

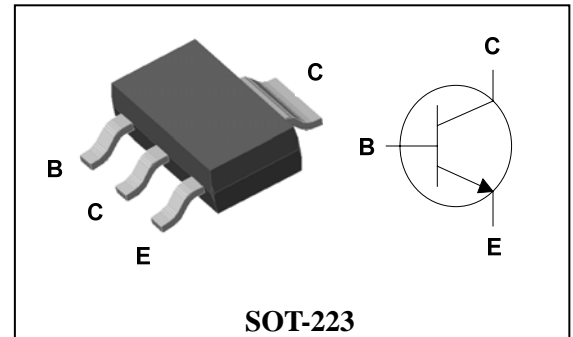
## Descriptions

- General purpose amplifier
- High voltage application

## Features

- High collector breakdown voltage  
:  $V_{CEO} = 160V$
- Low collector saturation voltage  
:  $V_{CE(sat)} = 0.5V(MAX.)$

## PIN Connection



## Ordering Information

Type No.	Marking	Package Code
STC2073Q	STC2073□	SOT-223

□ : Year & Week Code

## Absolute maximum ratings

( $T_a = 25^\circ C$ )

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	160	V
Collector-Emitter voltage	$V_{CEO}$	160	V
Emitter-Base voltage	$V_{EBO}$	6	V
Collector current	$I_C$	1	A(DC)
	$I_{CP}^*$	2	A(Pulse)
Collector power dissipation	$P_C$	1.1	W
	$P_C^{**}$	1.5	
Junction temperature	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55~150	$^\circ C$

\* : Single pulse,  $t_p = 300 \mu s$

\*\* : When mounted on ceramic substrate( $250 \text{ mm}^2 \times 0.8t$ )

## 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	$BV_{EBO}$	$I_E=100\mu A, I_C=0$	6	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=160V, I_E=0$	-	-	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$	-	-	0.1	$\mu A$
DC current gain	$h_{FE}^{1)}$	$V_{CE}=5V, I_C=30mA$	200	-	400	-
Collector-Emitter saturation voltage	$V_{CE(sat)}^{2)}$	$I_C=500mA, I_B=50mA$	-	-	0.5	V
Base-Emitter saturation voltage	$V_{BE(sat)}^{2)}$	$I_C=500mA, I_B=50mA$	-	-	1.2	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=50mA$	-	150	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	10	-	pF

\* Note 1) hFE Rank : 200~400 only

\* Note 2) Pulse Tester : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

## Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

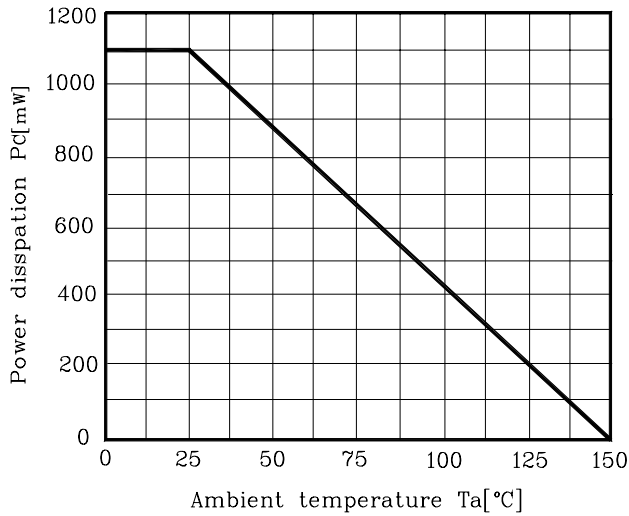


Fig. 2  $I_C - V_{BE}$

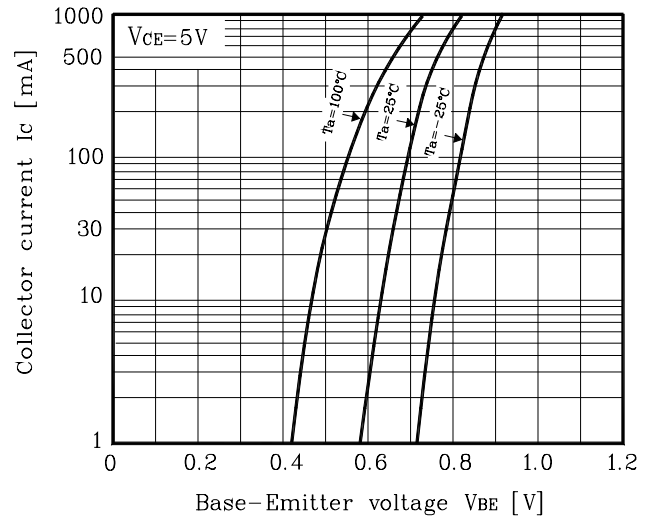


Fig. 3  $V_{CE(sat)} - I_C$

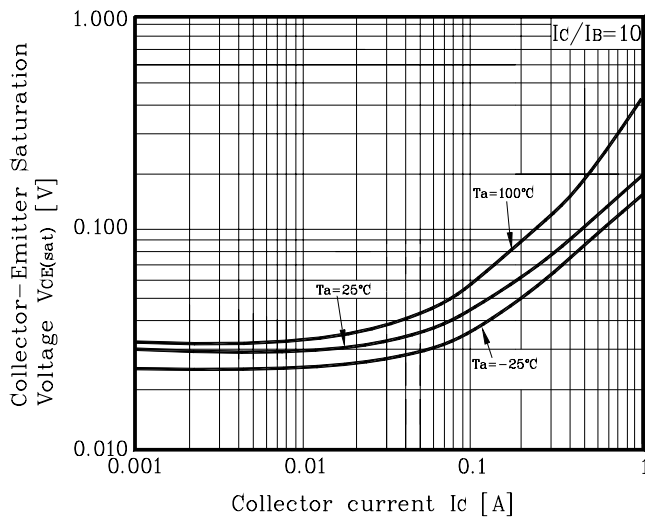


Fig. 4  $I_C - V_{CE}$

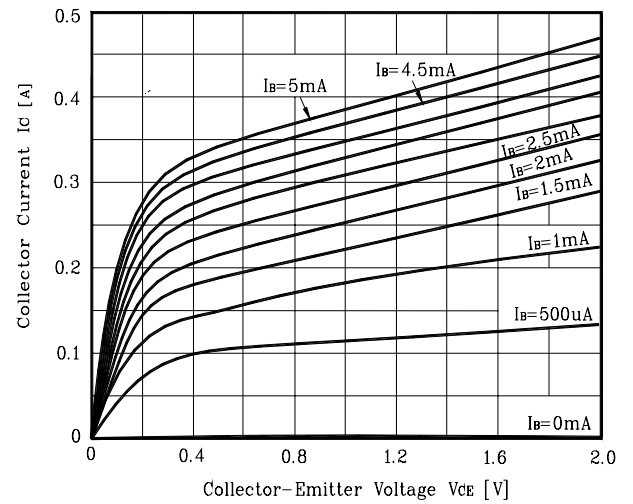


Fig. 5  $I_C - V_{CE}$

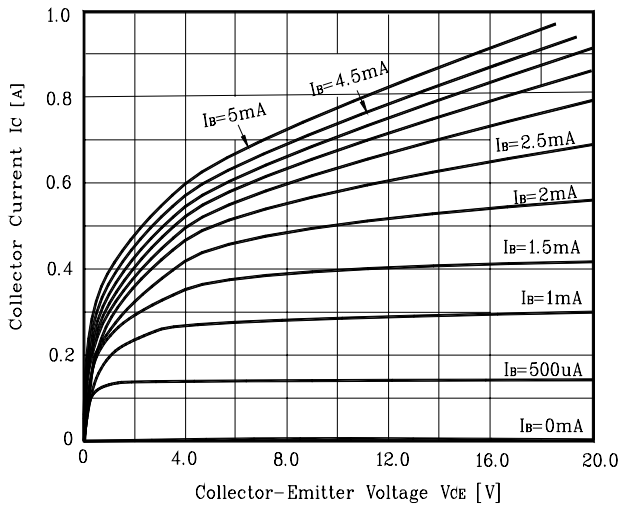
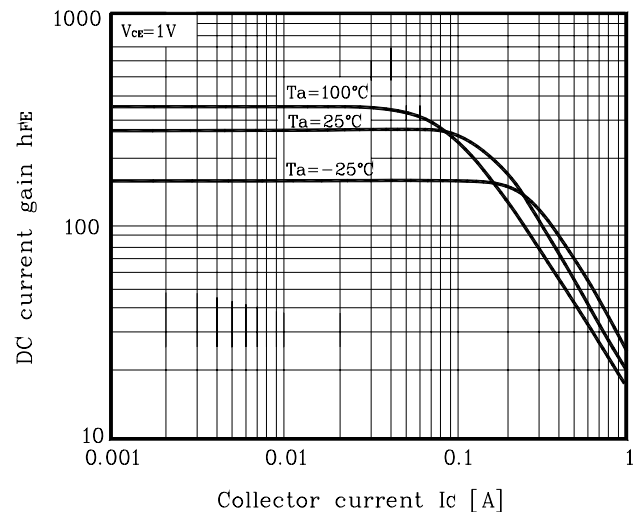
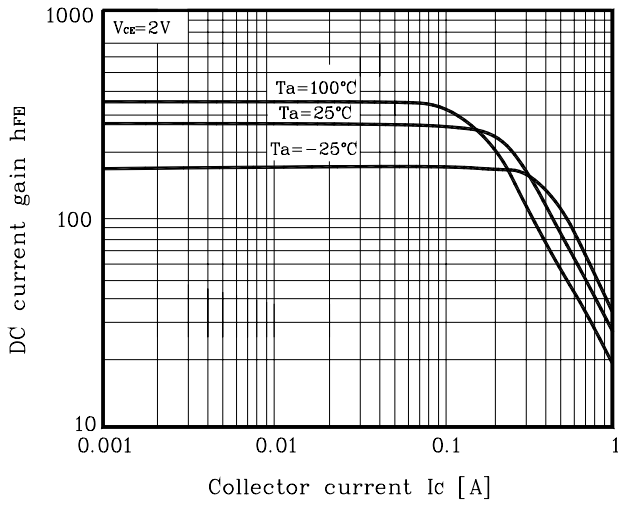


Fig. 6  $h_{FE} - I_C$

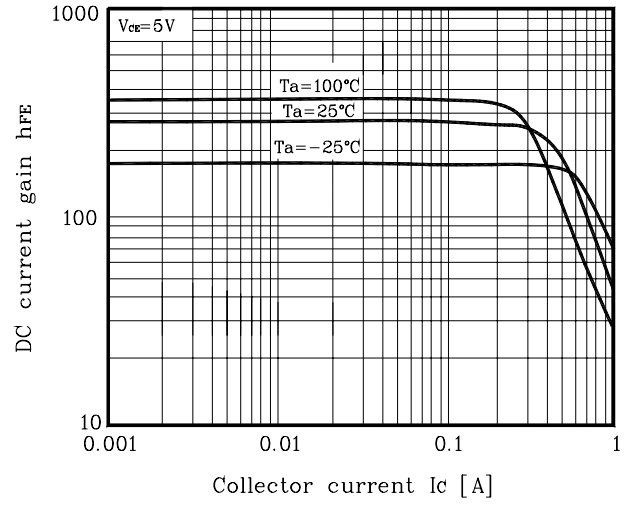


## Electrical Characteristic Curves

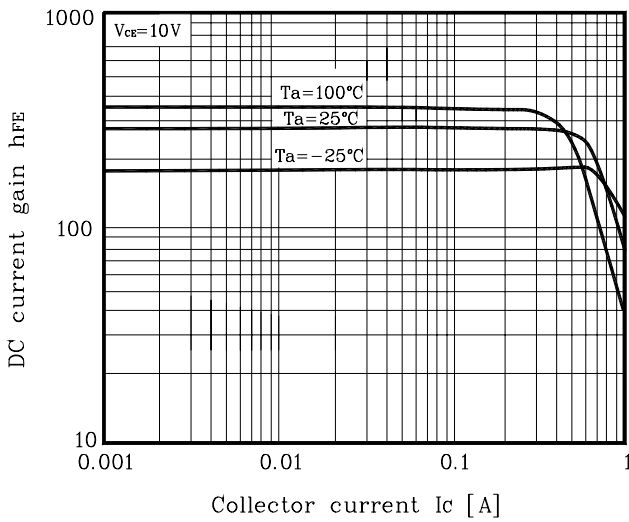
**Fig. 7  $h_{FE}-I_C$**



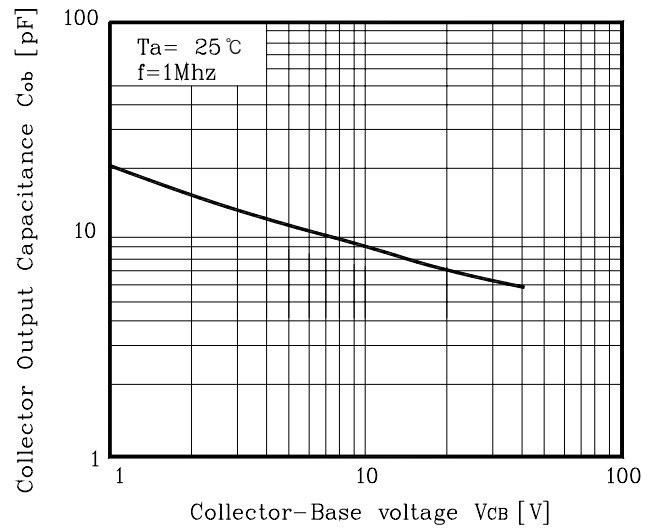
**Fig. 8  $h_{FE}-I_C$**



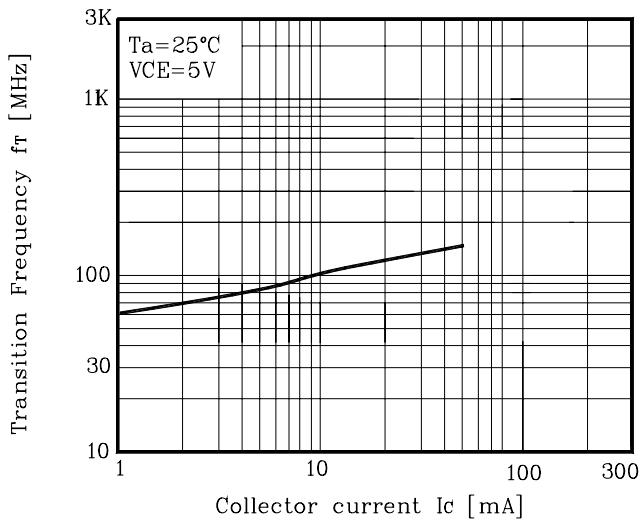
**Fig. 9  $h_{FE}-I_C$**



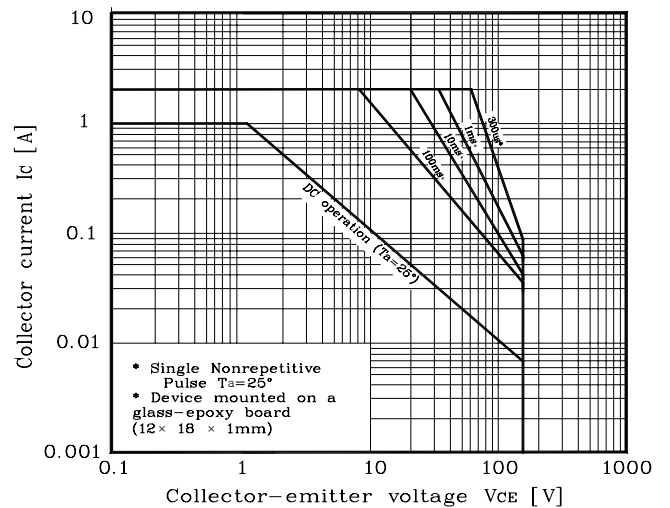
**Fig. 10  $C_{ob} - V_{CB}$**



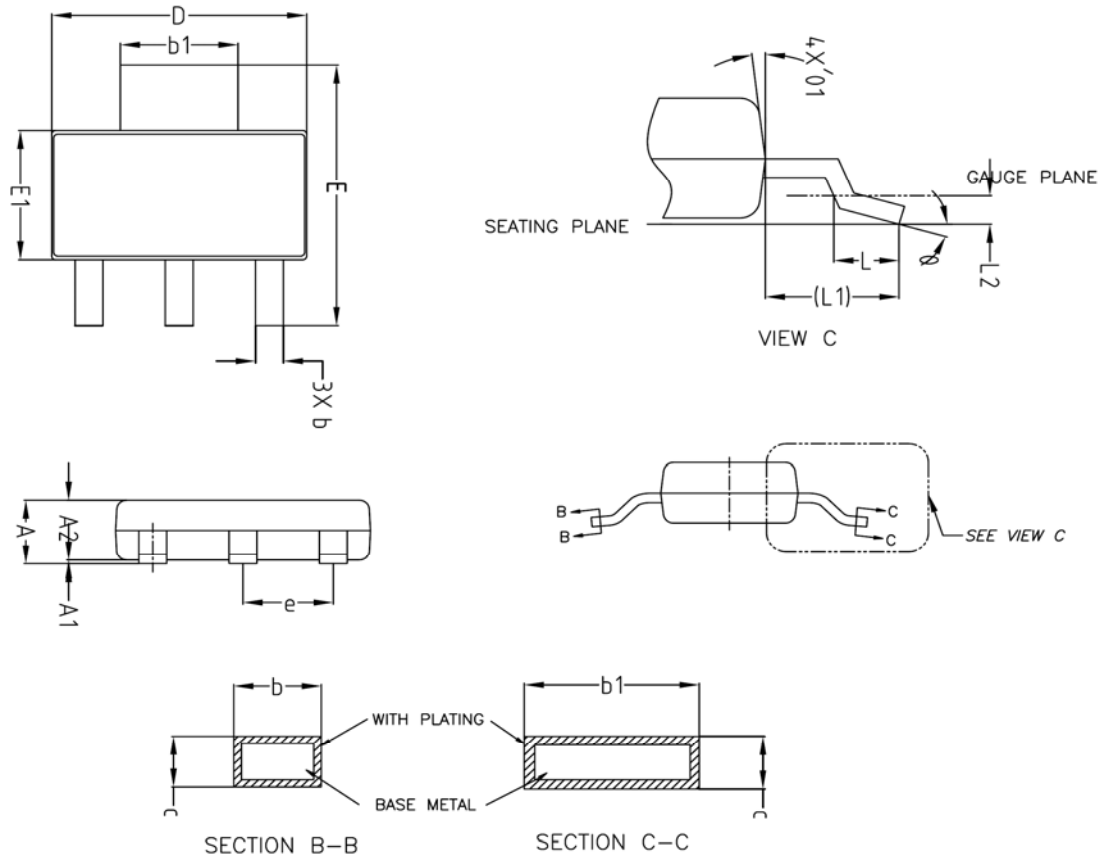
**Fig. 11  $f_T - I_C$**



**Fig. 12 Safe operating Area**

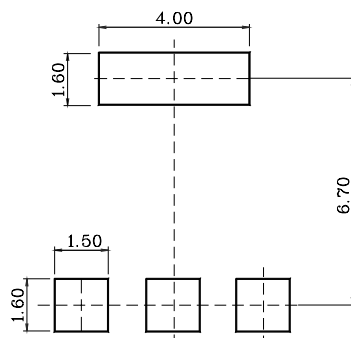


## Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	—	—	1.80	
A1	0.00	—	0.10	
A2	1.60	1.65	1.70	
b	0.68	—	0.76	
b1	2.95	—	3.07	
c	0.23	—	0.28	
D	6.40	6.50	6.60	
E	6.80	7.00	7.20	
E1	3.40	3.50	3.60	
e	2.30 BSC			
L	0.45	—	0.65	
L1	1.75 REF			
L2	0.10 BSC			
$\theta$	0°	—	10°	
$\theta$ 1	5°	—	10°	

※ Recommend PCB solder land [Unit: mm]



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