

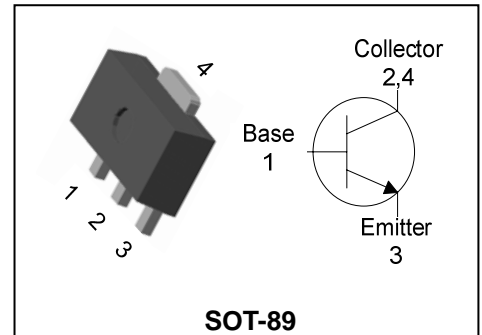
Descriptions

- General purpose amplifier
- High voltage application

Features

- High collector breakdown voltage
: $V_{CB0} = 180V$, $V_{CEO} = 160V$
- Low collector saturation voltage
: $V_{CE(sat)} = 0.5V(MAX.)$

PIN Connection



Ordering Information

Type No.	Marking	Package Code
STC5551F	N51 □YWW	SOT-89

N51: DEVICE CODE, □ : h_{FE} rank, YWW(Y : Year code, WW : Weekly code)

Absolute maximum ratings

($T_a = 25^\circ C$)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CB0}	180	V
Collector-Emitter voltage	V_{CEO}	160	V
Emitter-Base voltage	V_{EBO}	6	V
Collector current	I_C	0.6	A(DC)
	I_{CP}^*	1.2	A(Pulse)
Collector power dissipation	P_C	0.5	W
	P_C^{**}	1	
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($250 \text{ mm}^2 \times 0.8 \text{ t}$)

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	180	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{ mA}, I_B = 0$	160	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E = 10\mu A, I_C = 0$	6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 120V, I_E = 0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	-	-	0.1	μA
DC current gain	$h_{FE}^{1)}$	$V_{CE} = 5V, I_C = 10\text{ mA}$	80	-	250	-
Collector-Emitter saturation voltage	$V_{CE(sat)(1)}^{2)}$	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$	-	-	0.2	V
	$V_{CE(sat)(2)}^{2)}$	$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	-	-	0.5	V
Base-Emitter saturation voltage	$V_{BE(sat)(1)}^{2)}$	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$	-	-	1	V
	$V_{BE(sat)(2)}^{2)}$	$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	-	-	1	V
Transition frequency	f_T	$V_{CE} = 10V, I_C = 10\text{ mA}$	100	-	400	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1\text{ MHz}$	-	6	-	pF

* Note 1) hFE Rank / A : 80~150, B : 130~250

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

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

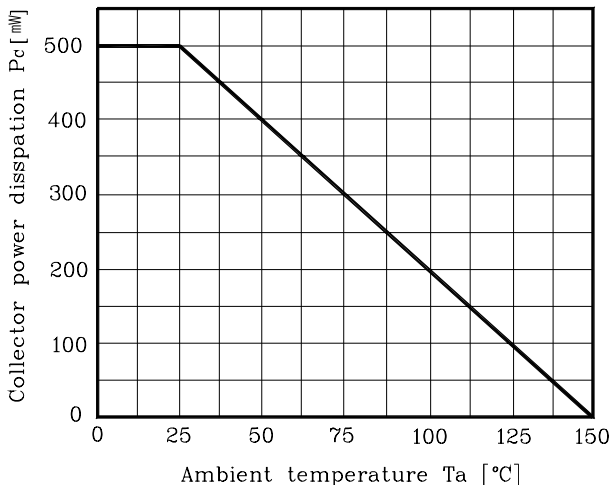


Fig. 2 $I_C - V_{BE}$

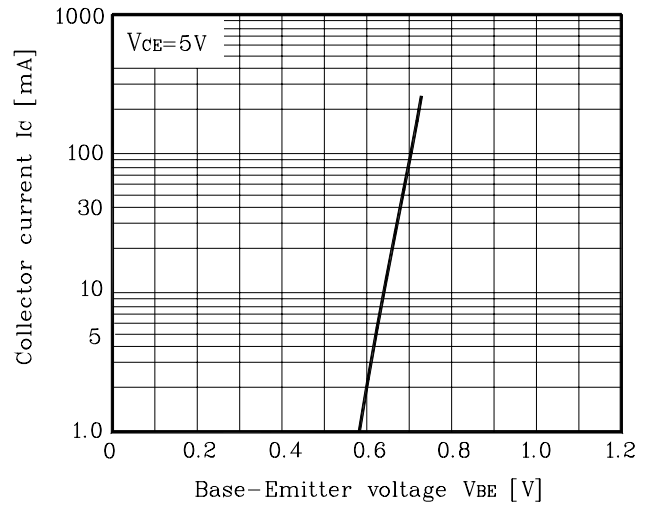


Fig. 3 $h_{FE} - I_C$

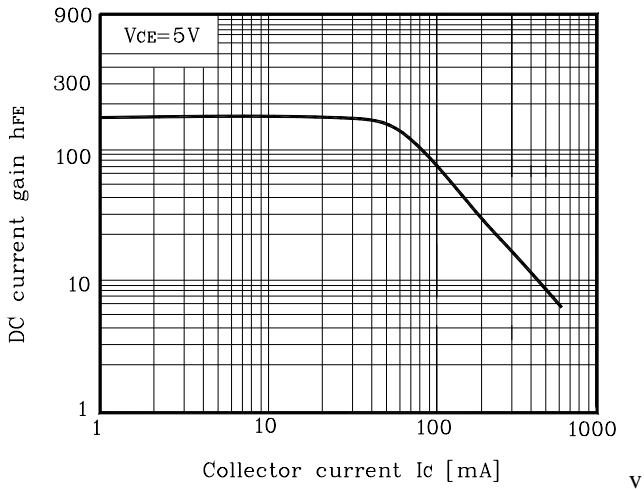


Fig. 4 $V_{CE(sat)}, V_{BE(sat)} - I_C$

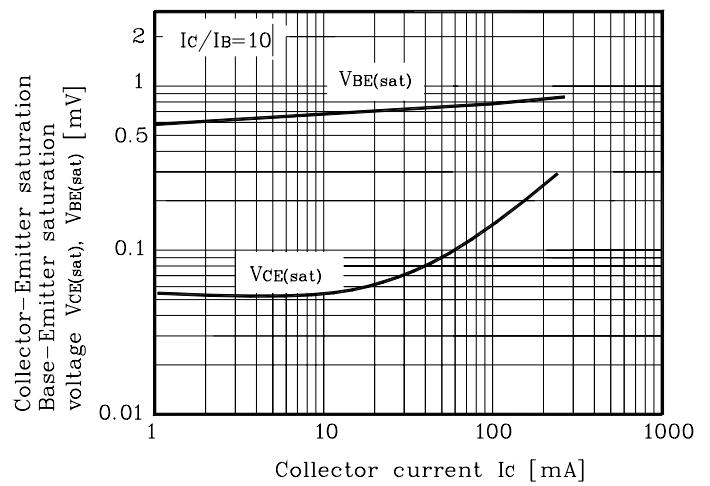


Fig. 5 $f_T - I_C$

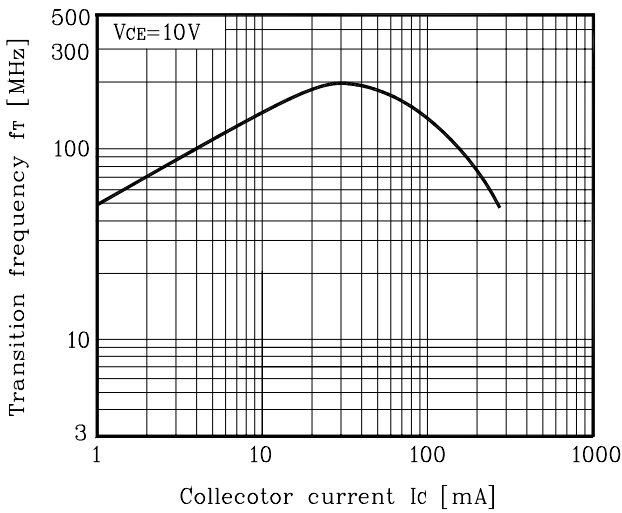
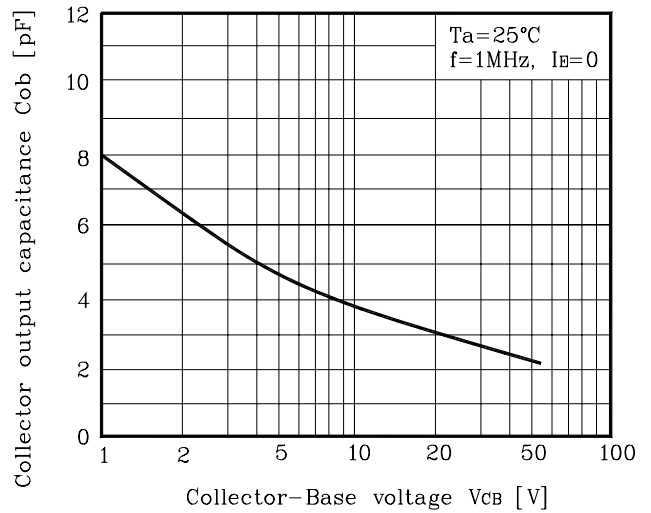
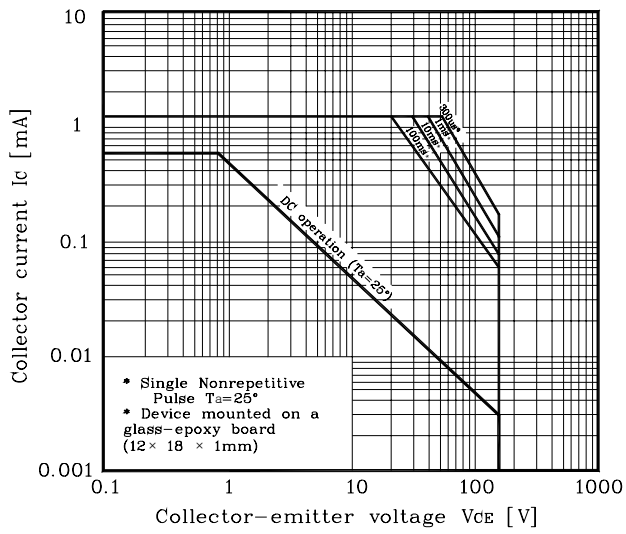


Fig. 6 $C_{ob} - V_{CB}$

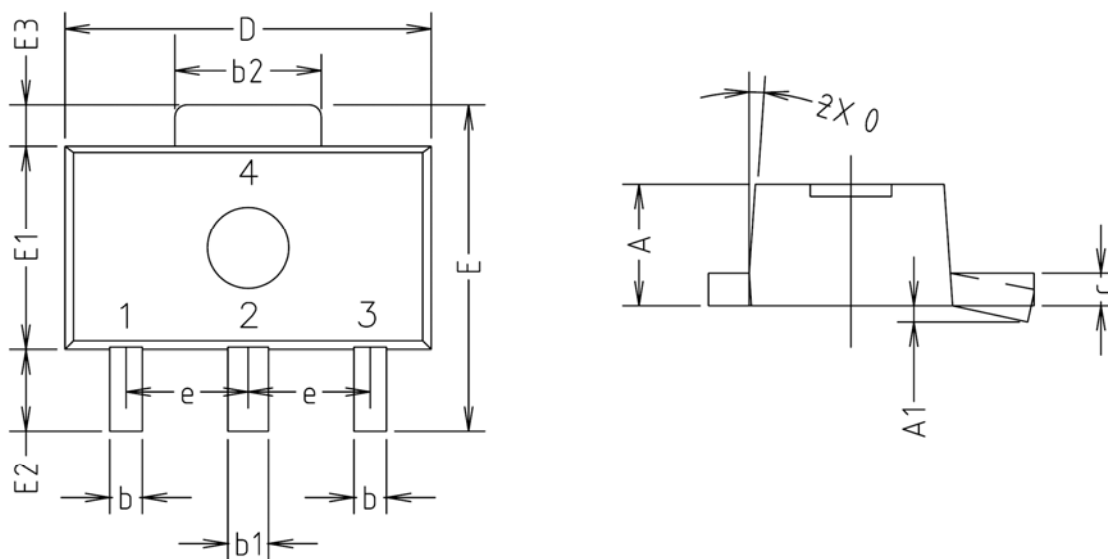


Electrical Characteristic Curves

Fig. 7 Safe operating Area

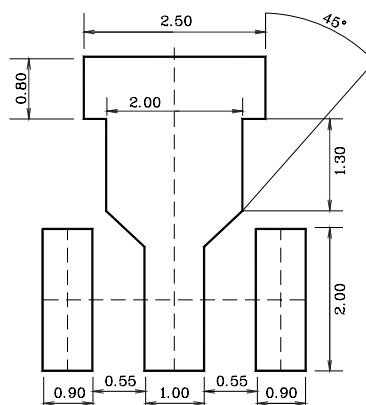


Outline Dimension(mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.40	1.50	1.60	
A1	0.00	—	0.10	
b	0.38	0.42	0.48	
b1	0.48	0.52	0.58	
b2	1.79	1.82	1.87	
c	0.40	0.42	0.46	
D	4.40	4.50	4.70	
E	3.70	4.00	4.30	
E1	2.40	2.50	2.70	
E2	0.80	1.00	1.20	
E3	0.40	0.50	0.60	
e	1.50 TYP.			
θ	4° TYP.			

※Recommend PCB solder land [Unit: mm]



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