

## Descriptions

- General purpose application
- Switching application

## Features

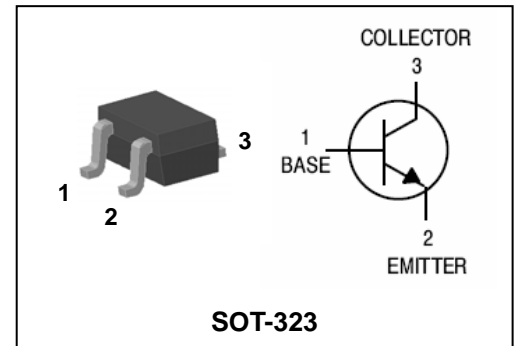
- High voltage :  $V_{CEO} = 45V$
- Complementary pair with BC857U

## Ordering Information

Type NO.	Marking	Package Code
BC847U	CS □ □ ① ② ③	SOT-323

①Device Code ②hFE Rank ③Year&Week Code

## PIN Connection



## 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	$BV_{CEO}$	$I_C = 1mA, I_B = 0$	45	-	-	V
Base-Emitter turn on voltage	$V_{BE(ON)}$	$V_{CE} = 5V, I_C = 2mA$	550	-	700	mV
Base-Emitter saturation voltage	$V_{BE(sat)}$	$I_C = 100mA, I_B = 5mA$	-	900	-	mV
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 5mA$	-	-	600	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	$f_T$	$V_{CE} = 5V, I_C = 10mA$ $f = 100MHz$	-	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  $P_C - T_a$

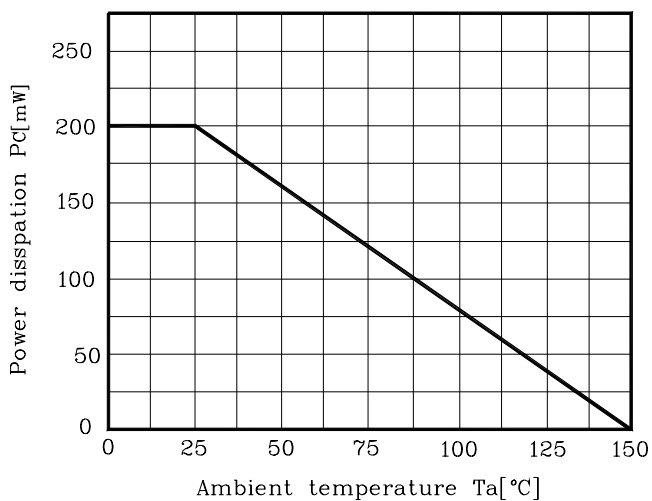


Fig. 2  $I_C - V_{BE}$

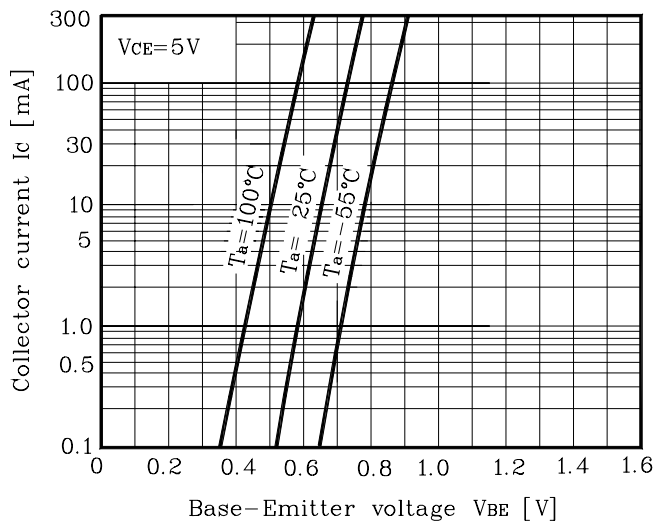


Fig. 3  $I_C - V_{CE}$

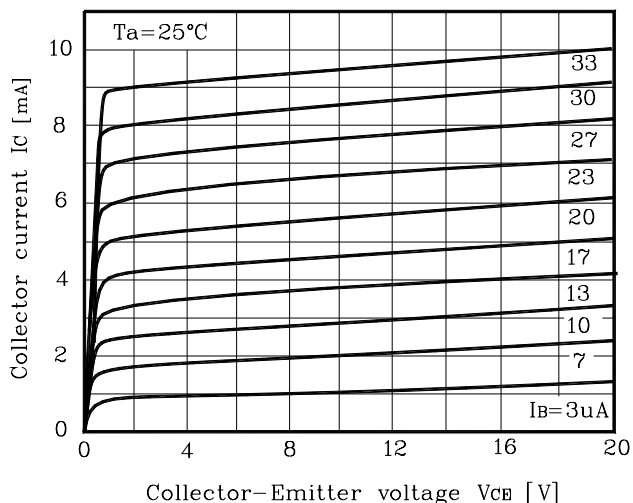


Fig. 4  $h_{FE} - I_C$

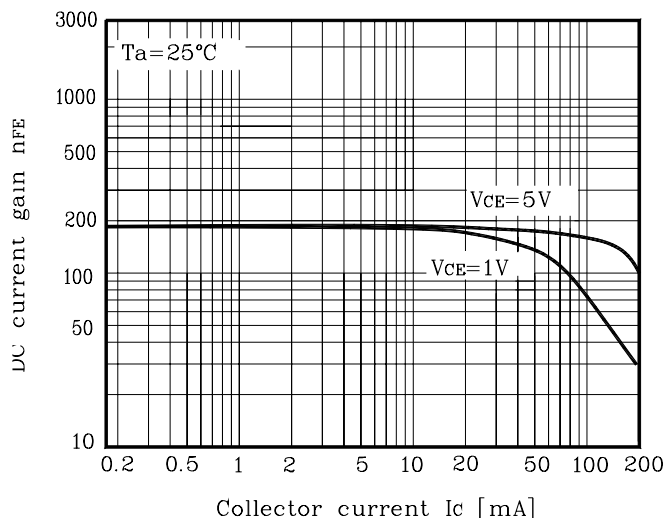
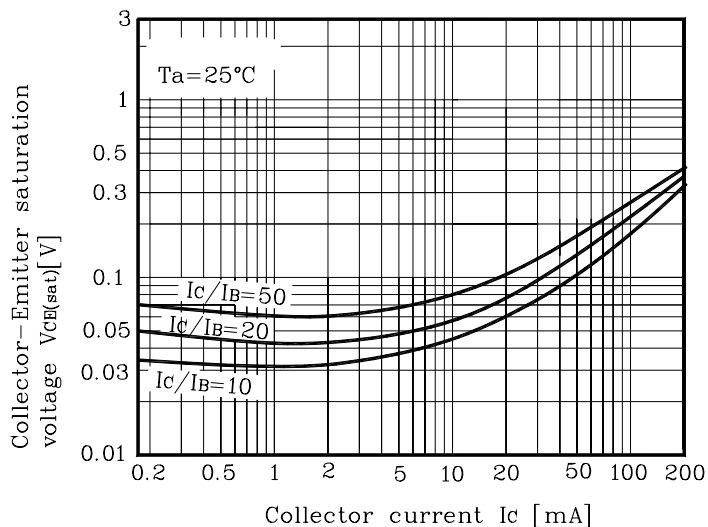
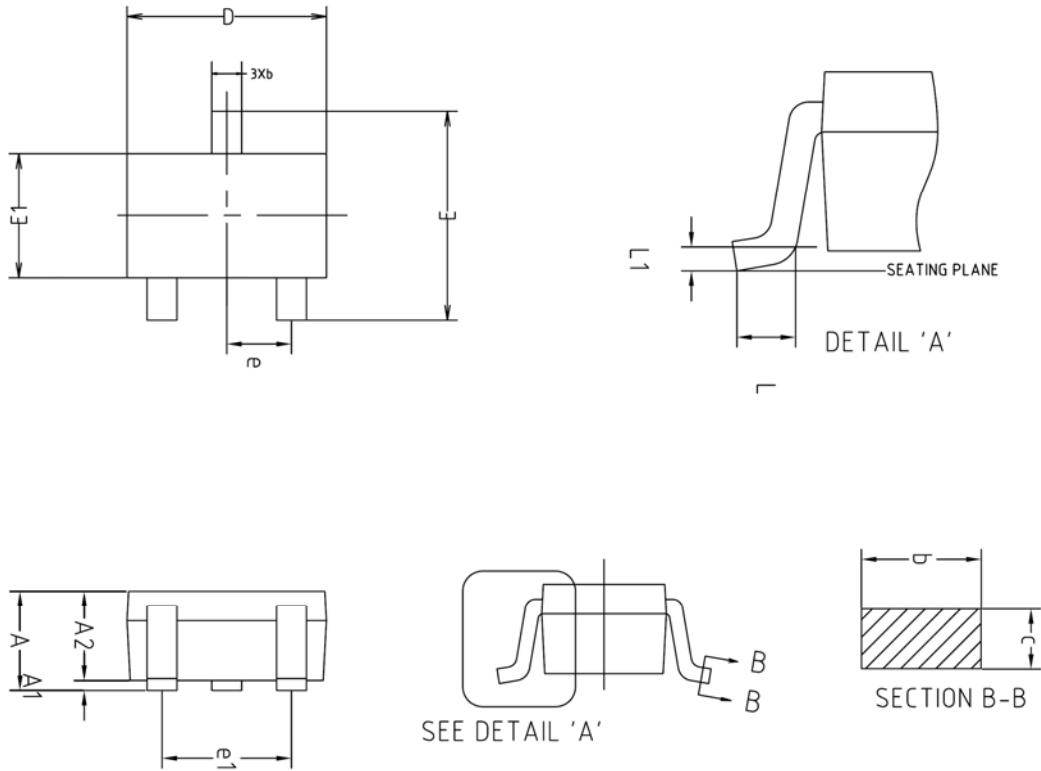


Fig. 5  $V_{CE(sat)} - I_C$

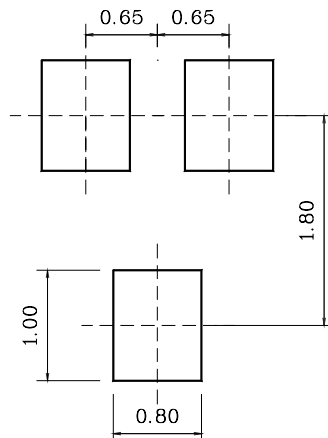


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.90	-	1.25	
A1	0.00	-	0.10	
A2	0.85	0.90	0.95	
b	0.30	-	0.40	
c	0.10	-	0.25	
D	1.90	2.00	2.10	
E	1.95	2.10	2.25	
E1	1.15	1.25	1.35	
e	0.65BSC			
e1	1.20	-	1.40	
L	0.10	-	-	
L1	0.12BSC			

※Recommend PCB solder land [Unit: mm]



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