

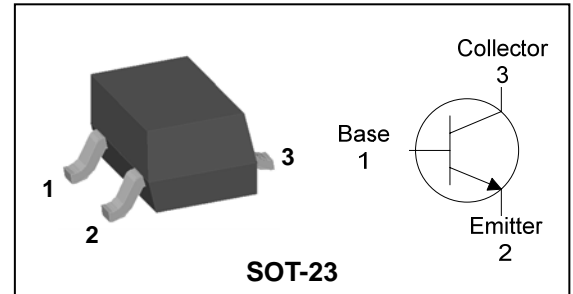
## Descriptions

- General purpose application
- Switching application

## Features

- High voltage :  $V_{CEO}=55V$
- Complementary pair with BC856

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
BC846	<div style="display: flex; align-items: center; gap: 5px;"> <span style="border: 1px solid black; padding: 2px;">QA</span> <span style="border: 1px solid black; padding: 2px;">□</span> <span style="border: 1px solid black; padding: 2px;">□</span> </div> <div style="display: flex; align-items: center; gap: 5px; font-size: small;"> <span>①</span> <span>②</span> <span>③</span> </div>	SOT-23

① Device Code ② hFE Rank ③ Year&Week Code

## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	80	V
Collector-Emitter voltage	$V_{CEO}$	55	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	$BV_{CEO}$	$I_C=1mA, I_B=0$	55	-	-	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	$f_T$	$V_{CE}=5V, I_C=10mA$	-	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  $P_C - T_a$

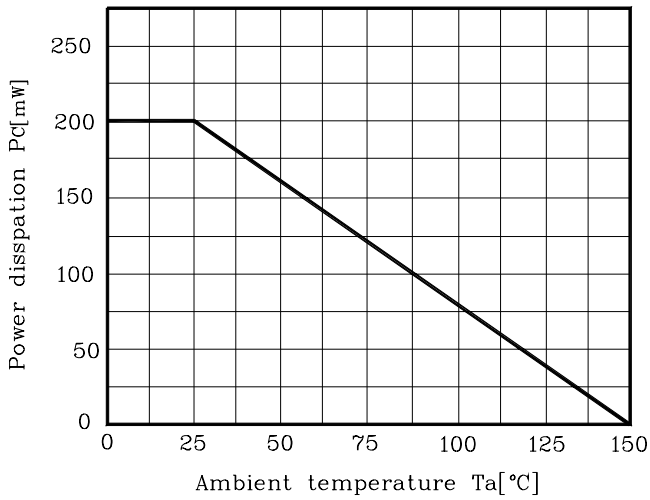


Fig. 2  $I_C - V_{BE}$

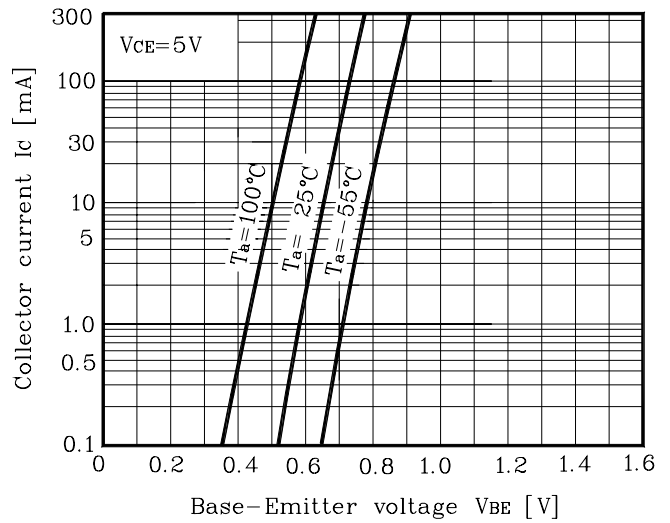


Fig. 3  $I_C - V_{CE}$

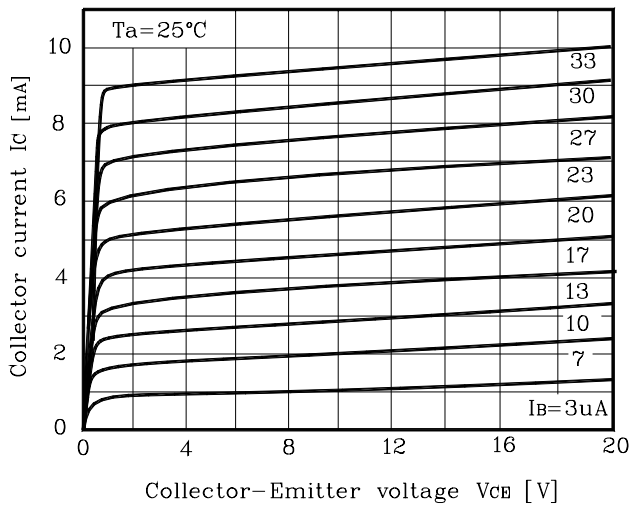


Fig. 4  $h_{FE} - I_C$

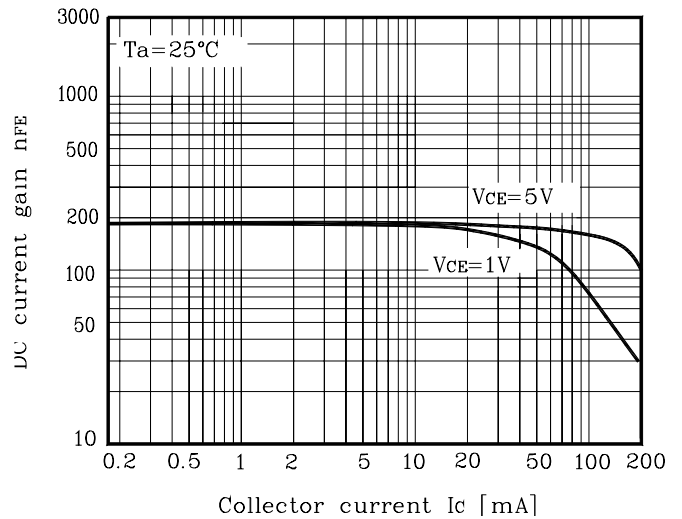
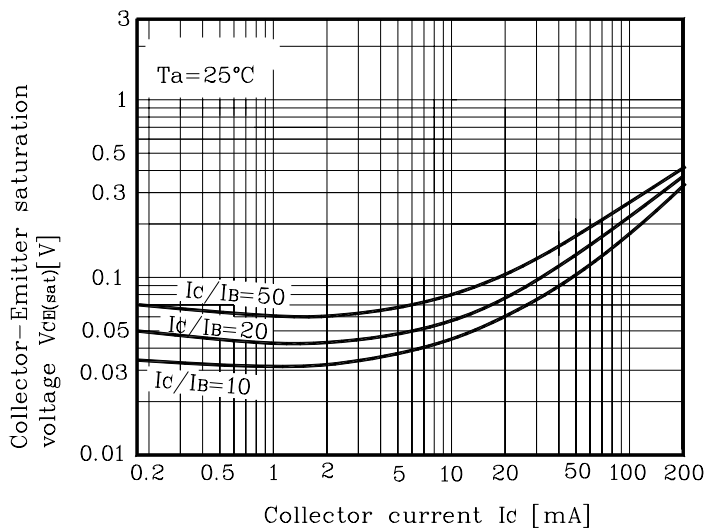
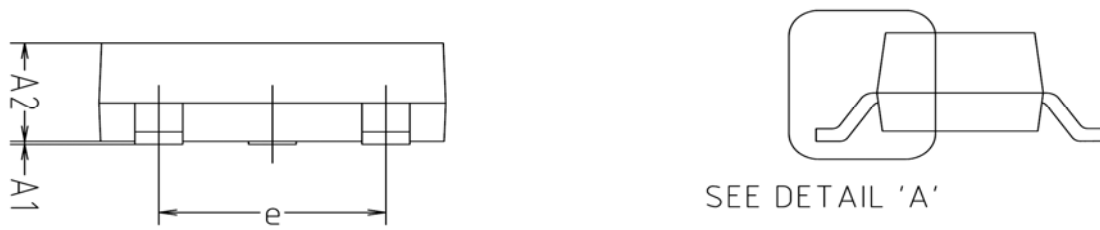
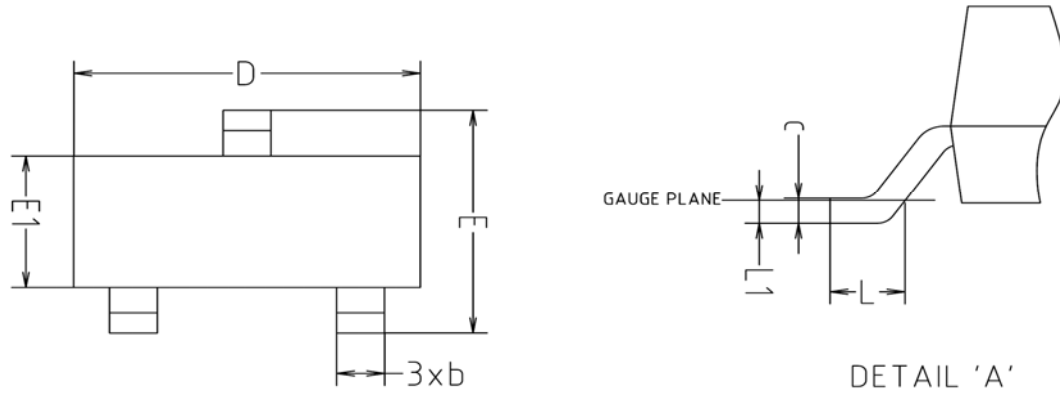


Fig. 5  $V_{CE(sat)} - I_C$

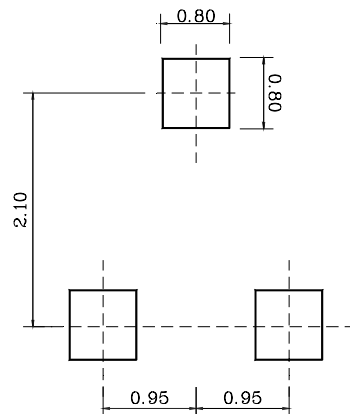


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
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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