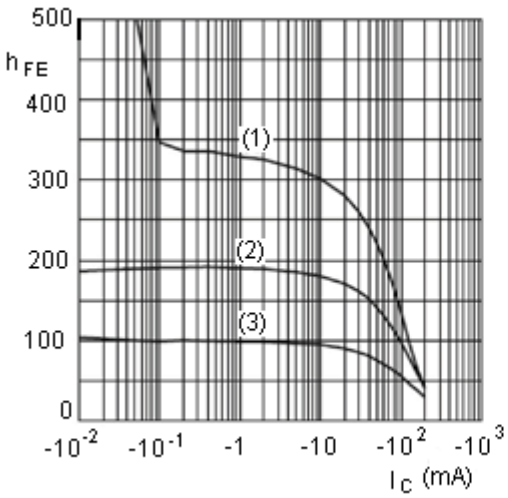
General Purpose

Parameter	Symbol	Test Conditions	Minimum	Typical	Maximum	Unit
Base - Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C = -10 mA, I_B = -0.5 mA I_C = -100 mA, I_B = -5 mA	-	-0.7 -0.85	-	V
Base Emitter Voltage	V_{BE}	I_C = -2 mA, V_{CE} = -5 V I_C = -10 mA, V_{CE} = -5 V	-0.6	-0.65	-0.75 -0.82	V
Collector Capacitance	C_C	V_{CB} = -10 V, I_E = I_e = 0 f = 1 MHz	-	4.5	-	pF
Transition Frequency	F	I_C = -200 µA, V_{CE} = -5 V, R_s=2 kΩ f = 1 KHz, B = 200 Hz	-	2	10	dB
Transition Frequency	f_T	V_{CE} = -10 I_C = -50, f = 20 MH	100	-	-	MHz

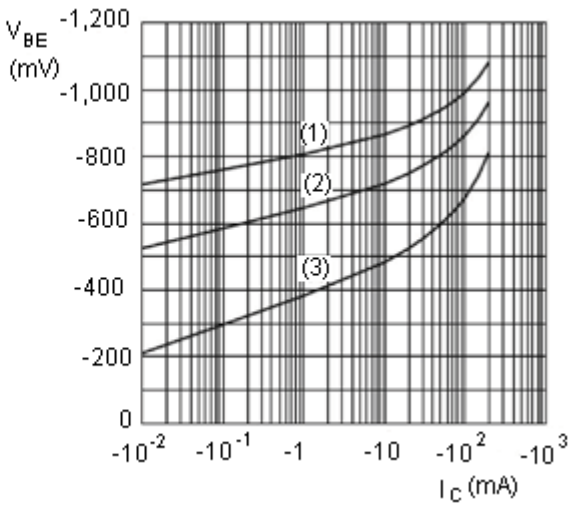
Maximum Ratings and Characteristics : T_{amb} = 25°C unless otherwise specified

Ratings and Characteristic Curves



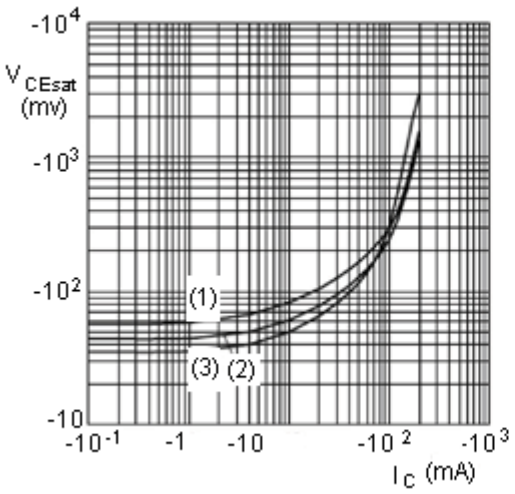
BC857A : V_{CE} = - 5 V
(1) T_{amb} = 150°C
(2) T_{amb} = 25°C
(3) T_{amb} = -55°C

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



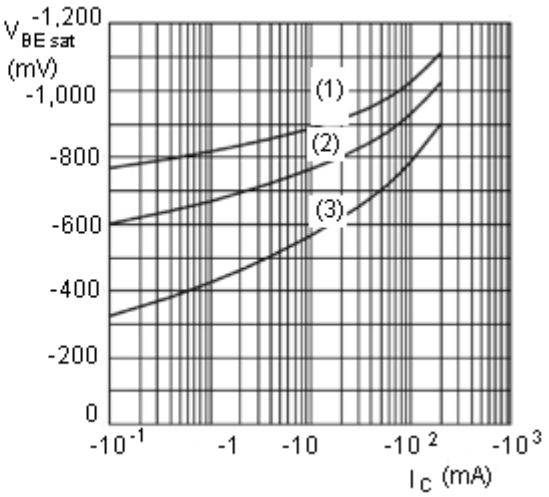
BC857A : V_{CE} = -5 V
(1) T_{amb} = -55°C
(2) T_{amb} = 25°C
(3) T_{amb} = 150°C

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



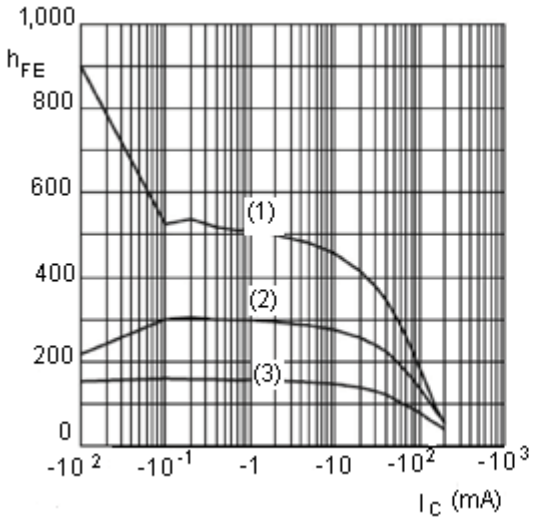
BC857A : $I_C / I_B = 20$
(1) T_{amb} = 150°C
(2) T_{amb} = 25°C
(3) T_{amb} = -55°C

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



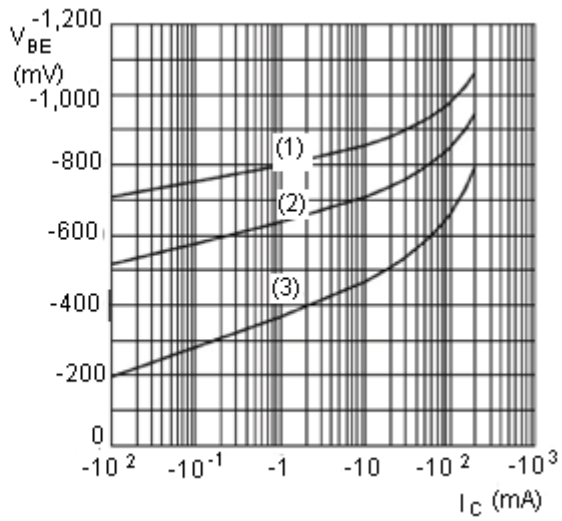
BC857A : $I_C / I_B = 20$
(1) T_{amb} = -55°C
(2) T_{amb} = 25°C
(3) T_{amb} = 150°C

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



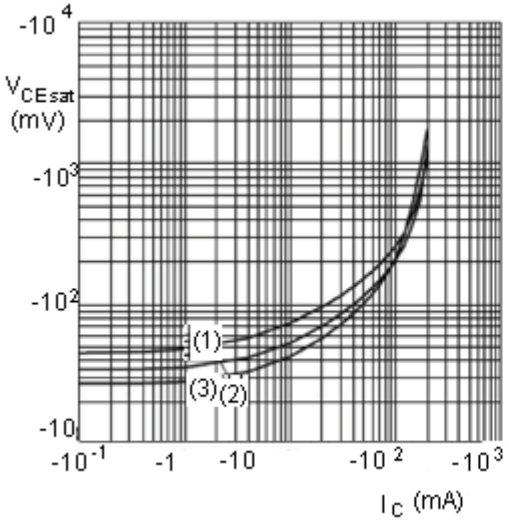
BC857B : V_{CE} = -5 V
(1) T_{amb} = 150°C
(2) T_{amb} = 25°C
(3) T_{amb} = -55°C

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



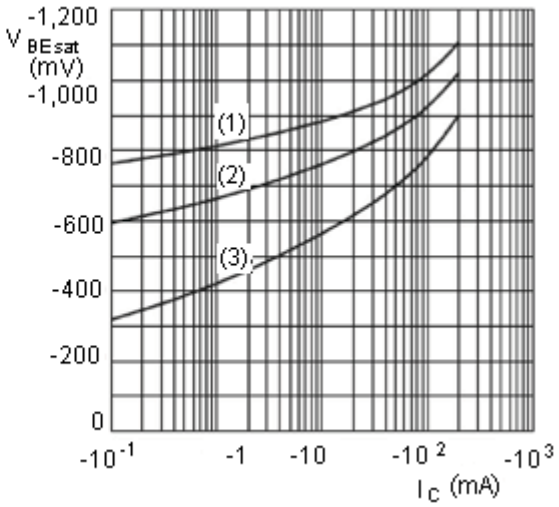
BC857B : V_{CE} = -5 V
(1) T_{amb} = -55°C
(2) T_{amb} = 25°C
(3) T_{amb} = 150°C

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



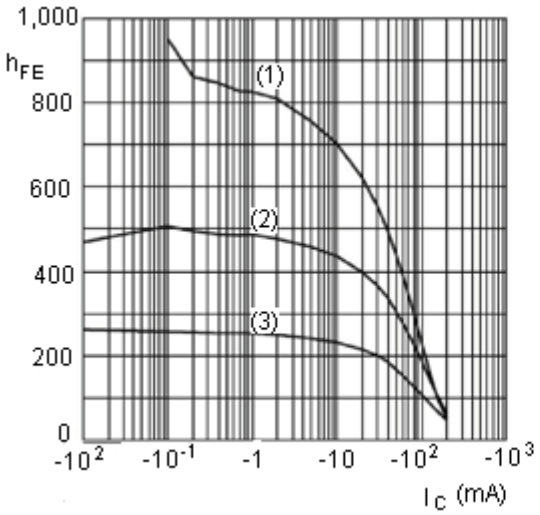
BC857B : $I_C / I_B = 20$
(1) $T_{amb} = 150°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = -55°C$

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



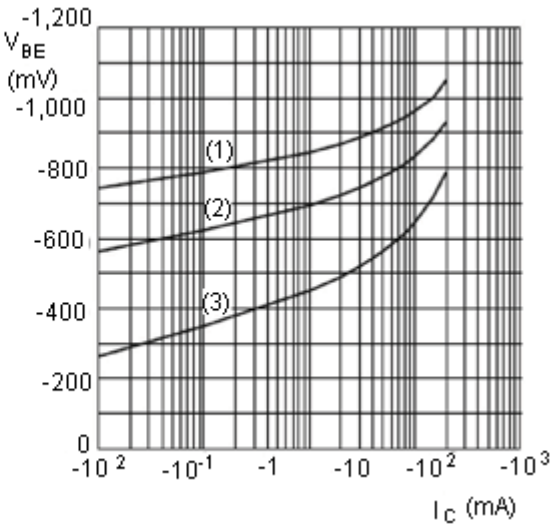
BC857B : $I_C / I_B = 20$
(1) $T_{amb} = -55°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = 150°C$

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



BC857C : $V_{CE} = -5$ V
(1) $T_{amb} = 150°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = -55°C$

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

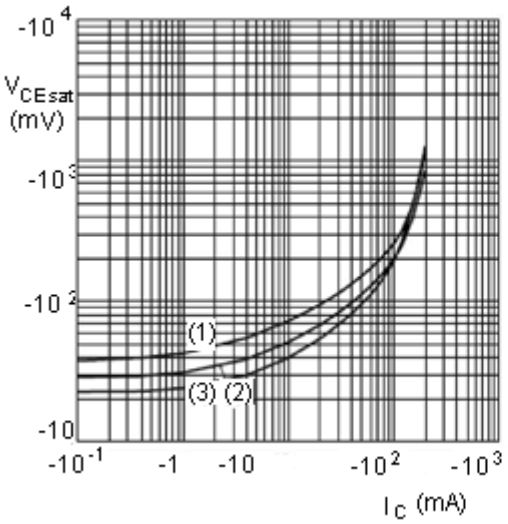


BC857C : $V_{CE} = -5$ V
(1) $T_{amb} = -55°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = 150°C$

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

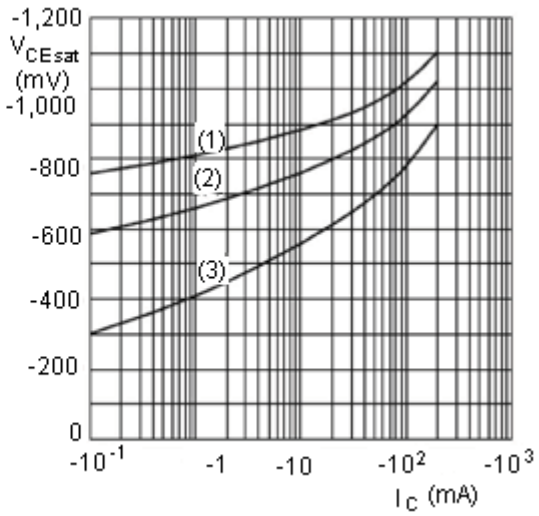
PNP Transistor

General Purpose



BC857C : $I_C / I_B = 20$
(1) $T_{amb} = 150°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = -55°C$

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

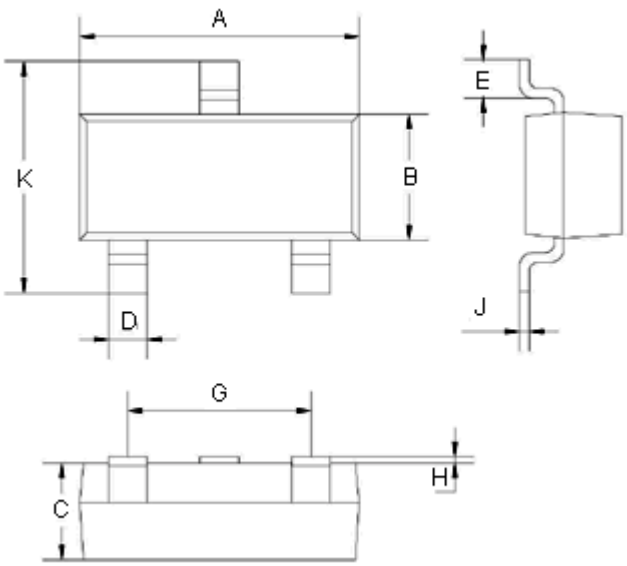


BC857C : $I_C / I_B = 20$
(1) $T_{amb} = -55°C$
(2) $T_{amb} = 25°C$
(3) $T_{amb} = 150°C$

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

Package Outline

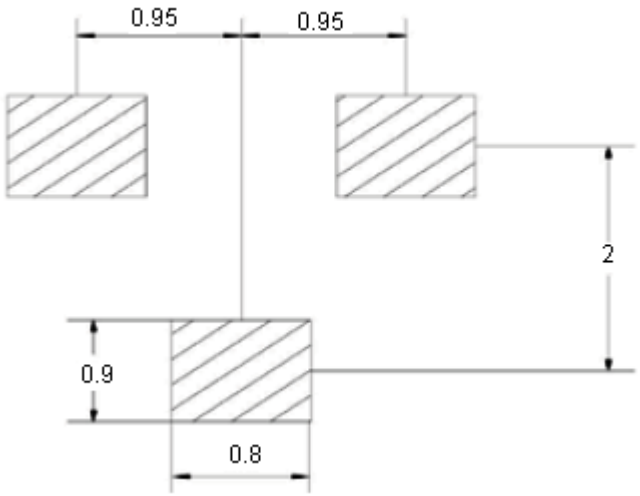
Plastic Surface Mounted Package



SOT-23		
Dimensions	**Minimum**	**Maximum**
A	2.85	2.95
B	1.25	1.35
C	1 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45

Dimensions : Millimetres

Soldering Footprint



Dimensions : Millimetres

Package Information

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

Part Number Table

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