

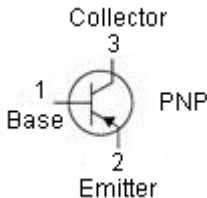
PNP Transistor



General Purpose



SOT-23



Features:

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

Applications:

- General purpose switching and amplification

Maximum Ratings and Characteristics : $T_{amb} = 25^{\circ}\text{C}$ 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	$^{\circ}\text{C}$

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



PNP Transistor

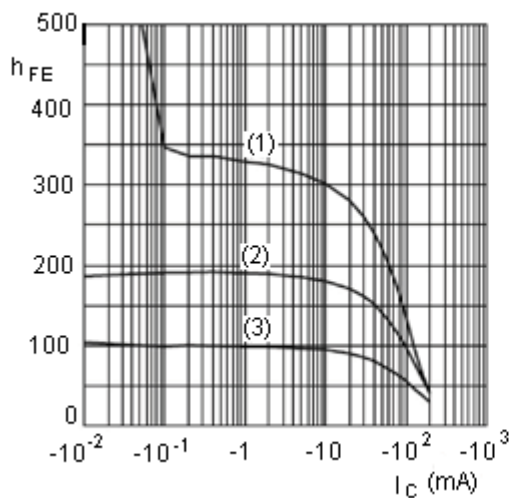
General Purpose



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

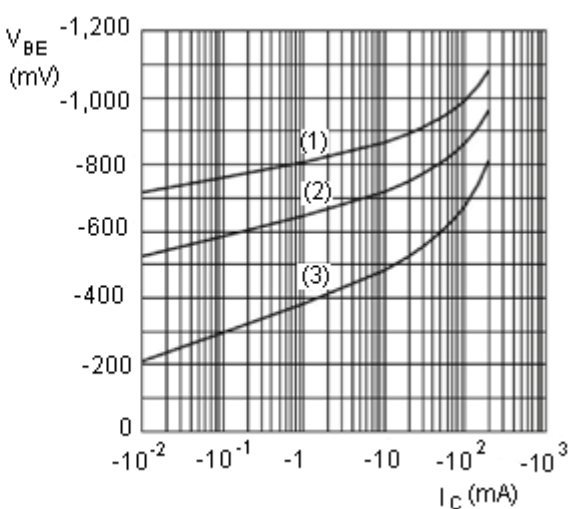
Maximum Ratings and Characteristics : $T_{amb} = 25^\circ\text{C}$ unless otherwise specified

Ratings and Characteristic Curves



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

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



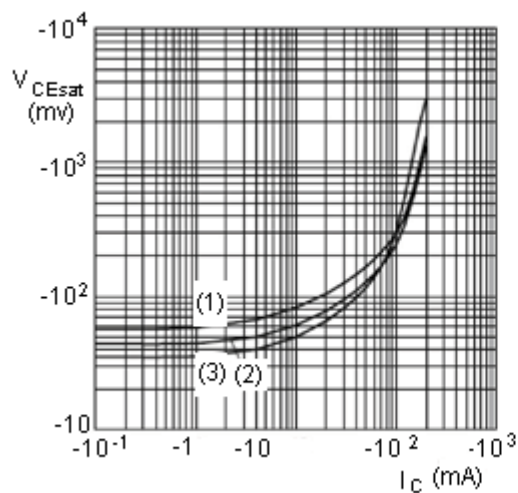
BC857A : $V_{CE} = -5\text{ V}$
 (1) $T_{amb} = -55^\circ\text{C}$
 (2) $T_{amb} = 25^\circ\text{C}$
 (3) $T_{amb} = 150^\circ\text{C}$

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



PNP Transistor

General Purpose



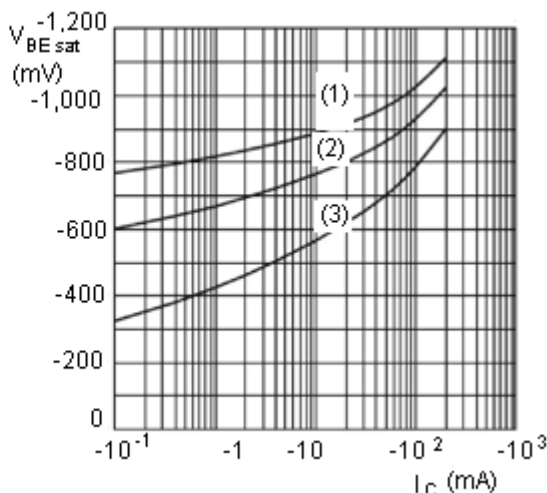
BC857A : $I_C / I_B = 20$

(1) $T_{amb} = 150^\circ\text{C}$

(2) $T_{amb} = 25^\circ\text{C}$

(3) $T_{amb} = -55^\circ\text{C}$

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



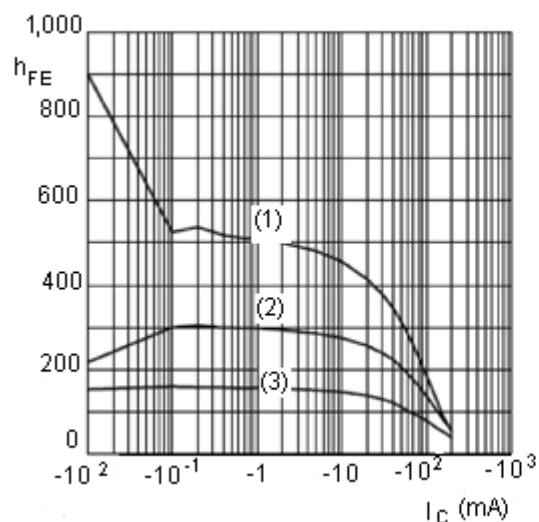
BC857A : $I_C / I_B = 20$

(1) $T_{amb} = -55^\circ\text{C}$

(2) $T_{amb} = 25^\circ\text{C}$

(3) $T_{amb} = 150^\circ\text{C}$

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



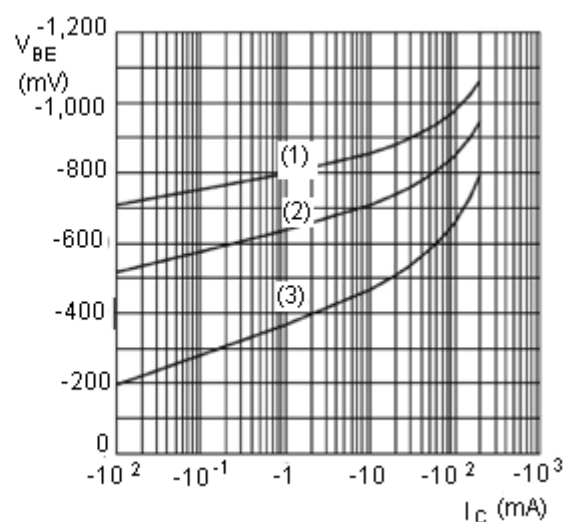
BC857B : $V_{CE} = -5\text{ V}$

(1) $T_{amb} = 150^\circ\text{C}$

(2) $T_{amb} = 25^\circ\text{C}$

(3) $T_{amb} = -55^\circ\text{C}$

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



BC857B : $V_{CE} = -5\text{ V}$

(1) $T_{amb} = -55^\circ\text{C}$

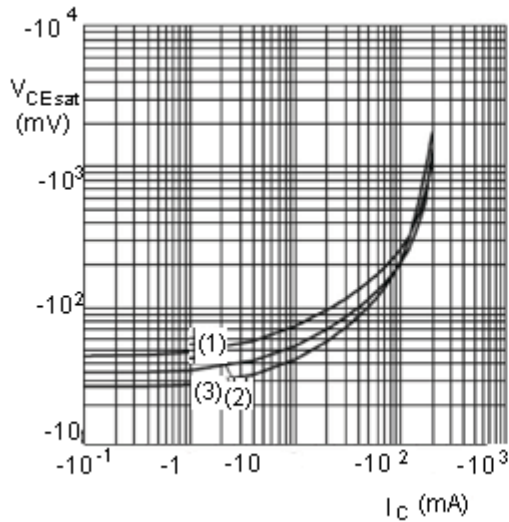
(2) $T_{amb} = 25^\circ\text{C}$

(3) $T_{amb} = 150^\circ\text{C}$

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

PNP Transistor

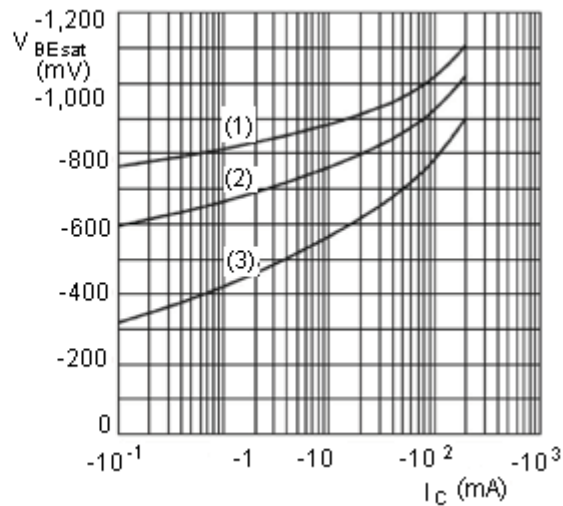
General Purpose



BC857B : $I_C / I_B = 20$

- (1) $T_{amb} = 150^{\circ}\text{C}$
- (2) $T_{amb} = 25^{\circ}\text{C}$
- (3) $T_{amb} = -55^{\circ}\text{C}$

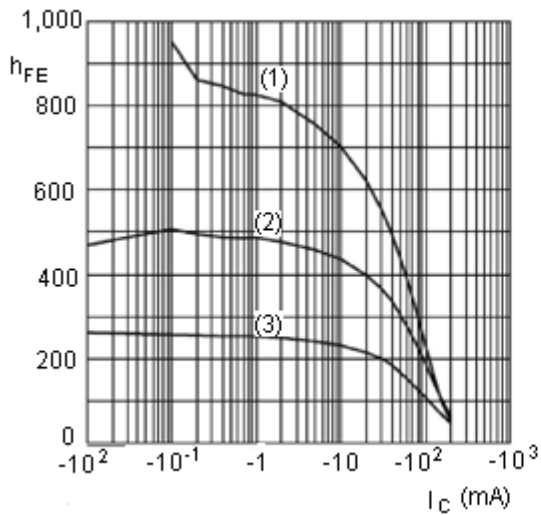
Collector-Emitter Saturation Voltage as a Function of Collector Current; Typical Values



BC857B : $I_C / I_B = 20$

- (1) $T_{amb} = -55^{\circ}\text{C}$
- (2) $T_{amb} = 25^{\circ}\text{C}$
- (3) $T_{amb} = 150^{\circ}\text{C}$

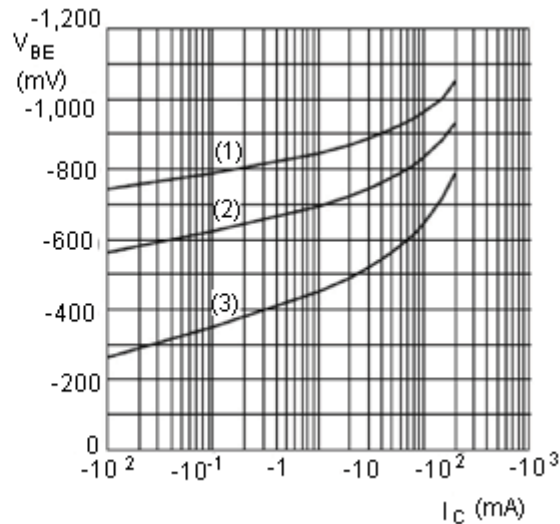
Base-Emitter Voltage as a Function of Collector Current; Typical Values



BC857C : $V_{CE} = -5\text{ V}$

- (1) $T_{amb} = 150^{\circ}\text{C}$
- (2) $T_{amb} = 25^{\circ}\text{C}$
- (3) $T_{amb} = -55^{\circ}\text{C}$

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



BC857C : $V_{CE} = -5\text{ V}$

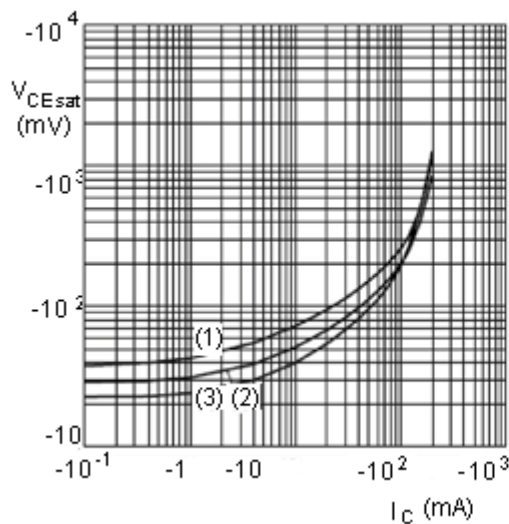
- (1) $T_{amb} = -55^{\circ}\text{C}$
- (2) $T_{amb} = 25^{\circ}\text{C}$
- (3) $T_{amb} = 150^{\circ}\text{C}$

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

PNP Transistor

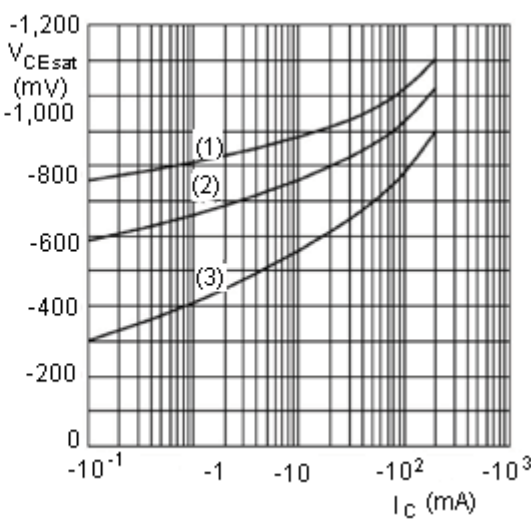


General Purpose



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

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

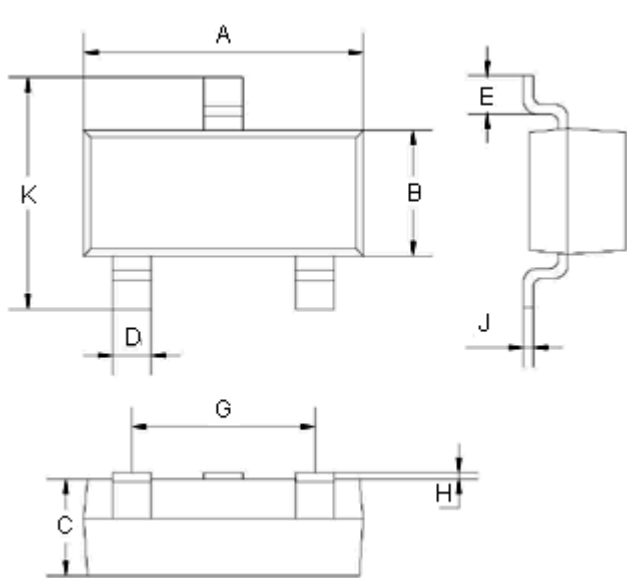


BC857C : $I_C / I_B = 20$
(1) $T_{amb} = -55^{\circ}\text{C}$
(2) $T_{amb} = 25^{\circ}\text{C}$
(3) $T_{amb} = 150^{\circ}\text{C}$

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

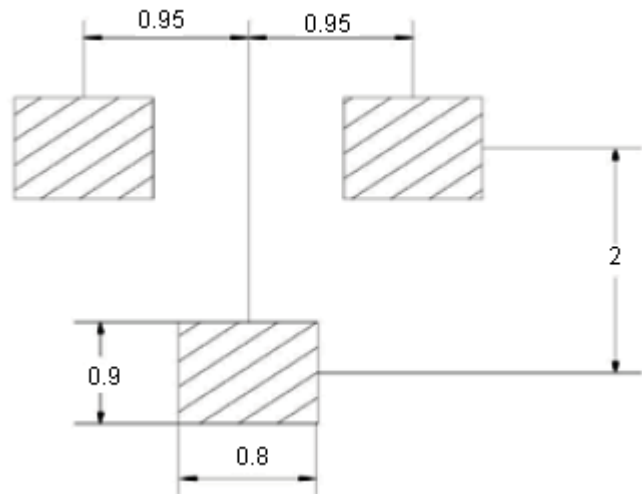


PNP Transistor



General Purpose

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

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.

