KODENSHI AUK

STA3073F

PNP Silicon Transistor

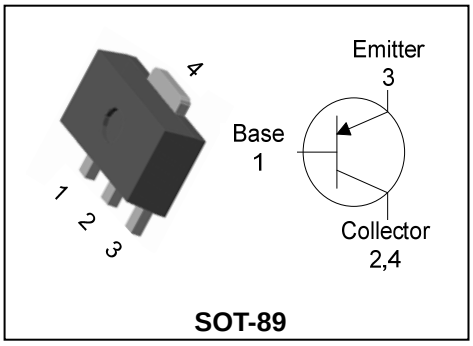
Applications

- Power amplifier application
- High current switching application

Features

- High collector breakdown voltage
  : V_{CEO}=-120V
- Low collector saturation voltage
  : $V_{CE(sat)}$=-0.5V(Max.)

PIN Connection

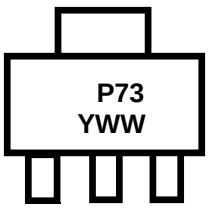


SOT-89

Ordering Information

Type NO.	Marking	Package Code
STA3073F	P73	SOT-89

Marking Diagram



Column 1: Device Code

Column 2: Year & Week Code

Absolute Maximum Ratings

(Ta=25℃)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-120	V
Collector-emitter voltage	V_{CEO}	-120	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-1	A(DC)
	I_{CP}*	-2	A(Pulse)
Collector Power dissipation	P_C	0.5	W
	P_C**	1	
Junction temperature	T_J	150	℃
Storage temperature range	T_{stg}	-55~150	℃

* : Single pulse, tp= 300 μs

** : Device mounted on ceramic substrate (250mm^2 x 0.8t)

Thermal Characteristics

(Ta=25°C)

Characteristic		Symbol	Typ.	Max.	Unit
Thermal resistance	Junction-ambient	$R_{th(J-A)}$	-	250	℃/W
		$R_{th(J-A)}$ **	-	125	℃/W

** : Device mounted on ceramic substrate ($250mm^2 \times 0.8t$)

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	I_C=-100μA, I_E=0	-120	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	I_C=-1 mA, I_B=0	-120	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	I_E=-100μA, 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= -30 mA	200	-	400	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$ 2)	I_C=-500 mA, I_B=-50 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	-	240	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1 MHz	-	10	-	pF

* Note 1) hFE Rank : 200~400 only

* Note 1, 2) Pulse Tester : Pulse Width ≤300μs, Duty Cycle ≤2.0%

Electrical Characteristic Curves (Typical Performance)

Fig. 1 I_C - V_{BE}

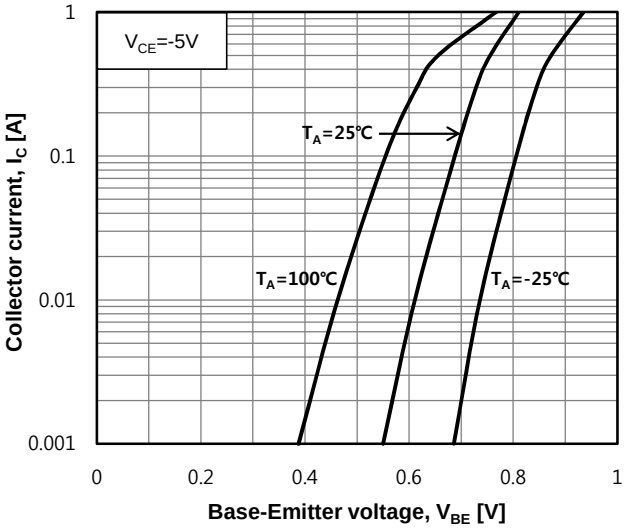


Fig. 2 I_C - $V_{BE(sat)}$

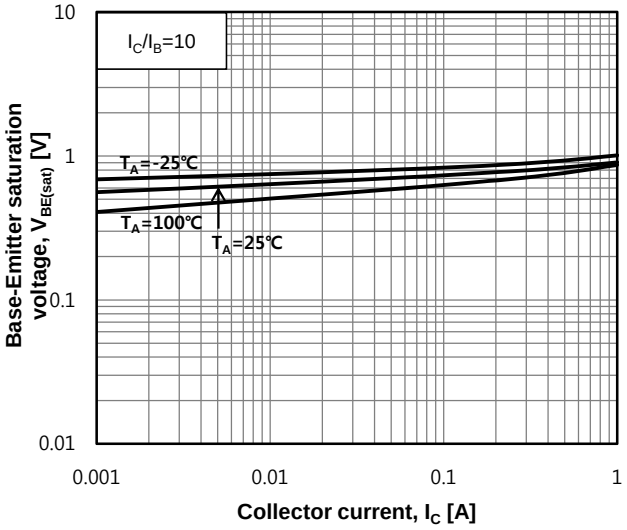


Fig. 3 $V_{CE(sat)}$ - I_C

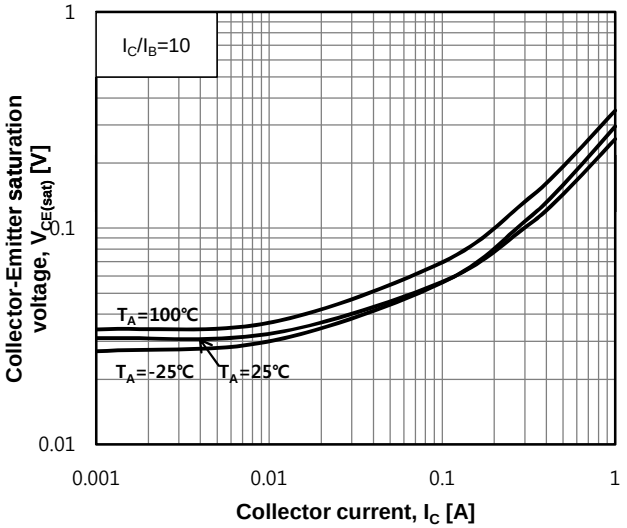


Fig. 4 $V_{CE(sat)}$ - I_C

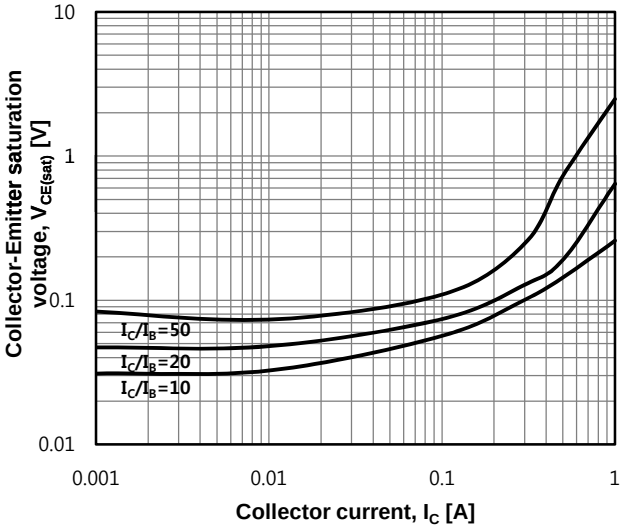


Fig. 5 I_C - V_{CE}

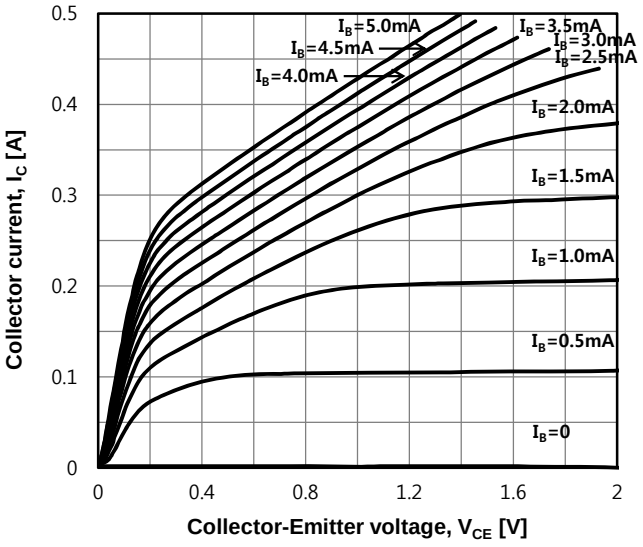
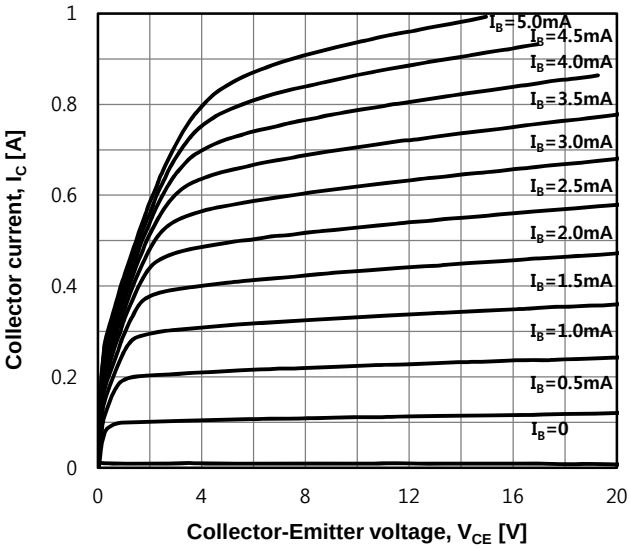


Fig. 6 I_C - V_{CE}



Electrical Characteristic Curves (Typical Performance)

Fig. 7 h_{FE} - I_C

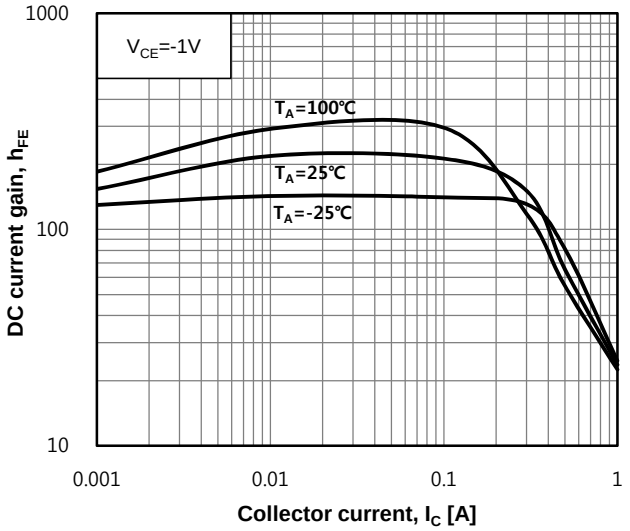


Fig. 8 h_{FE} - I_C

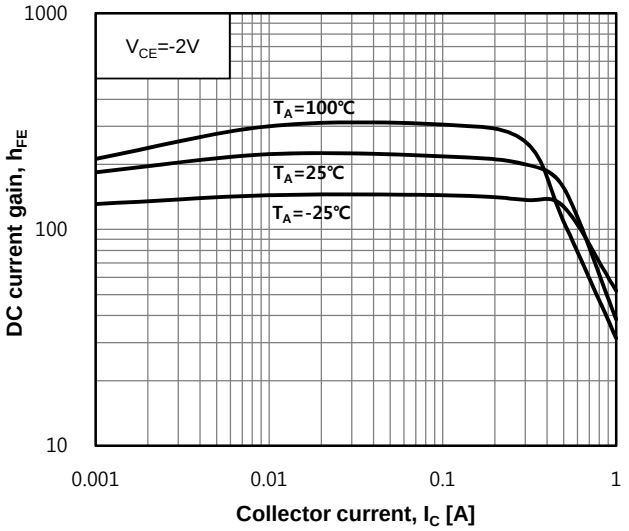


Fig. 9 h_{FE} - I_C

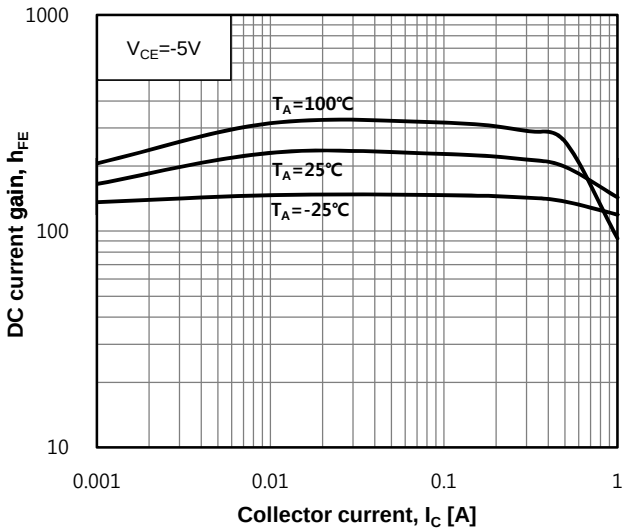


Fig. 10 h_{FE} - I_C

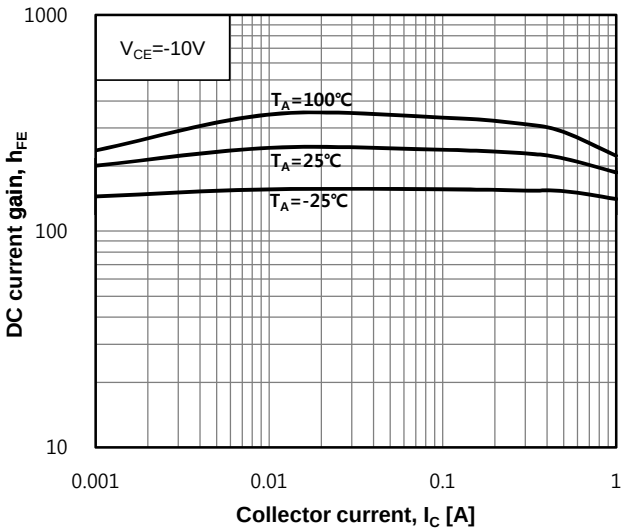


Fig. 11 f_T - I_C

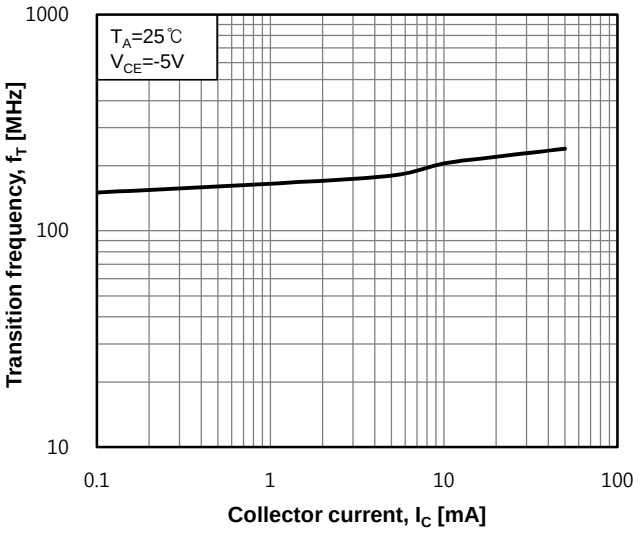
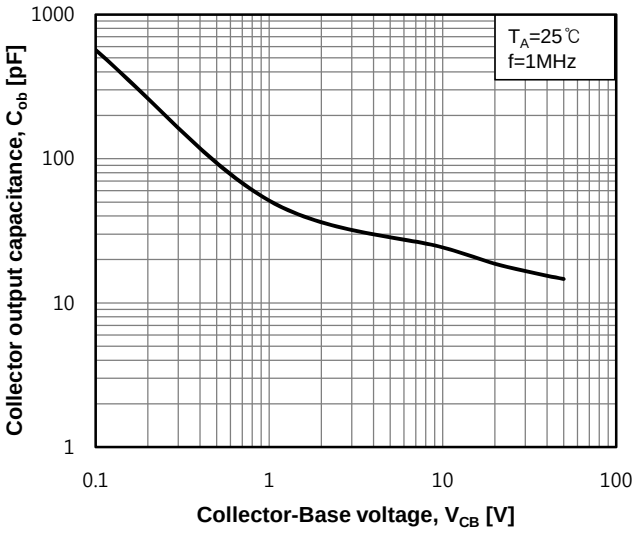


Fig. 12 C_{ob} - V_{CB}



Electrical Characteristic Curves (Typical Performance)

Fig. 13 P_C - T_A

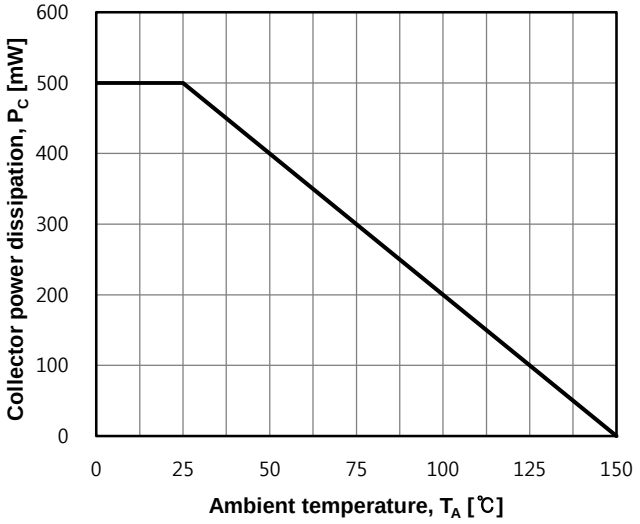
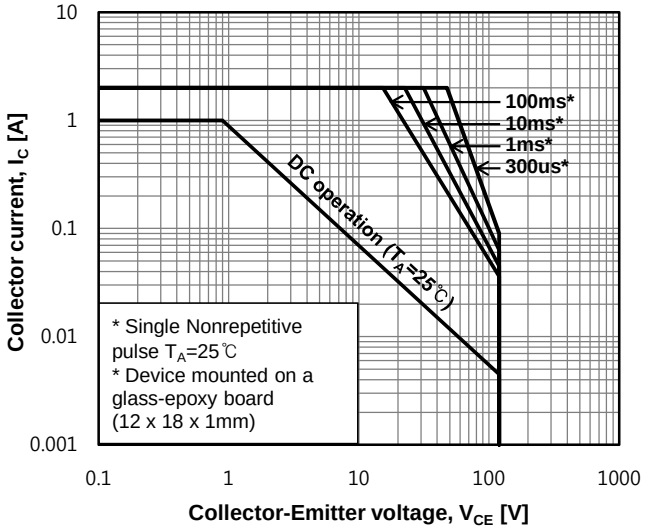
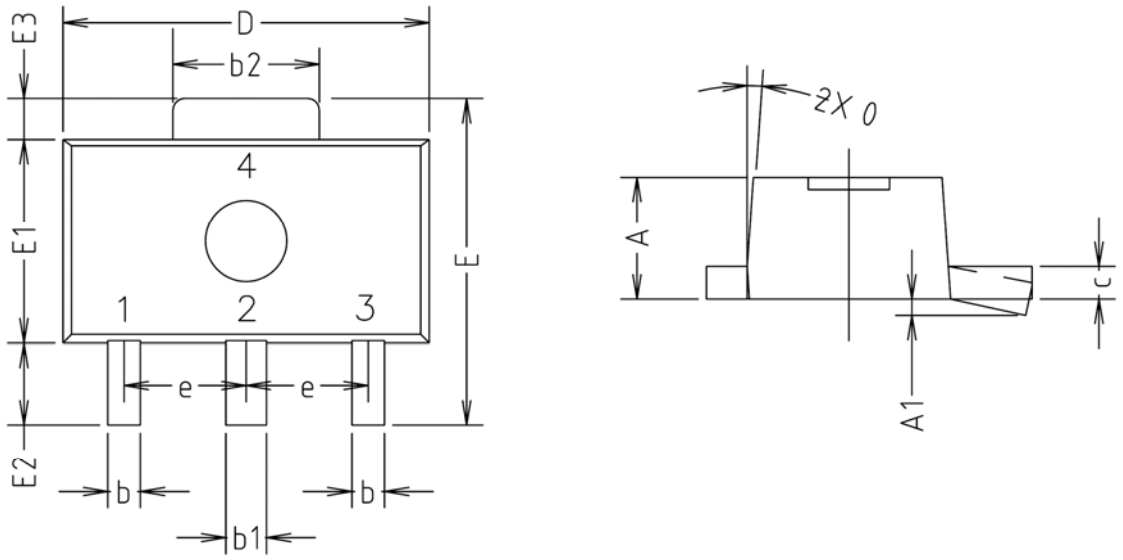


Fig. 14 Safe operating area

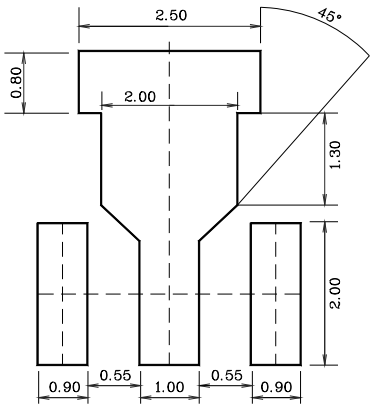


Outline Dimension (Unit : mm)



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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