

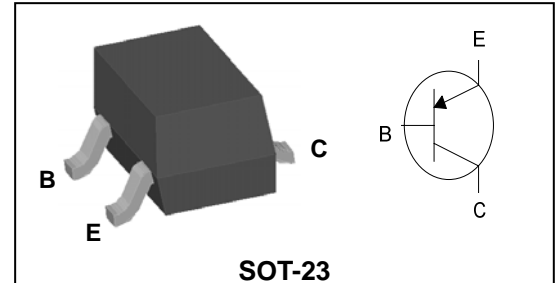
## Description

- General purpose amplifier
- High voltage application

## Features

- High collector breakdown voltage :  
 $V_{CB0} = -160V$ ,  $V_{CEO} = -160V$
- Low collector saturation voltage :  
 $V_{CE(sat)} = -0.5V(MAX.)$
- Complementary pair with SBT5551

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
SBT5401	NFN □ ① ②	SOT-23

① Device Code ② Year&Week Code

## Absolute maximum ratings

( $T_a = 25^\circ C$ )

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CB0}$	-160	V
Collector-Emitter voltage	$V_{CEO}$	-160	V
Emitter-Base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-600	mA
Collector dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 ~ 150	$^\circ C$

## Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C = -100\mu A, I_E = 0$	-160	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C = -1mA, I_B = 0$	-160	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E = -10\mu A, I_C = 0$	-5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -120V, I_E = 0$	-	-	-100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -3V, I_C = 0$	-	-	-100	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -5V, I_C = -1mA$	50	-	-	-
DC current gain	$h_{FE(2)}$	$V_{CE} = -5V, I_C = -10mA$	60	-	240	-
DC current gain	$h_{FE(3)}$	$V_{CE} = -5V, I_C = -50mA$	50	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)(1)}^*$	$I_C = -10mA, I_B = -1mA$	-	-	-0.2	V
Collector-Emitter saturation voltage	$V_{CE(sat)(2)}^*$	$I_C = -50mA, I_B = -5mA$	-	-	-0.5	V
Base-Emitter saturation voltage	$V_{BE(sat)(1)}^*$	$I_C = -10mA, I_B = -1mA$	-	-	-1	V
Base-Emitter saturation voltage	$V_{BE(sat)(2)}^*$	$I_C = -50mA, I_B = -5mA$	-	-	-1	V
Transition frequency	$f_T$	$V_{CE} = -10V, I_C = -10mA$	100	-	400	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	-	6	pF

\* : Pulse Tester : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

Electrical Characteristic Curves

Fig. 1  $h_{FE} - I_C$

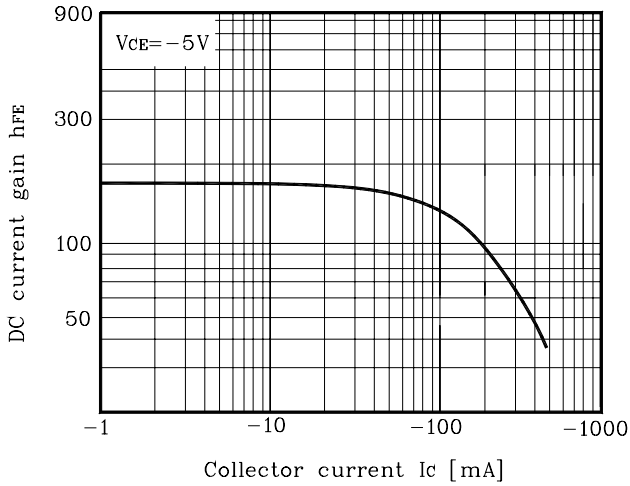


Fig. 2  $I_C - V_{BE}$

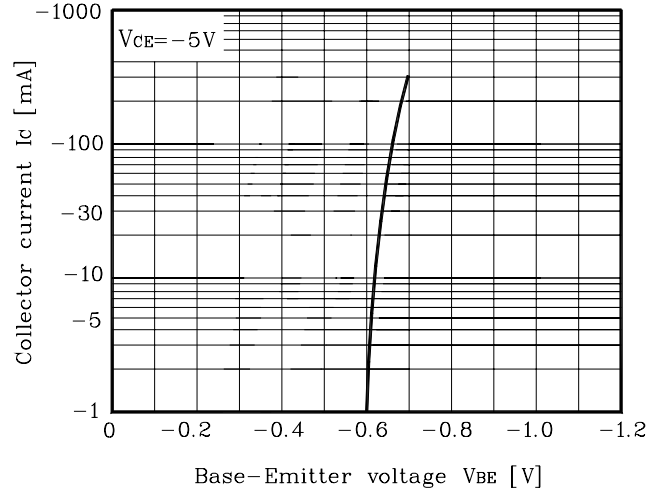


Fig. 3  $f_T - I_C$

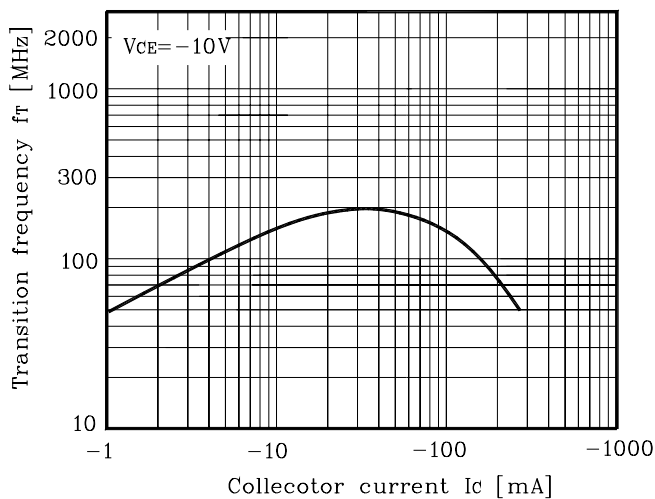


Fig. 4  $V_{CE(sat)}, V_{BE(sat)} - I_C$

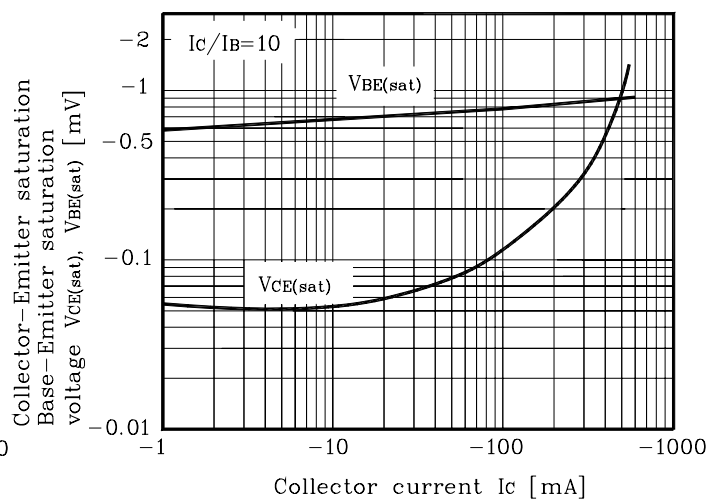
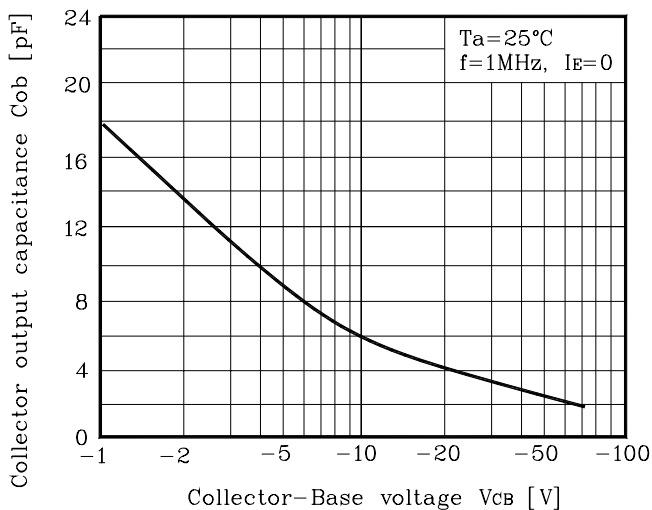
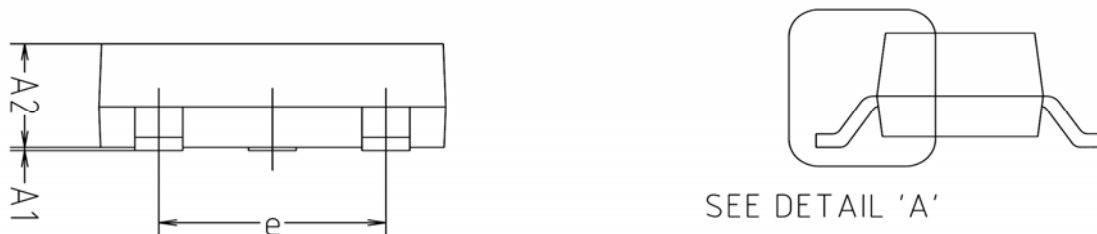
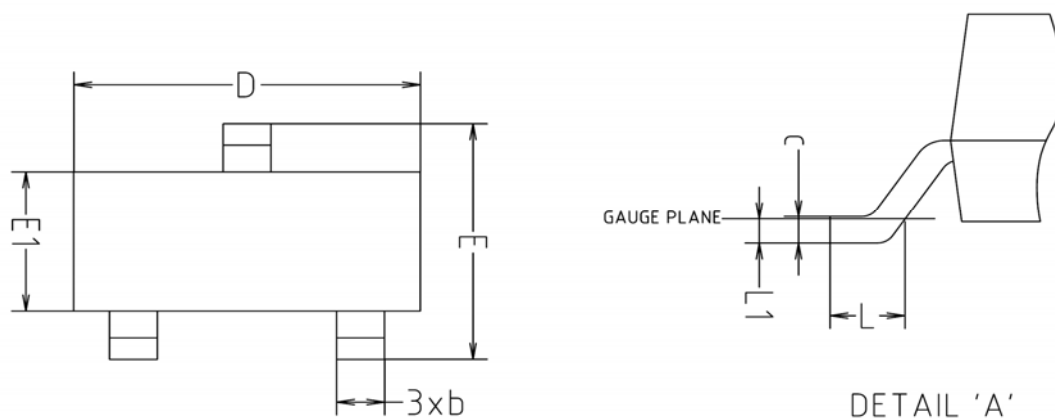


Fig. 5  $C_{ob} - V_{CB}$

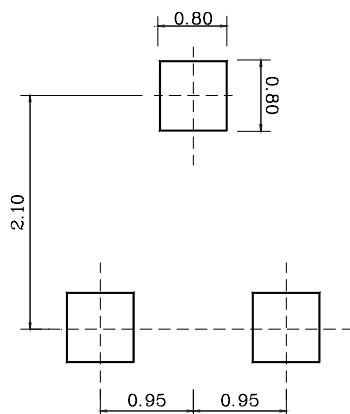


Outline Dimension



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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