

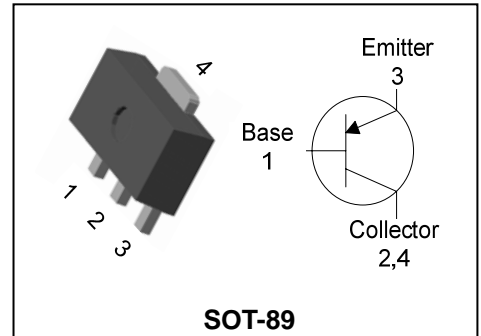
Applications

- Power amplifier application
- High current switching application

Features

- Low saturation voltage:
 $V_{CE(sat)} = -0.15V$ Typ @ $I_C = -1A$, $I_B = -50mA$
- Large collector current capacity: $I_C = -2A$
- Small and compact SMD type package
- Complementary pair with STC4250F

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STA3250F	HW1 YWW	SOT-89

HW1: DEVICE CODE, YWW(Y : Year code, WW : Weekly code)

Absolute Maximum Ratings

[Ta=25°C]

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-2	A
Collector Power dissipation	P_C	0.5	W
	P_C^*	1	W
Junction temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55~150	°C

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

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

Electrical Characteristics

[Ta=25°C]

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-50	-	-	V	
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$	-	-	-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}	$V_{CE} = -2\text{V}, I_C = -0.5\text{A}^*$	120	-	240		
	h_{FE}	$V_{CE} = -2\text{V}, I_C = -1.5\text{A}^*$	40	-	-		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1\text{A}, I_B = -0.05\text{A}^*$	-	-	-0.35	V	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -1\text{A}, I_B = -0.05\text{A}^*$	-	-	-1.2	V	
Transition frequency	f_T	$V_{CE} = -2\text{V}, I_C = -0.05\text{A}$	-	215	-	MHz	
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	24	-	pF	
Switching Time	Turn-on Time	t_{on}		-	100	-	nS
	Storage Time	t_{stg}		-	300	-	
	Fall Time	t_f		-	50	-	

*: Pulse test : $t_p \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

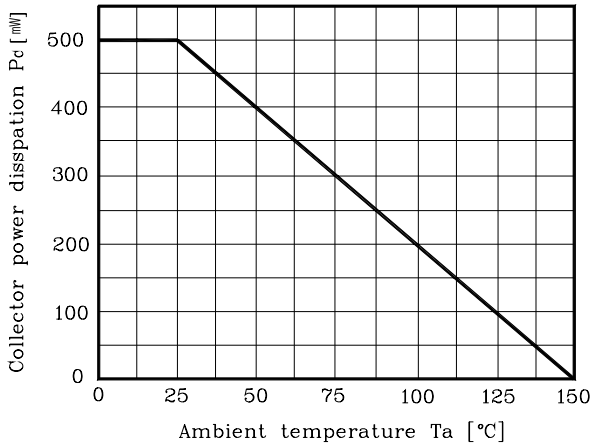


Fig. 2 $I_C - V_{BE}$

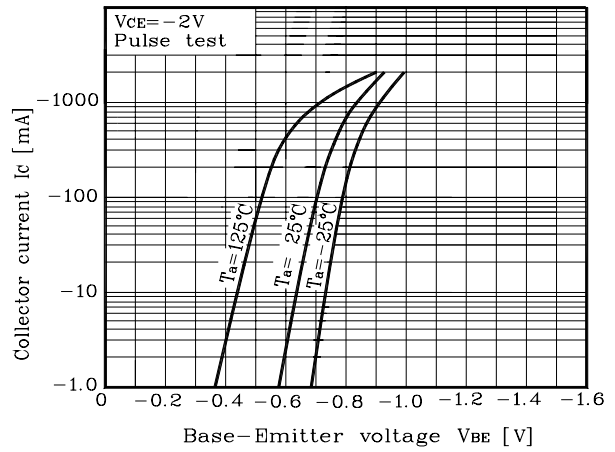


Fig. 3 $I_C - V_{CE}$

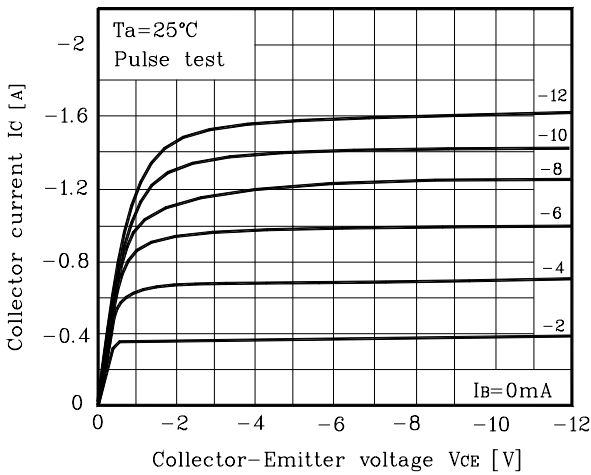


Fig. 4 $h_{FE} - I_C$

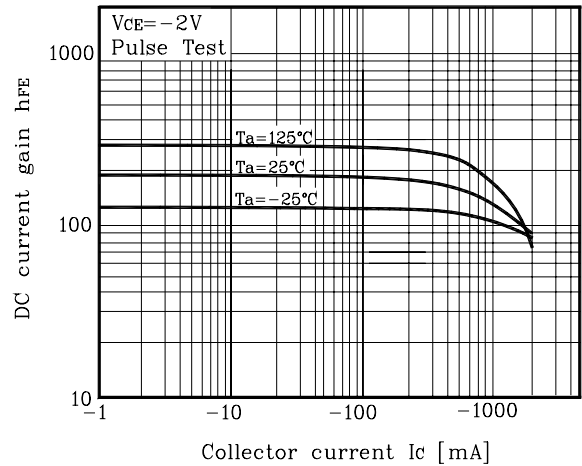


Fig. 5 $V_{CE(sat)} - I_C$

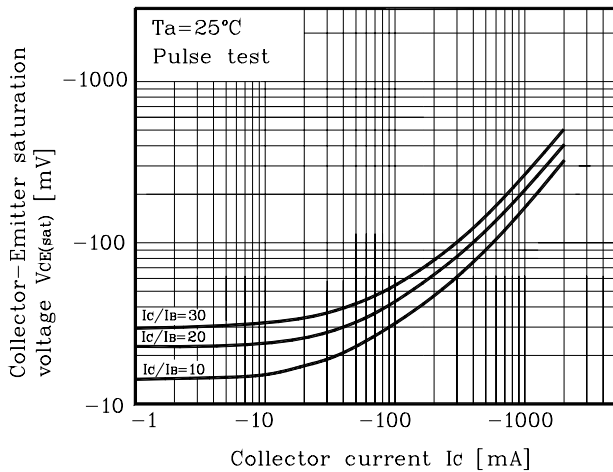
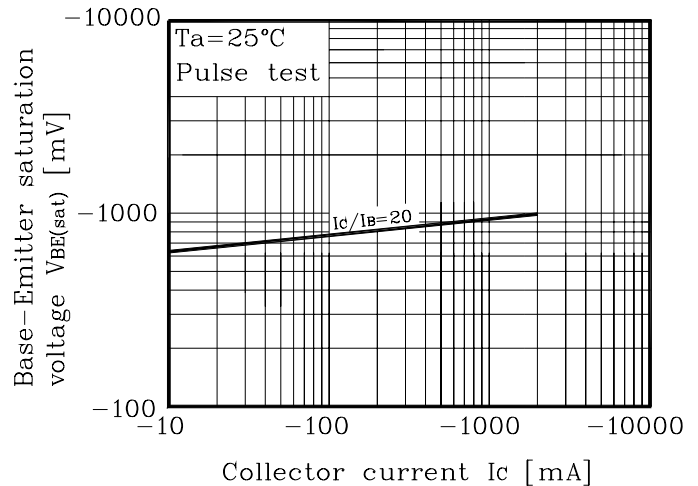


Fig. 6 $V_{BE(sat)} - I_C$



Electrical Characteristic Curves

Fig. 7 $C_{ob} - V_{CB}$

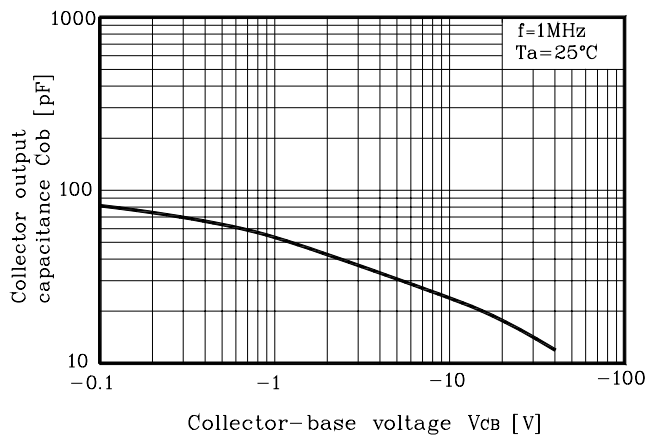
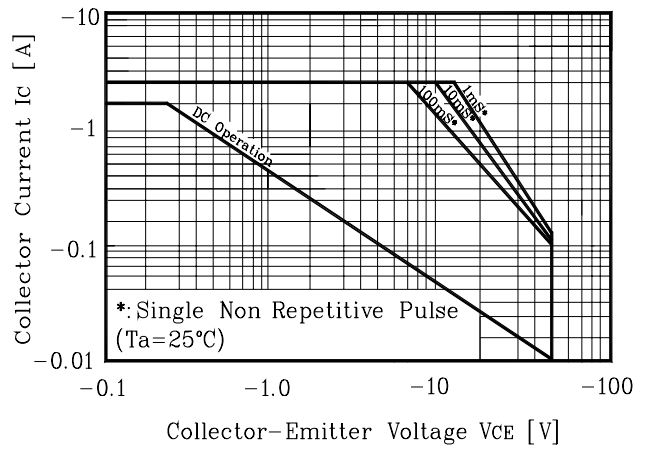
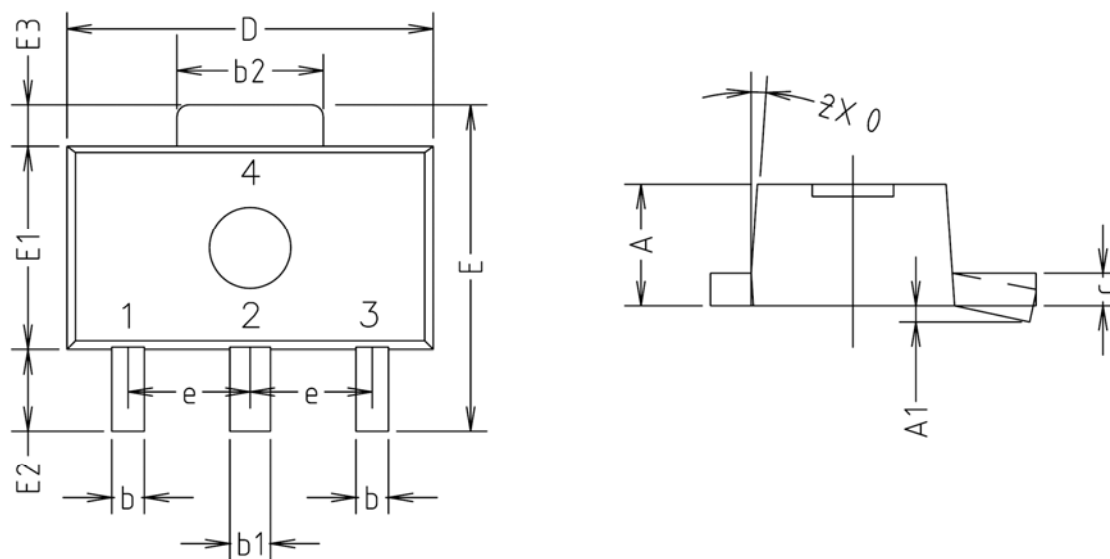


Fig. 8 Safe Operating Area

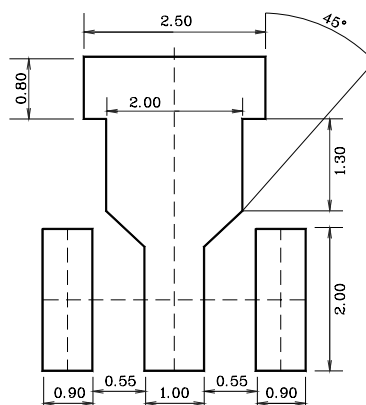


Outline Dimension(mm)



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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