

STC601F

NPN Silicon Transistor



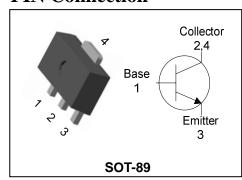
Descriptions

- General purpose amplifier
- High voltage application

Features

- High collector breakdown voltage
- $: V_{CEO} = 100V$
- Low collector saturation voltage
- : $V_{CE(sat)} = 0.5V(MAX.)$
- "Green" device and RoHS compliant device
- Available in full lead (Pb)-free device

PIN Connection



Ordering Information

Type No.	Marking	Package Code
STC601F	M75 YWW	SOT-89

M75: DEVICE CODE, YWW(Y: Year code, WW: Weekly code)

Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	100	V
Collector-Emitter voltage	V_{CEO}	100	V
Emitter-Base voltage	V_{EBO}	6	V
Collector current	I _C	1	A(DC)
Collector current	I _{CP} *	2	A(Pulse)
Callagter navor dissination	P _C	0.5	NA /
Collector power dissipation	P _C **	1	W
Junction temperature	TJ	150	°C
Storage temperature	T_{stg}	-55~150	°C

^{*:} Single pulse, tp= $300 \mu s$

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

STC601F

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Collector-Base breakdown voltage	BV_CBO	I _C =100μA, I _E =0	100	-	-	٧
Collector-Emitter breakdown voltage	BV _{CEO}	I _C =1mA, I _B =0	100	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	I _E =100μA, I _C =0	6	-	-	V
Collector cut-off current	I _{CBO}	V _{CB} =100V, 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} =3V, I_{C} = 500 mA	120	-	390	-
Collector-Emitter saturation voltage	V _{CE(sat)} ²⁾	$I_{C} = 500 \text{ mA}, I_{B} = 50 \text{ mA}$	-	-	0.5	V
Base-Emitter saturation voltage	V _{BE(sat)} 2)	$I_C=500$ mA, $I_B=50$ mA	-	-	1.2	V
Transition frequency	f _T	$V_{CE}=5V$, $I_{C}=50$ mA	-	170	-	MHz
Collector output capacitance	C _{ob}	V_{CB} =10V, I_E =0, f =1 MHz	-	10	-	рF

^{*} Note 1) hFE Rank : 120~390 only

^{*} Note 1, 2) Pulse Tester : Pulse Width $~\leq 300 \mu s,$ Duty Cycle $~\leq 2.0 \%$

Electrical Characteristic Curves

Fig. 1 P_C - Ta

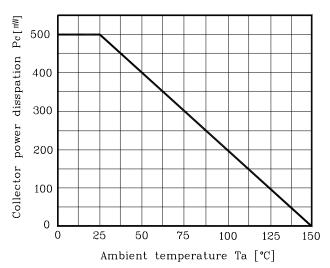


Fig. 3 $V_{\text{CE(sat)}}$. I_{C}

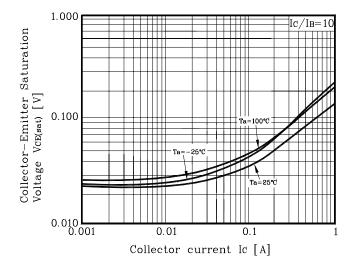


Fig. 5 I_C - V_{CE}

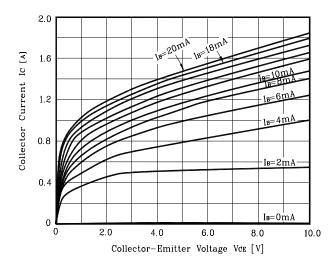


Fig. 2 I_{C} - V_{BE}

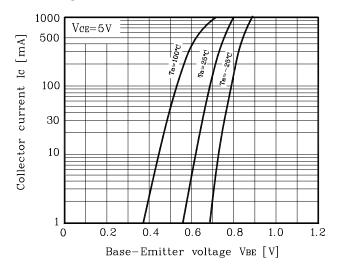


Fig. 4 $I_{\rm C}$ - $V_{\rm CE}$

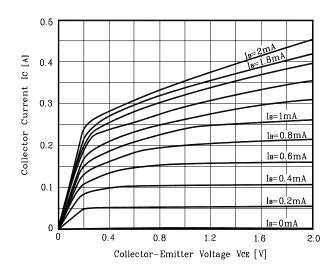
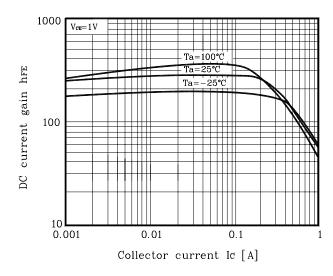


Fig. 6 h_{FE} . I_{C}



Electrical Characteristic Curves

Fig. 7 h_{FE} I_C

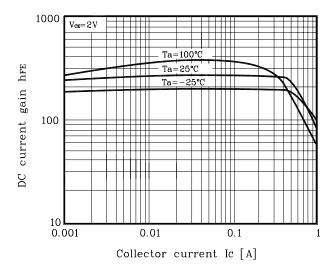


Fig. 9 Cob - V_{CB}

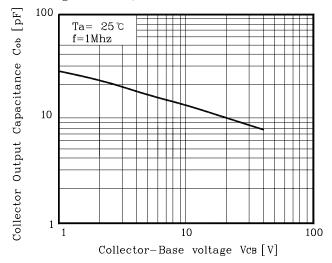


Fig. 11 Safe operating Area

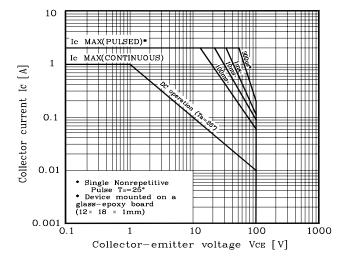


Fig. 8 h_{FE} . I_{C}

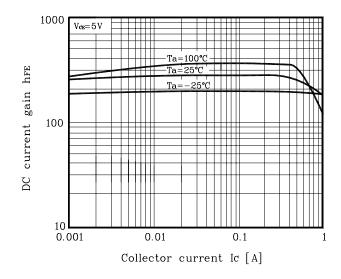
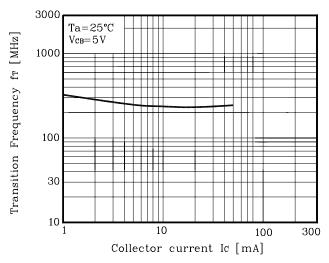


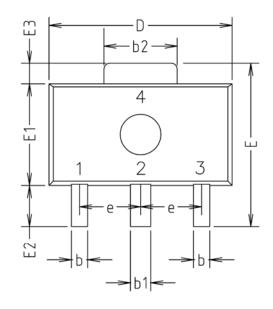
Fig. 10 f_T - I_C

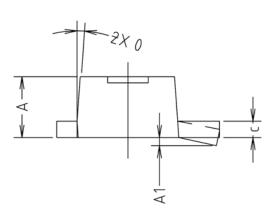


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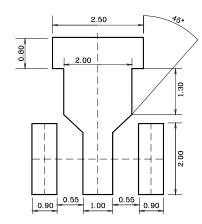
Outline Dimension(mm)





	MILLIMETERS			NOTE	
SYMBOL	MINIMUM	NOMINAL	MAXIMUM	NOTE	
Α	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		
С	0.40	0.42	0.46		
D	4.40	4.50	4.70		
Ε	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		
е		1.50 TYP.			
0		4° TYP.			

*Recommend PCB solder land [Unit: mm]



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