

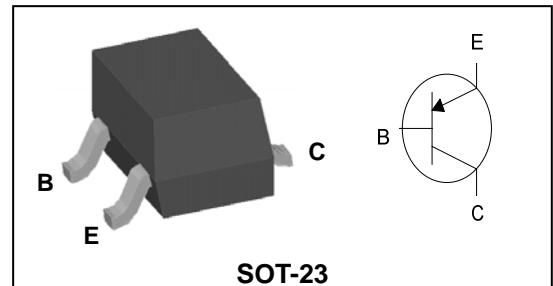
## Descriptions

- General purpose application
- Switching application

## Features

- High voltage :  $V_{CEO} = -45V$
- Complementary pair with BC847

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
BC857	$\overline{UA}$ $\square$ $\square$ ① ② ③	SOT-23

① Device Code ② hFE Rank ③ Year&Week Code

## Absolute maximum ratings

( $T_a = 25^\circ C$ )

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	-50	V
Collector-Emitter voltage	$V_{CEO}$	-45	V
Emitter-Base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-100	mA
Collector dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 ~ 150	$^\circ C$

## Electrical Characteristics

( $T_a = 25^\circ C$ )

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C = -2mA, I_B = 0$	-45	-	-	V
Base -Emitter turn on voltage	$V_{BE(ON)}$	$V_{CE} = -5V, I_C = -2mA$	-	-	-700	mV
Base -Emitter saturation voltage	$V_{BE(sat)}$	$I_C = -100mA, I_B = -5mA$	-	-900	-	mV
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -5mA$	-	-	-650	mV
Collector cut-off current	$I_{CBO}$	$V_{CB} = -35V, I_E = 0$	-	-	-15	nA
DC current gain	$h_{FE}^*$	$V_{CE} = -5V, I_C = -2mA$	110	-	800	-
Transition frequency	$f_T$	$V_{CB} = -5V, I_C = -10mA$	-	150	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	-	4.5	pF
Noise Figure	NF	$V_{CE} = -5V, I_C = -200\mu A, f = 1KHz, R_g = 2K\Omega$	-	-	10	dB

\* :  $h_{FE}$  rank / A : 110 ~ 220, B : 200 ~ 450, C : 420 ~ 800

Electrical Characteristic Curves

Fig. 1  $P_C$ - $T_a$

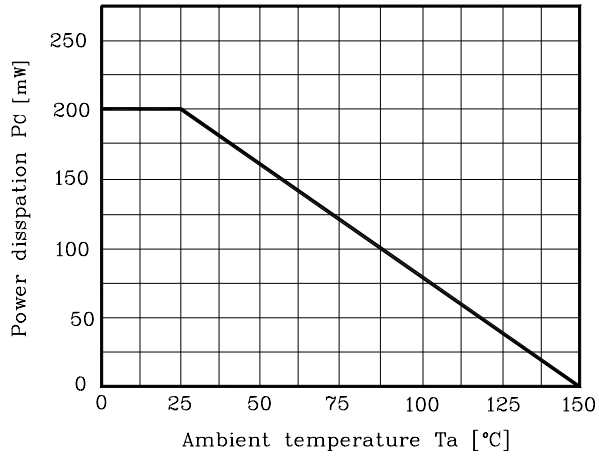


Fig. 2  $I_C$ - $V_{BE}$

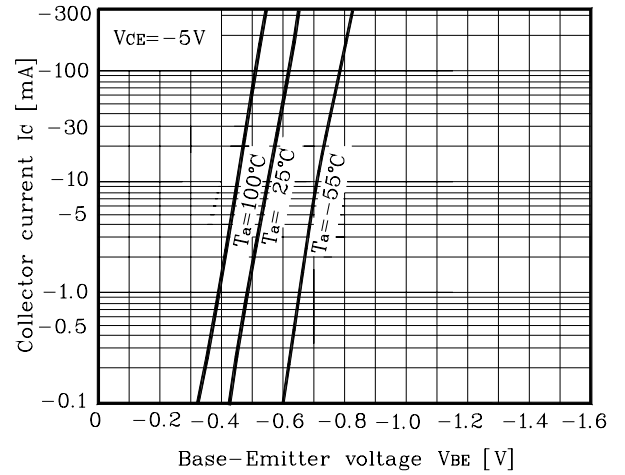


Fig. 3  $I_C$ - $V_{CE}$

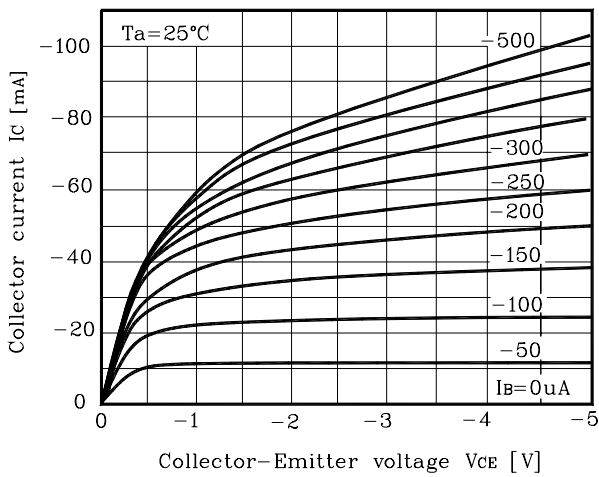


Fig. 4  $h_{FE}$ - $I_C$

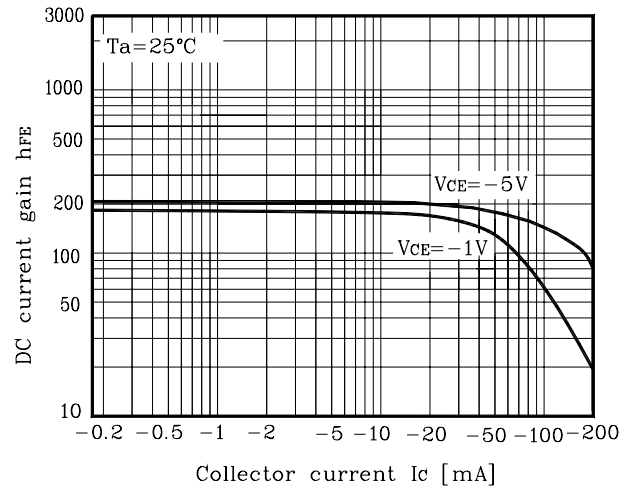
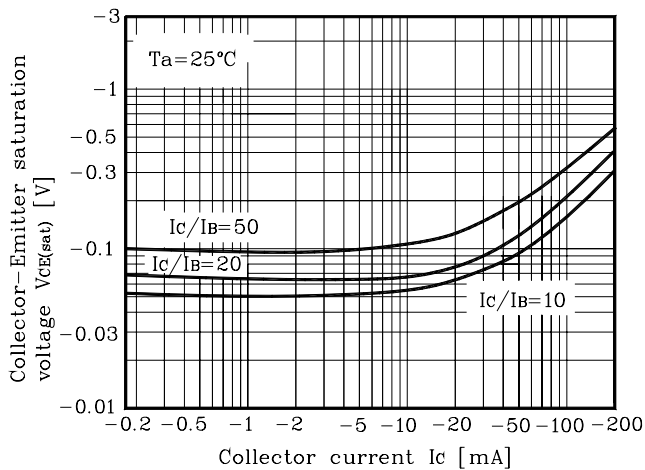
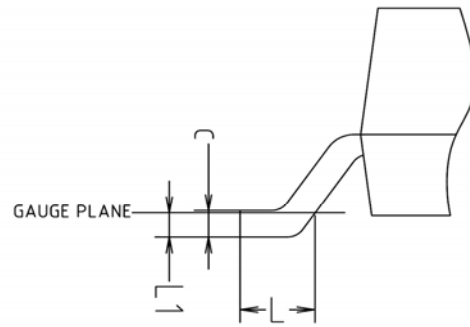
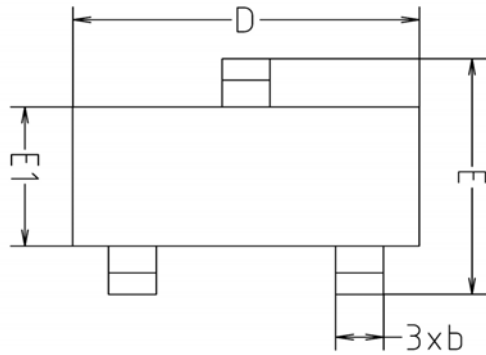


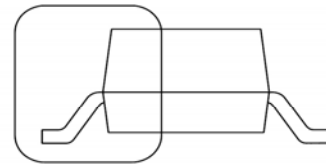
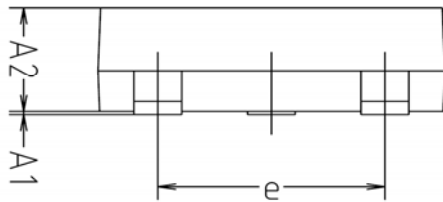
Fig. 5  $V_{CE(sat)}$ - $I_C$



Outline Dimension



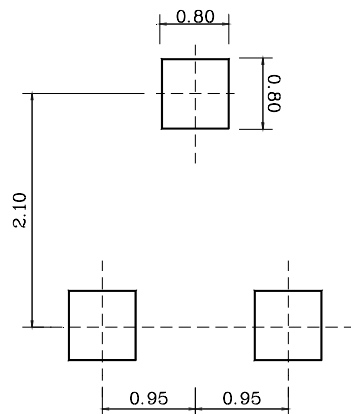
DETAIL 'A'



SEE DETAIL 'A'

SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

※Recommend PCB solder land [Unit: mm]



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