KODENSHI AUK

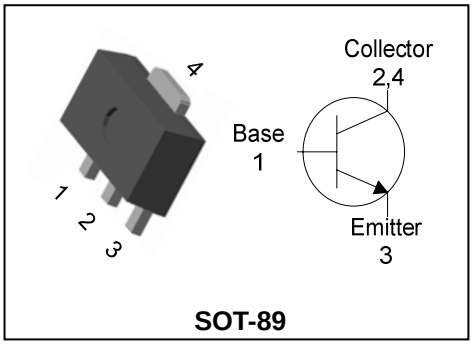
STC503F

NPN Silicon Transistor

Applications

- Power amplifier application
- High current switching application

PIN Connection



SOT-89

Features

- Power Transistor General Purpose application
- Low saturation voltage
  : $V_{CE(sat)}$=0.4V Typ.
- High Voltage : V_{CEO}=65V Min.

Ordering Information

Type NO.	Marking	Package Code
STC503F	C503 YWW	SOT-89

Absolute Maximum Ratings [Ta=25℃]

Characteristic	Symbol	Rating	Unit
Collector-Base voltage	V_{CBO}	80	V
Collector-Emitter voltage	V_{CEO}	65	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	3	A(DC)
	I_{CP}*	6	A(Pulse)
Collector Power dissipation	P_C	0.5	W
	P_C**	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C

* : Single pulse, tp= 300 μs

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

Electrical Characteristics (Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter breakdown voltage	BV_{CEO}	I_C=1mA, I_B=0	65	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=65V, I_E=0	-	-	50	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	50	μA
DC current gain	h_{FE} *	V_{CE}=5V, I_C=0.5A	300	-	500	-
Base-Emitter on voltage	$V_{BE(ON)}$	V_{CE}=5V, I_C=0.5A	-	0.7	1	V
Collector-Emitter saturation voltage	$V_{CE(sat)}$	I_C=2A, I_B=0.2A	-	0.4	1	V
Transition frequency	f_T	V_{CB}=5V, I_C=50mA	-	250	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	15	-	pF

* hFE rank : 300~500 Only

Electrical Characteristic Curves

Fig. 1 P_C - Ta

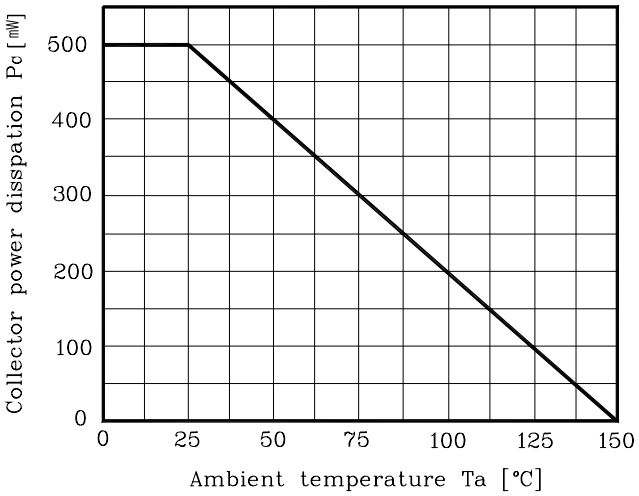


Fig. 2 I_C - V_{BE}

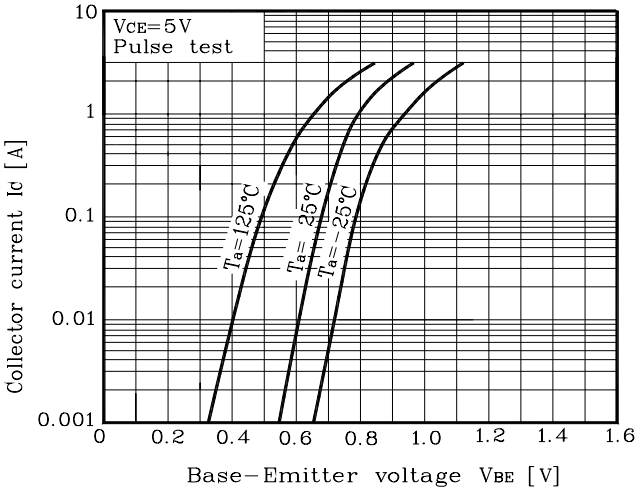


Fig. 3 $V_{CE(sat)}$ - I_C

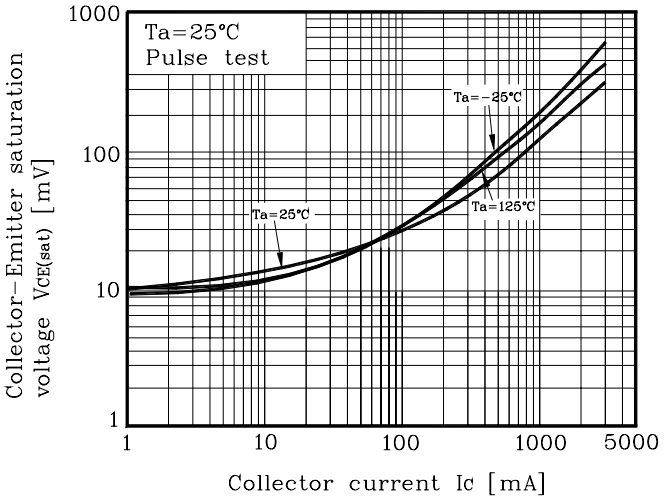


Fig. 4 I_C - V_{CE}

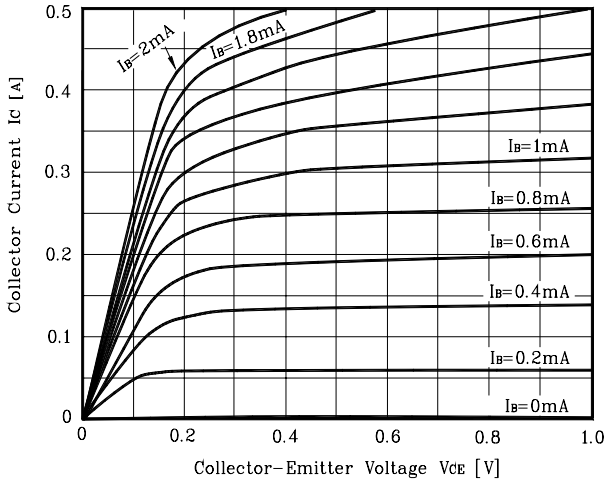


Fig. 5 I_C - V_{CE}

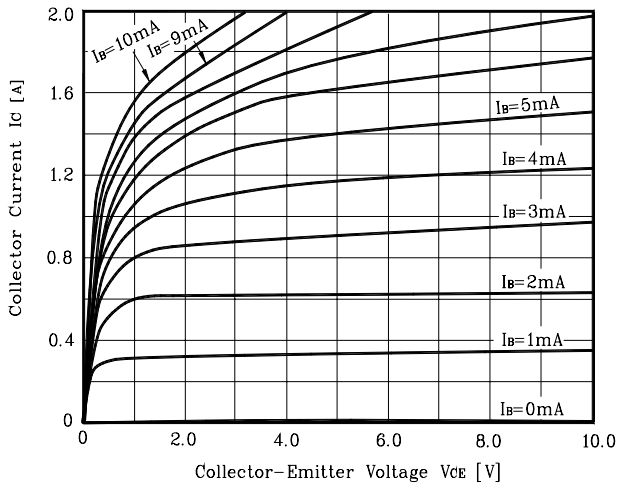
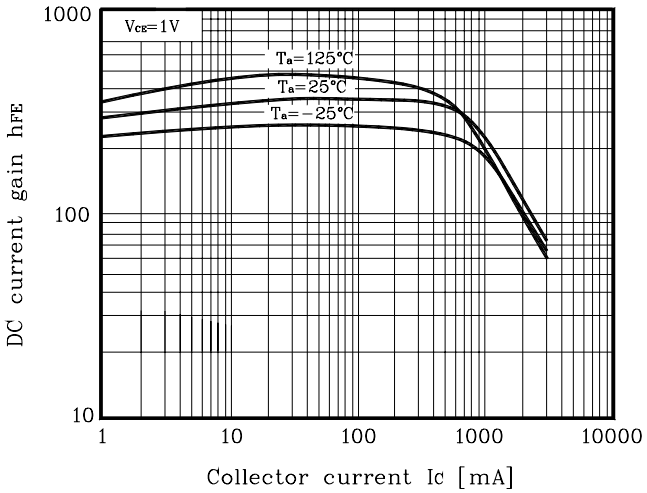


Fig. 6 h_{FE}-I_C



Electrical Characteristic Curves

Fig. 7 h_{FE}-I_C

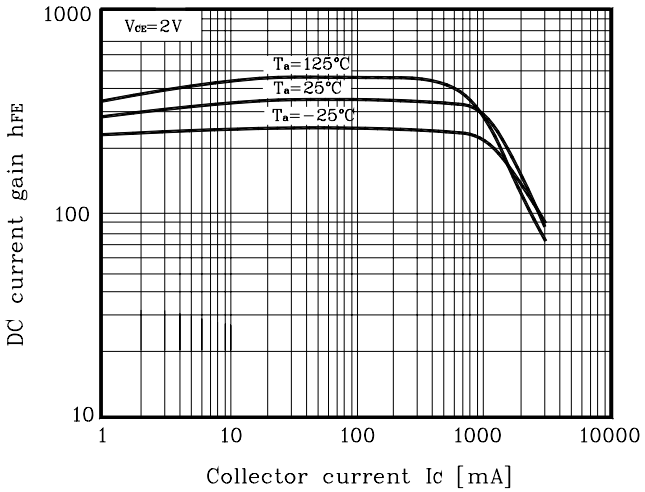


Fig. 8 h_{FE}-I_C

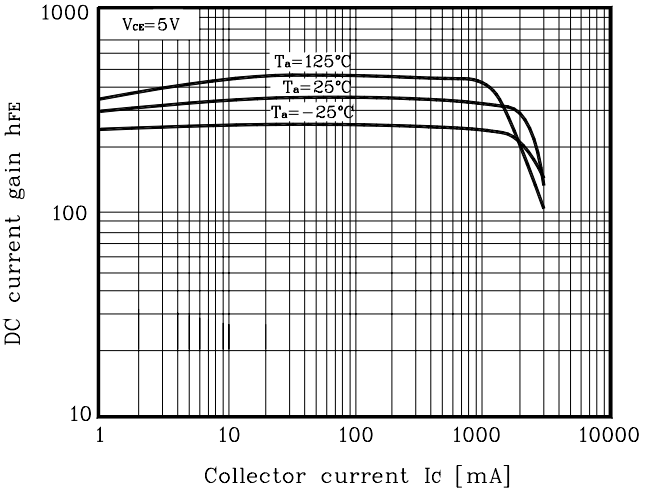


Fig. 9 Cob - V_{CB}

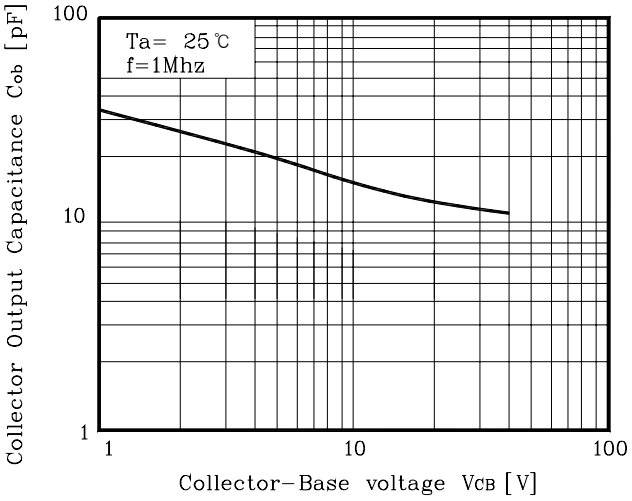


Fig. 10 f_T - I_C

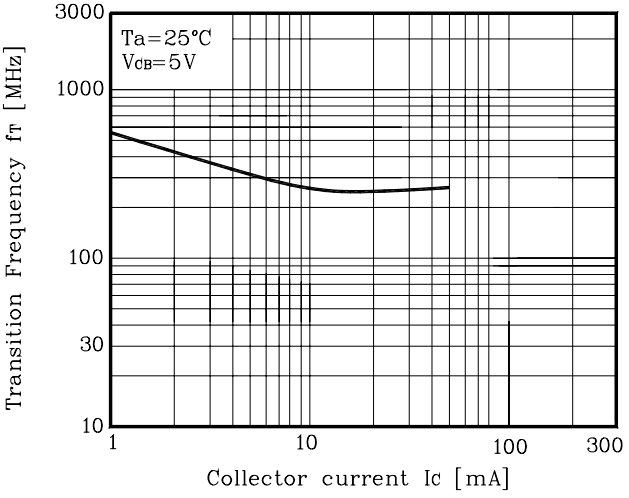
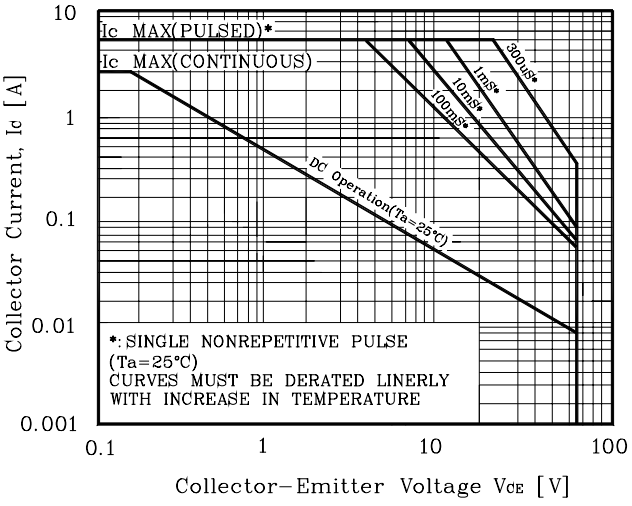
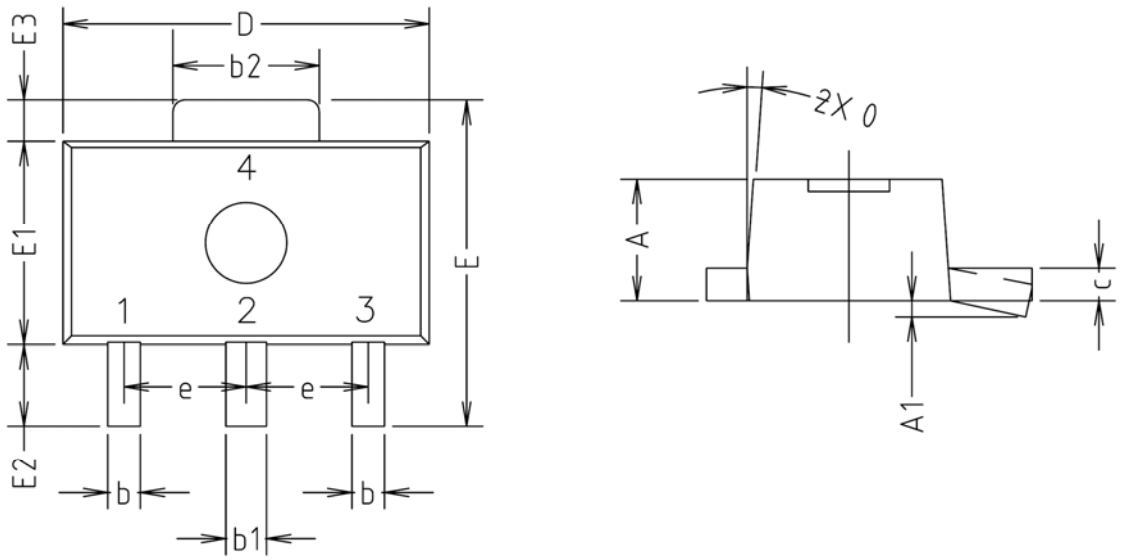


Fig. 11 Safe Operating Area

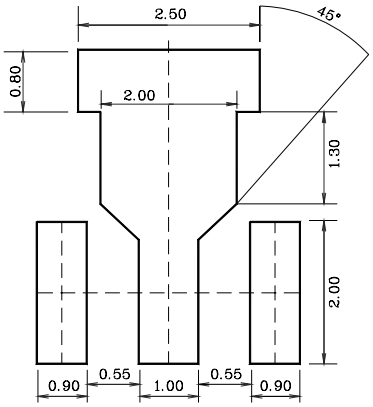


Outline Dimension(mm)



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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