

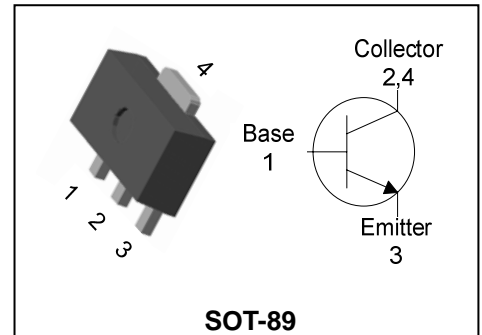
Descriptions

- General purpose amplifier
- High voltage application

Features

- Low saturation switching application
- Voltage regulator application
- Low saturation: $V_{CE(sat)} = 0.4V$ typ
- High voltage : $V_{CEO} = 60V$ Min

PIN Connection



Ordering Information

Type No.	Marking	Package Code
STC401F	C401 YWW	SOT-89

C401: DEVICE CODE, YWW(Y : Year code, WW : Weekly code)

Absolute maximum ratings

($T_a = 25^\circ C$)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	80	V
Collector-Emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	1	A
Collector dissipation	P_C	0.5	W
	P_C^*	1	
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 ~ 150	$^\circ C$

Characteristic		Symbol	Typ.	Max	Unit
Thermal resistance	Junction-ambient	$R_{th(J-A)}$	-	250.0	$^\circ C/W$
		$R_{th(J-A)}^*$	-	125.0	

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

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C=100\ \mu A, I_E=0$	80	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	60	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E=10\text{mA}, I_C=0$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$	-	-	0.1	μA
DC current gain	h_{FE}^*	$V_{CE}=2\text{V}, I_C=100\text{mA}$	200	-	500	-
		$V_{CE}=2\text{V}, I_C=1\text{A}$	80	-	-	
Base-Emitter on voltage	$V_{BE(ON)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	-	-	1.2	V
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	-	0.4	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	10	-	pF
Transition frequency	f_T	$V_{CB}=10\text{V}, I_C=50\text{mA}$	-	160	-	MHz

* h_{FE} rank : 200~500 Only

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

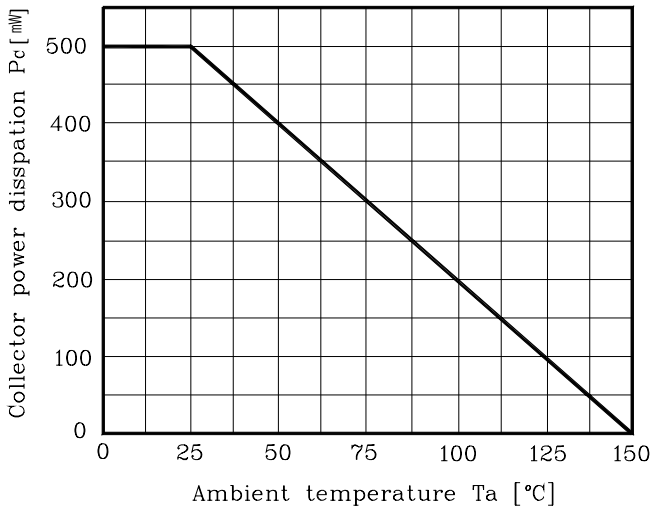


Fig. 2 $V_{CE} - I_C$

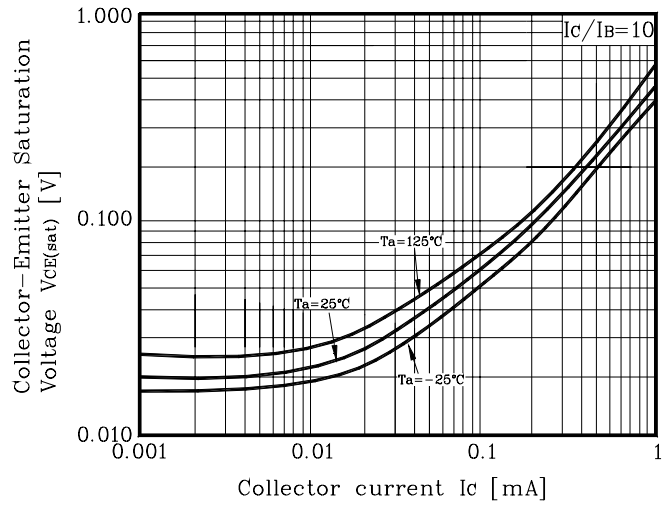


Fig. 3 $h_{FE} - I_C$

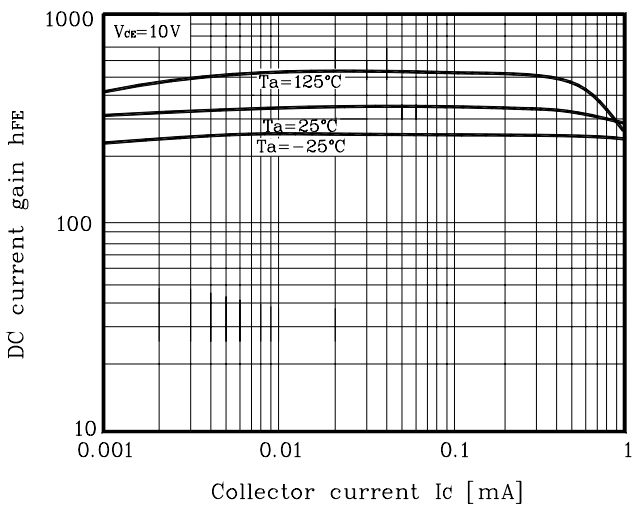


Fig. 4 $h_{FE} - I_C$

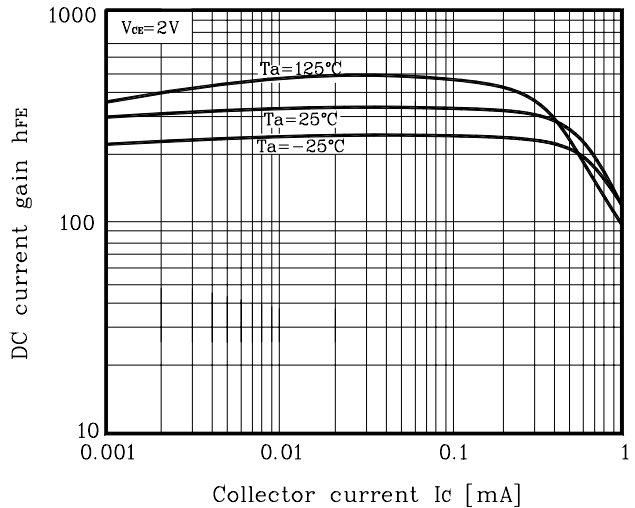


Fig. 5 $h_{FE} - I_C$

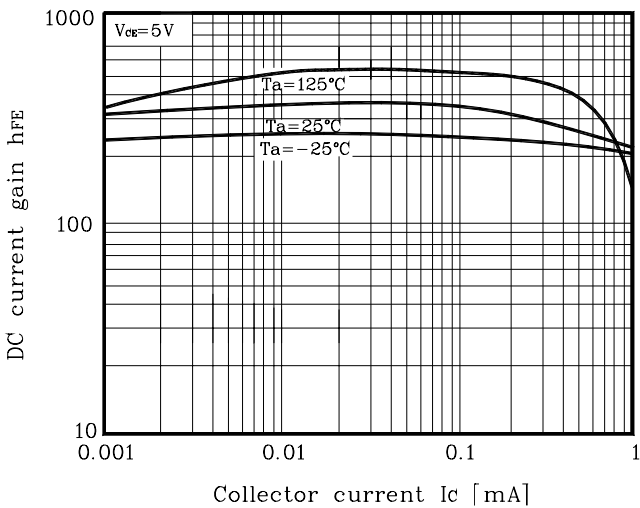
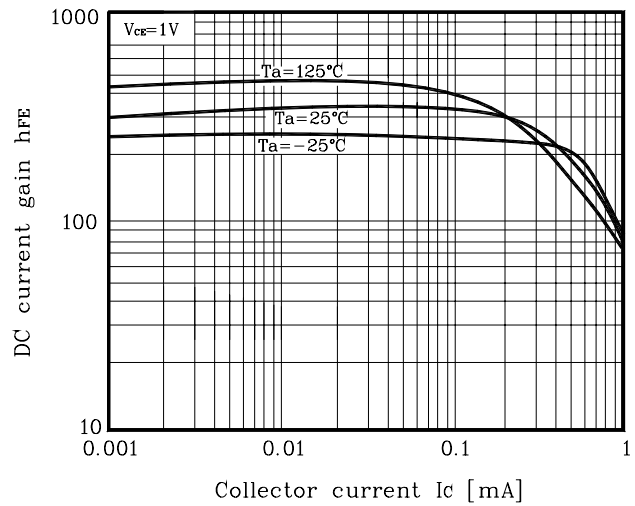


Fig. 6 $h_{FE} - I_C$



Electrical Characteristic Curves

Fig. 7 Cob - V_{CB}

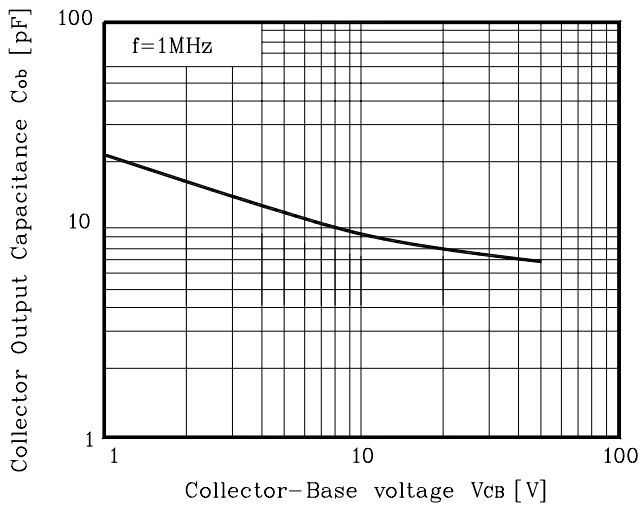


Fig. 8 I_C - V_{CE}

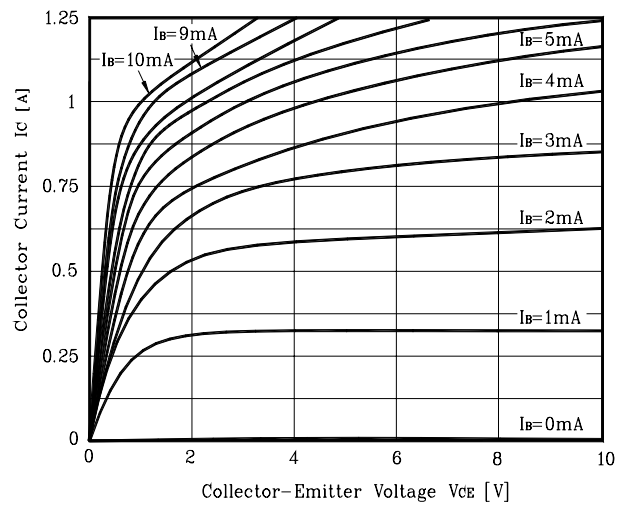


Fig. 9 f_T - I_C

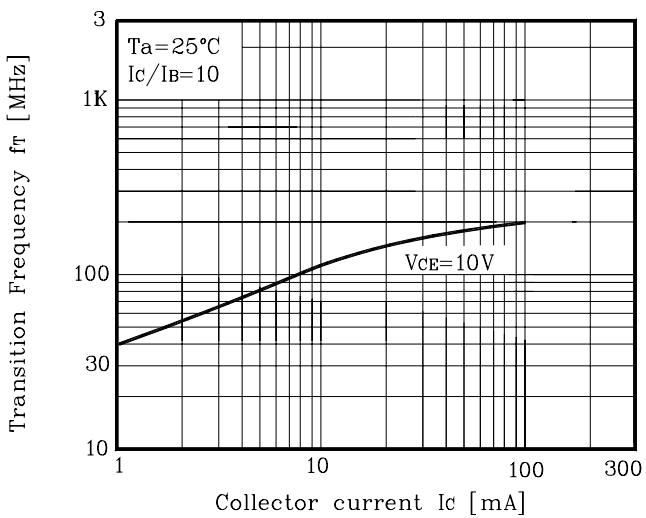
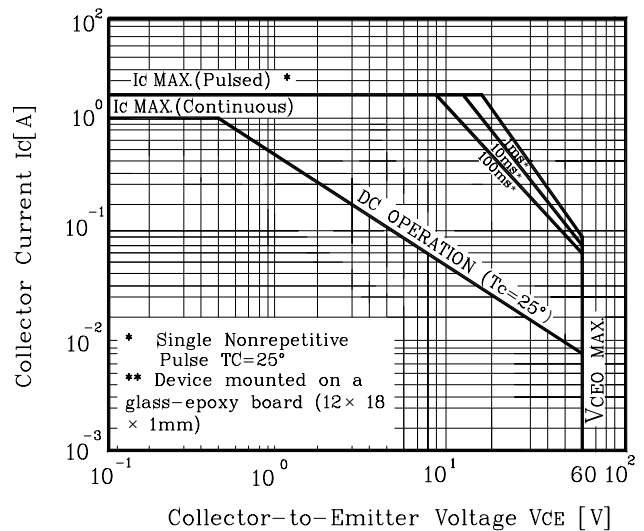
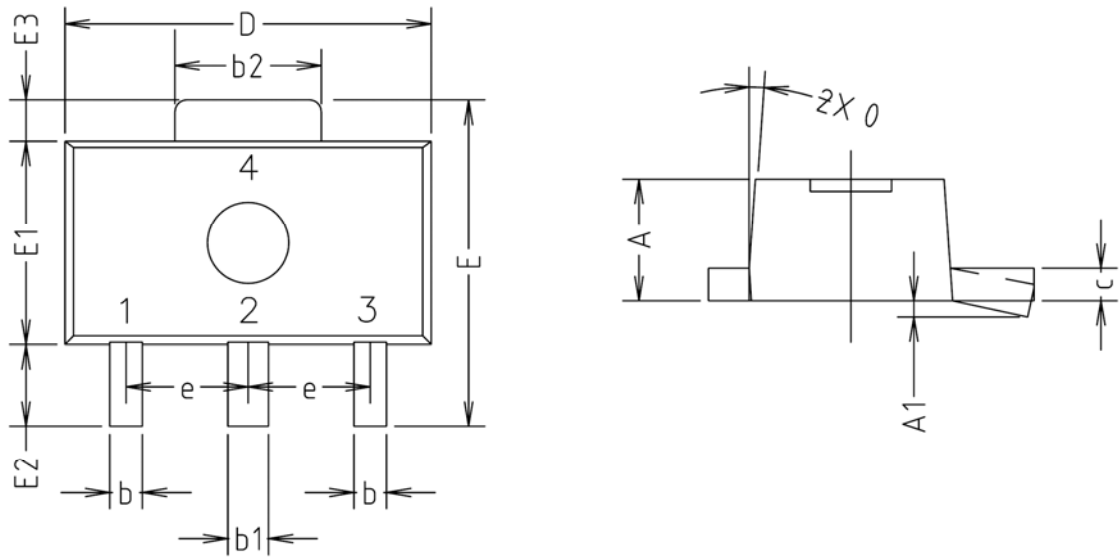


Fig. 10 Safe operating Area

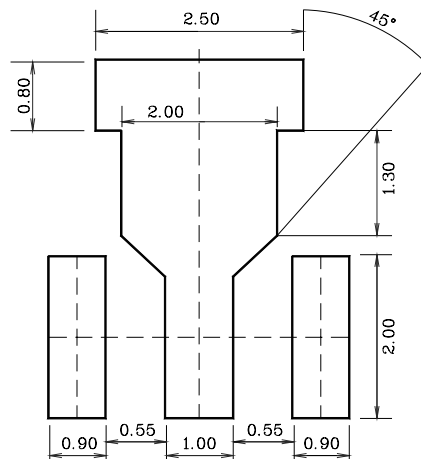


Outline Dimension(mm)



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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