

Descriptions

- General purpose application
- Switching application

Features

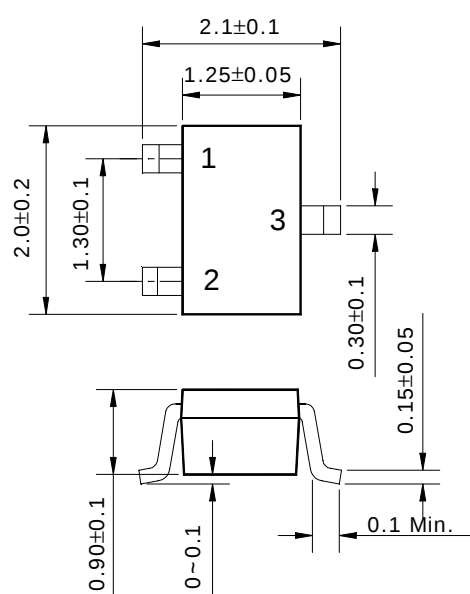
- High voltage : $V_{CEO} = -45V$
- Complementary pair with BC847U

Ordering Information

Type NO.	Marking	Package Code
BC857U	BV	SOT-323
: h_{FE} rank		

Outline Dimensions

unit : mm



PIN Connections

1. Base
2. Emitter
3. Collector

Absolute maximum ratings

(Ta=25°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	°C
Storage temperature	T_{stg}	-55 ~ 150	°C

Electrical Characteristics

(Ta=25°C)

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

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

Electrical Characteristic Curves

Fig. 1 P_C - T_a

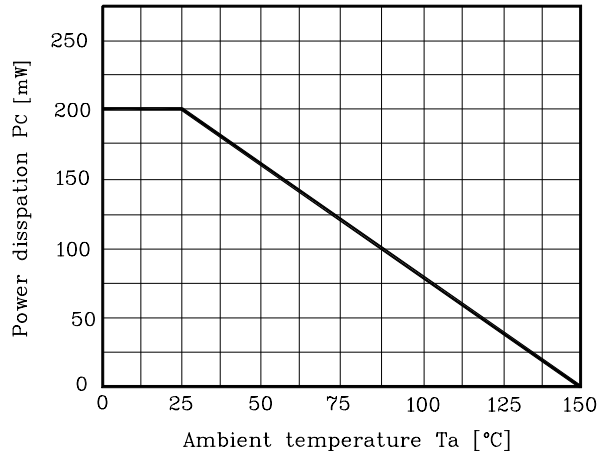


Fig. 2 I_C - V_{BE}

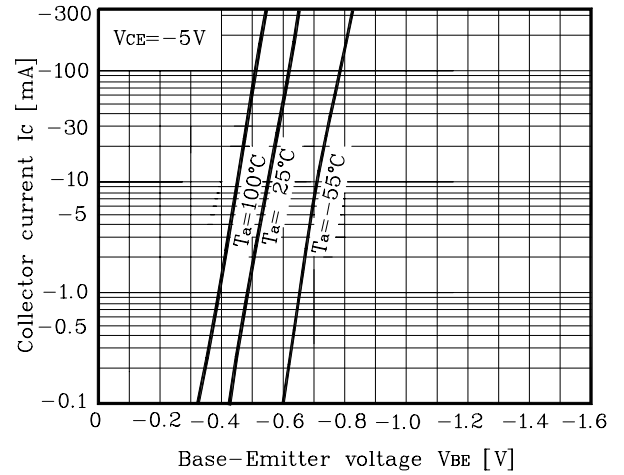


Fig. 3 I_C - V_{CE}

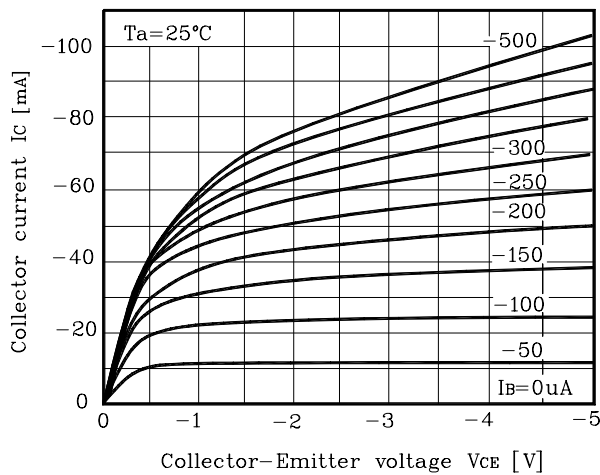


Fig. 4 h_{FE} - I_C

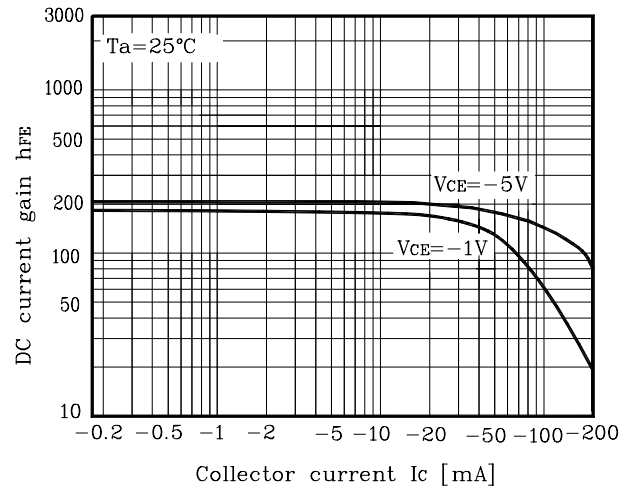


Fig. 5 $V_{CE(sat)}$ - I_C

