

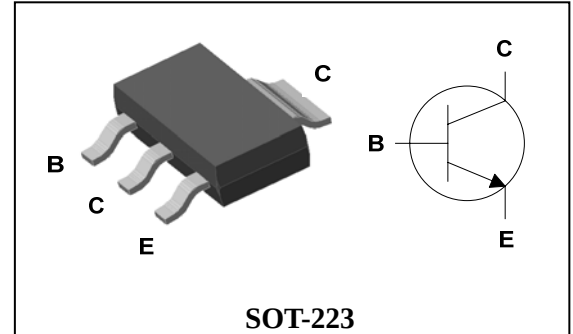
Descriptions

- General purpose amplifier
- High voltage application

Features

- High collector breakdown voltage
: $V_{CEO} = 90V$
- Low collector saturation voltage
: $V_{CE(sat)} = 0.5V(MAX.)$

PIN Connection



Ordering Information

Type No.	Marking	Package Code
STC6075Q	STC6075□	SOT-223

□ : Year & Week Code

Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	120	V
Collector-Emitter voltage	V_{CEO}	90	V
Emitter-Base voltage	V_{EBO}	6	V
Collector current	I_C	1.5	A(DC)
	I_{CP}^*	3.0	A(Pulse)
Collector power dissipation	P_C	1.1	W
	P_C^{**}	1.5	
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55~150	°C

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

** : When mounted on ceramic substrate(250 mm² × 0.8t)

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C=100\mu A, I_E=0$	120	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C=1mA, I_B=0$	90	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E=100\mu A, I_C=0$	6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=90V, I_E=0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$	-	-	0.1	μA
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	$V_{BE(sat)}^{2)}$	$I_C=500mA, I_B=50mA$	-	-	1.5	V
Transition frequency	f_T	$V_{CE}=5V, I_C=50mA$	-	170	-	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 $P_C - T_a$

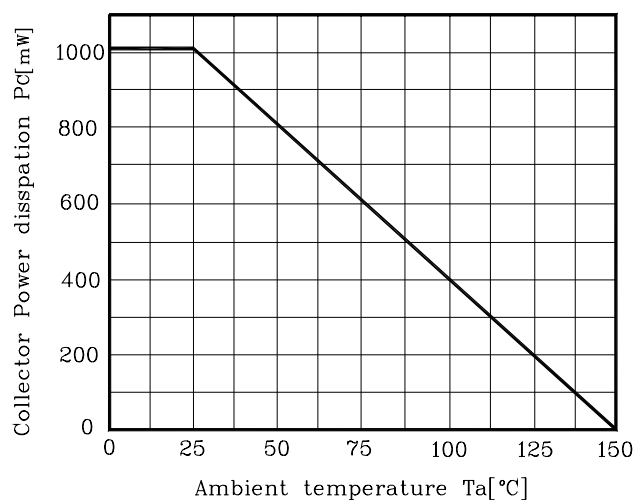


Fig. 2 $I_C - V_{BE}$

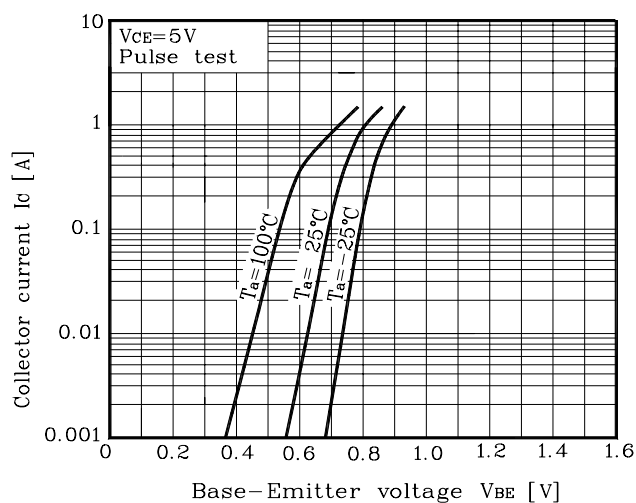


Fig. 3 $V_{CE(sat)} - I_C$

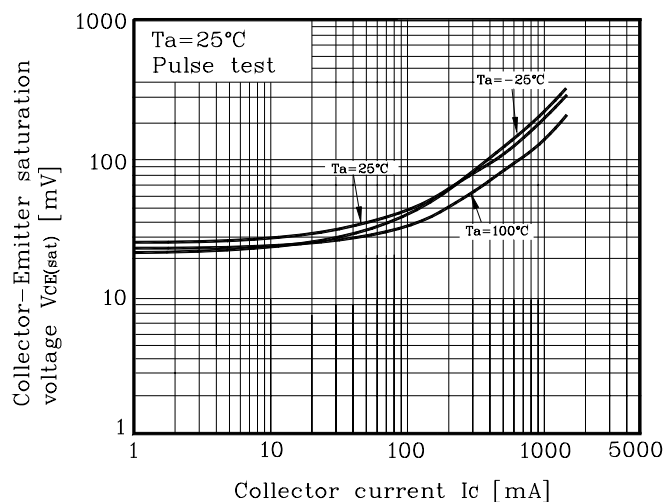


Fig. 4 $I_C - V_{CE}$

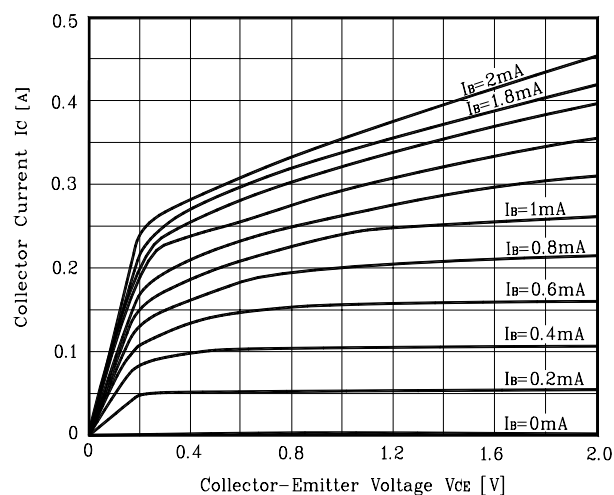


Fig. 5 $I_C - V_{CE}$

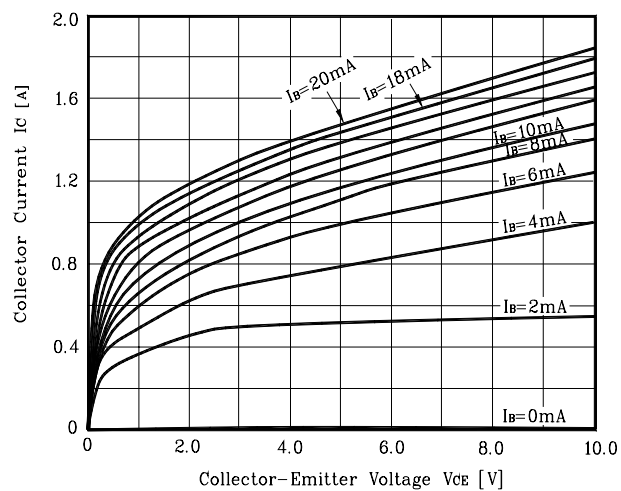
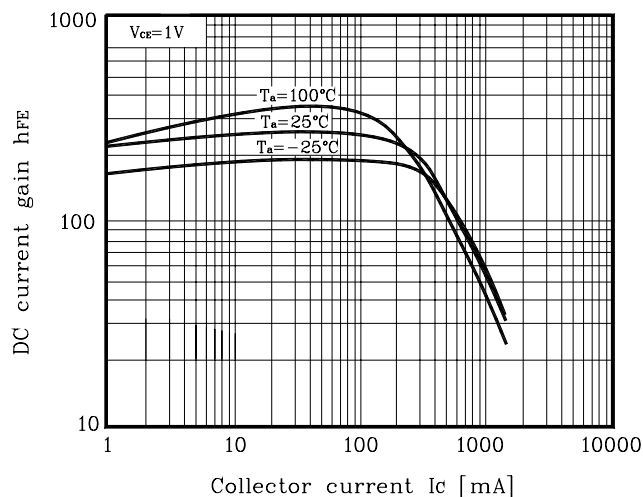


Fig. 6 $h_{FE} - I_C$



Electrical Characteristic Curves

Fig. 7 $h_{FE}-I_C$

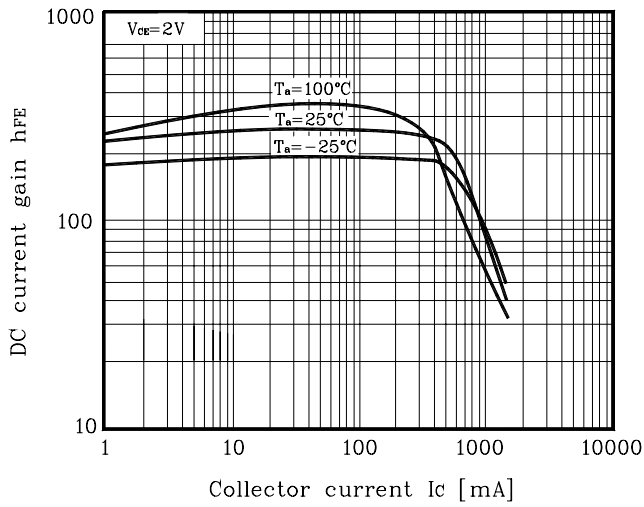


Fig. 8 $h_{FE}-I_C$

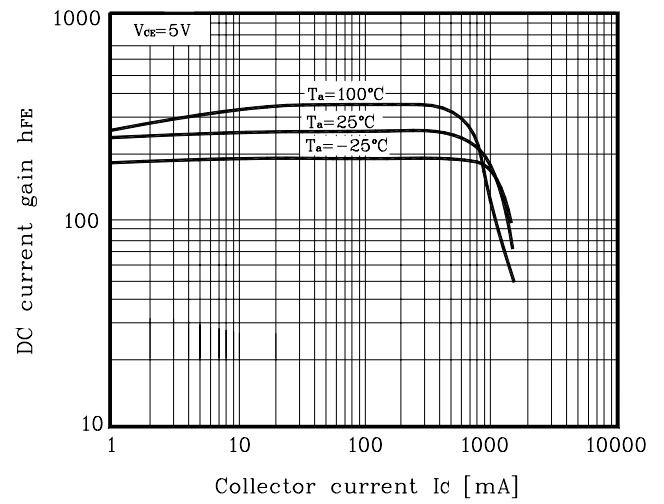


Fig. 9 $C_{ob} - V_{CB}$

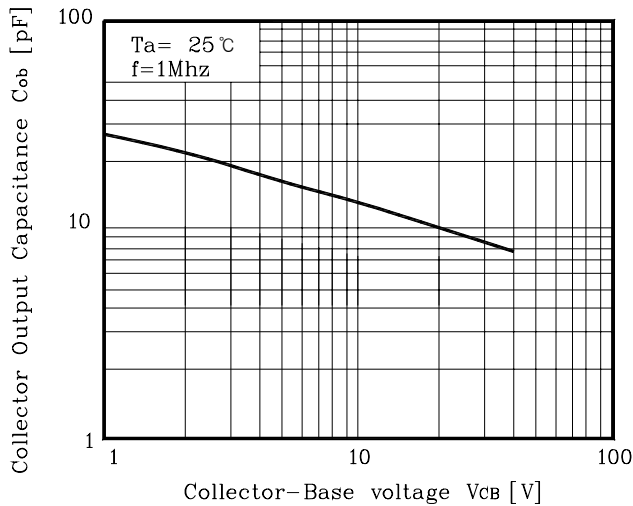


Fig. 10 $f_T - I_C$

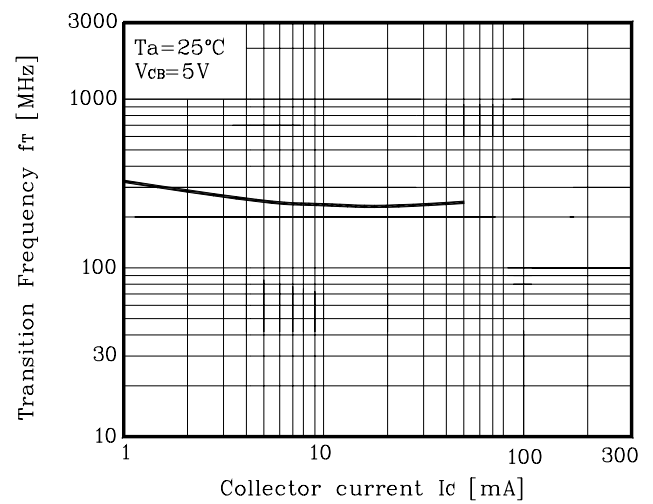
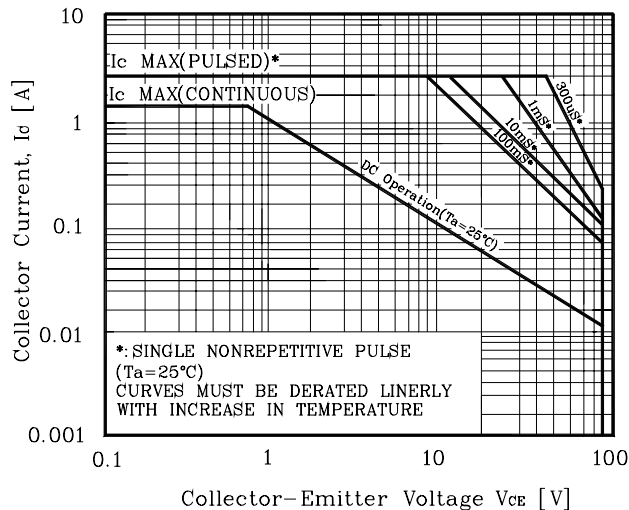
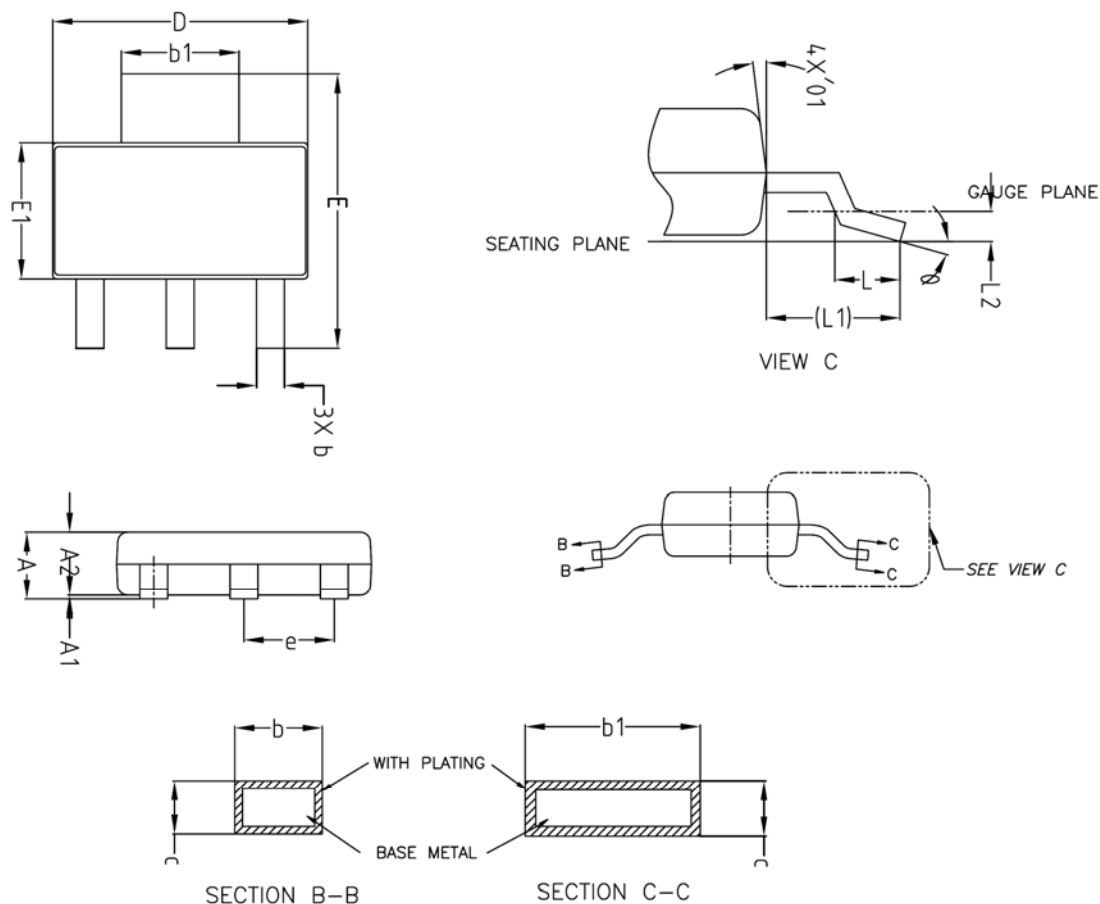


Fig. 11 Safe Operating Area

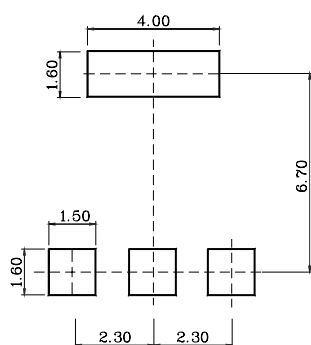


Outline Dimension



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			
Φ	0°	—	10°	
Φ1	5°	—	10°	

※ Recommend PCB solder land [Unit: mm]



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