

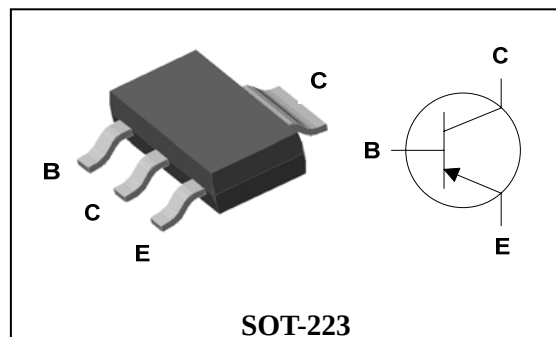
Applications

- 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

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STA3250Q	STA3250□	SOT-223

□ : Year & Week Code

Absolute Maximum Ratings

[Ta=25℃]

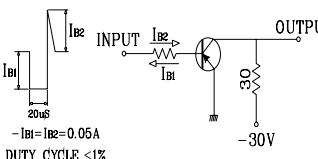
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-2	A
Collector Power dissipation	P_C	1.1	W
	P_C^*	1.5	W
Junction temperature	T_J	150	℃
Storage temperature range	T_{stg}	-55~150	℃

Characteristic		Symbol	Typ.	Max	Unit
Thermal resistance	Junction-ambient	$R_{th(J-A)}$	-	113.6	℃/W
		$R_{th(J-A)}^*$	-	83.3	

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

Electrical Characteristics

[Ta=25℃]

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage		BV_{CEO}	$I_C = -1mA, I_B = 0$	-50	-	-	V
Collector cut-off current		I_{CBO}	$V_{CB} = -50V, I_E = 0$	-	-	-0.1	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = -5V, I_C = 0$	-	-	-0.1	μA
DC current gain		h_{FE}	$V_{CE} = -2V, I_C = -0.5A^*$	120	-	240	
		h_{FE}	$V_{CE} = -2V, I_C = -1.5A^*$	40	-	-	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -1A, I_B = -0.05A^*$	-	-	-0.35	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = -1A, I_B = -0.05A^*$	-	-	-1.2	V
Transition frequency		f_T	$V_{CE} = -2V, I_C = -0.05A$	-	215	-	MHz
Collector output capacitance		C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	24	-	pF
Switching Time	Turn-on Time	t_{on}	 $-I_{B1} = I_{B2} = 0.05A$ DUTY CYCLE $\leq 1\%$	-	100	-	nS
	Storage Time	t_{stg}		-	300	-	
	Fall Time	t_f		-	50	-	

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

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

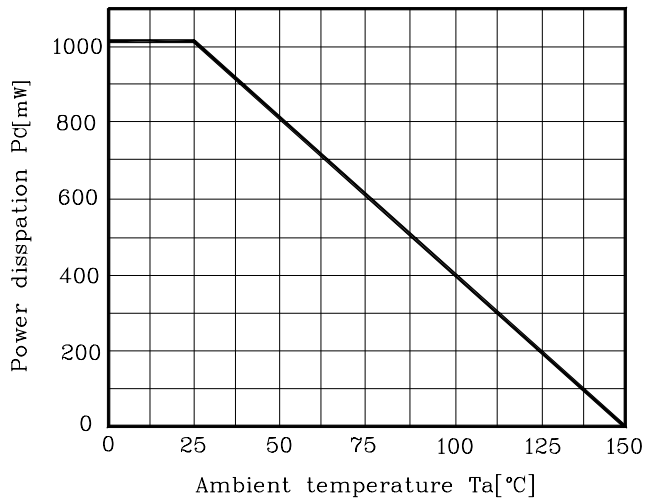


Fig. 2 $I_C - V_{BE}$

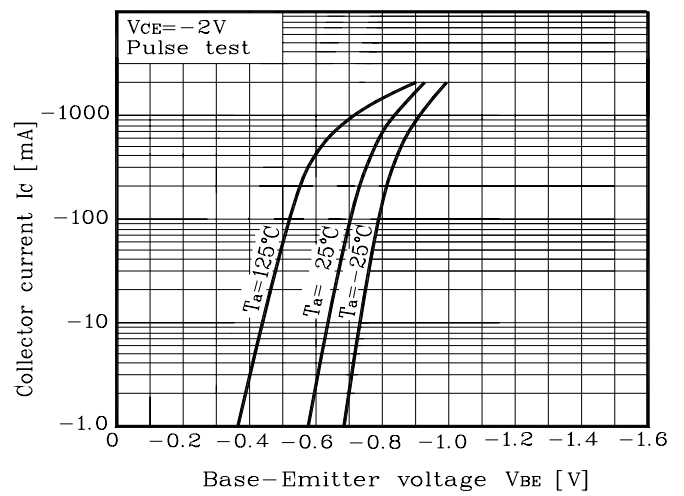


Fig. 3 $I_C - V_{CE}$

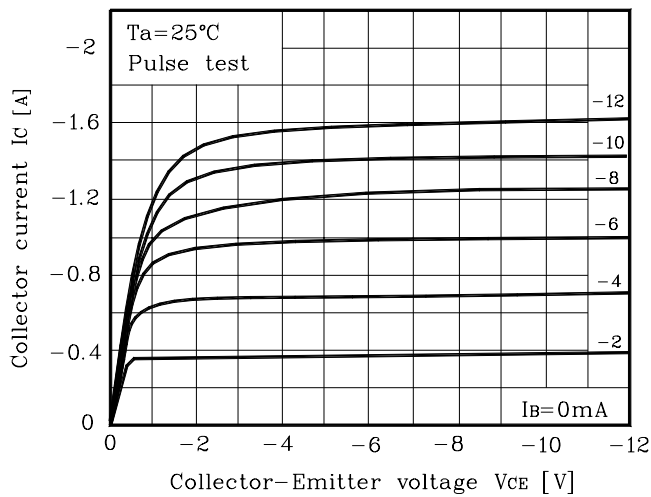


Fig. 4 $h_{FE} - I_C$

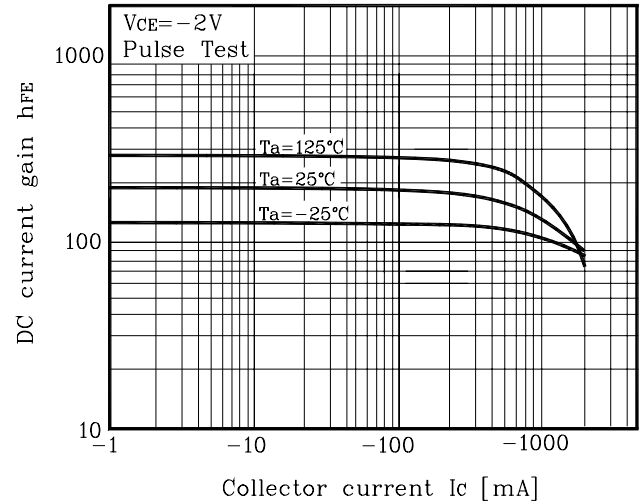


Fig. 5 $V_{CE(sat)} - I_C$

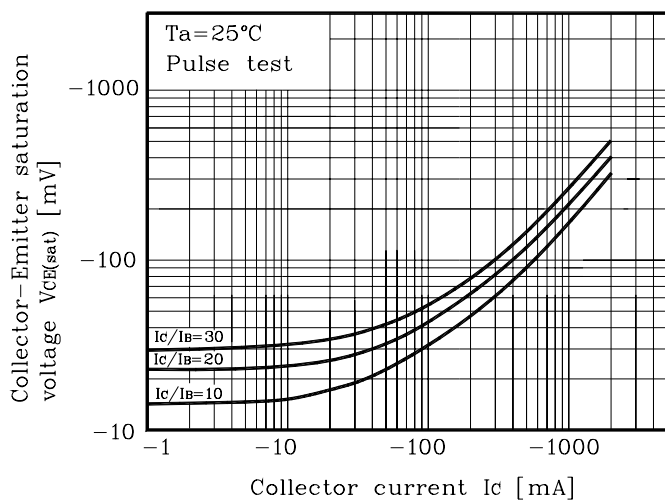
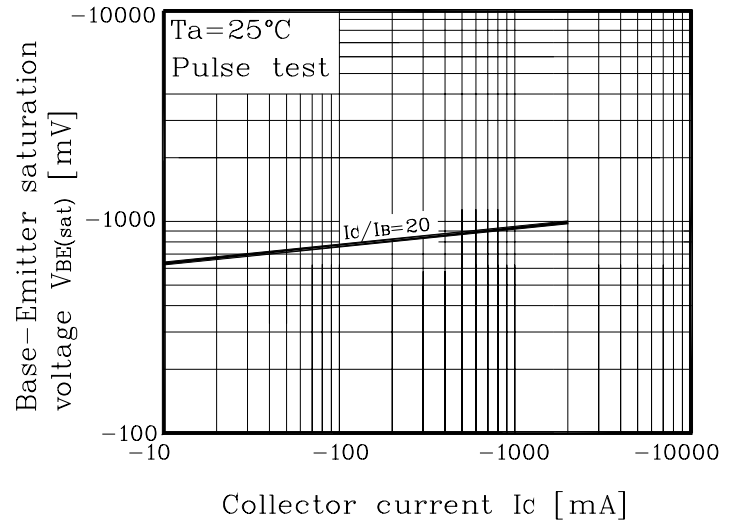


Fig. 6 $V_{BE(sat)} - I_C$



Electrical Characteristic Curves

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

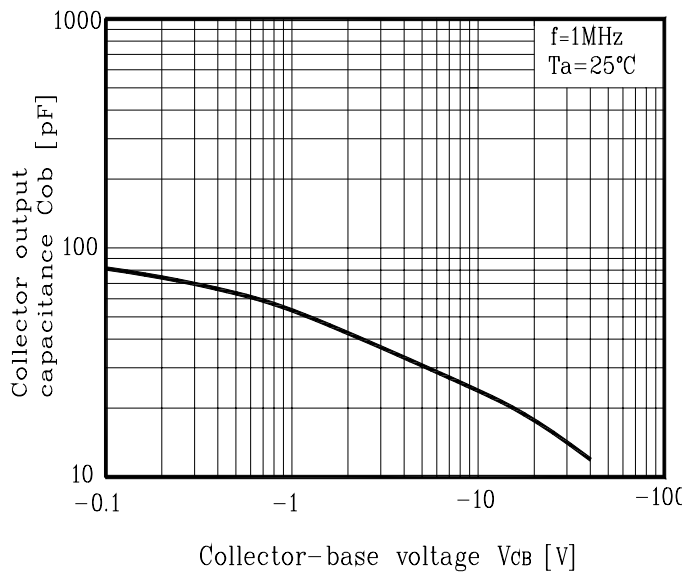
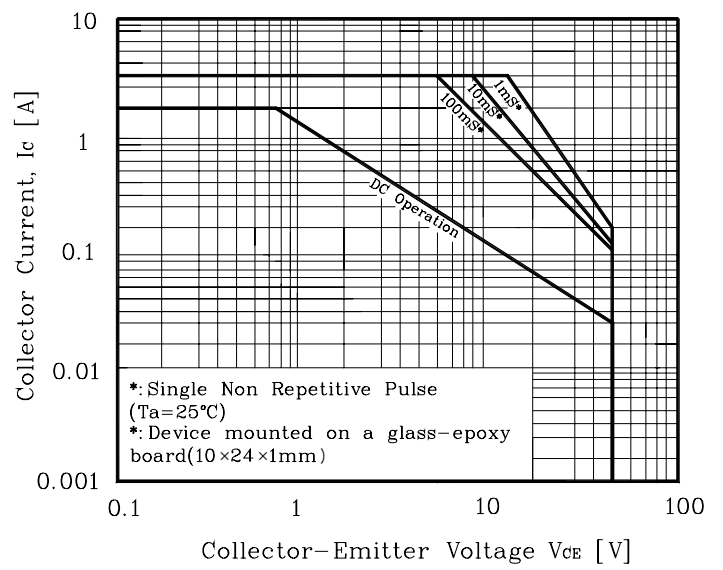
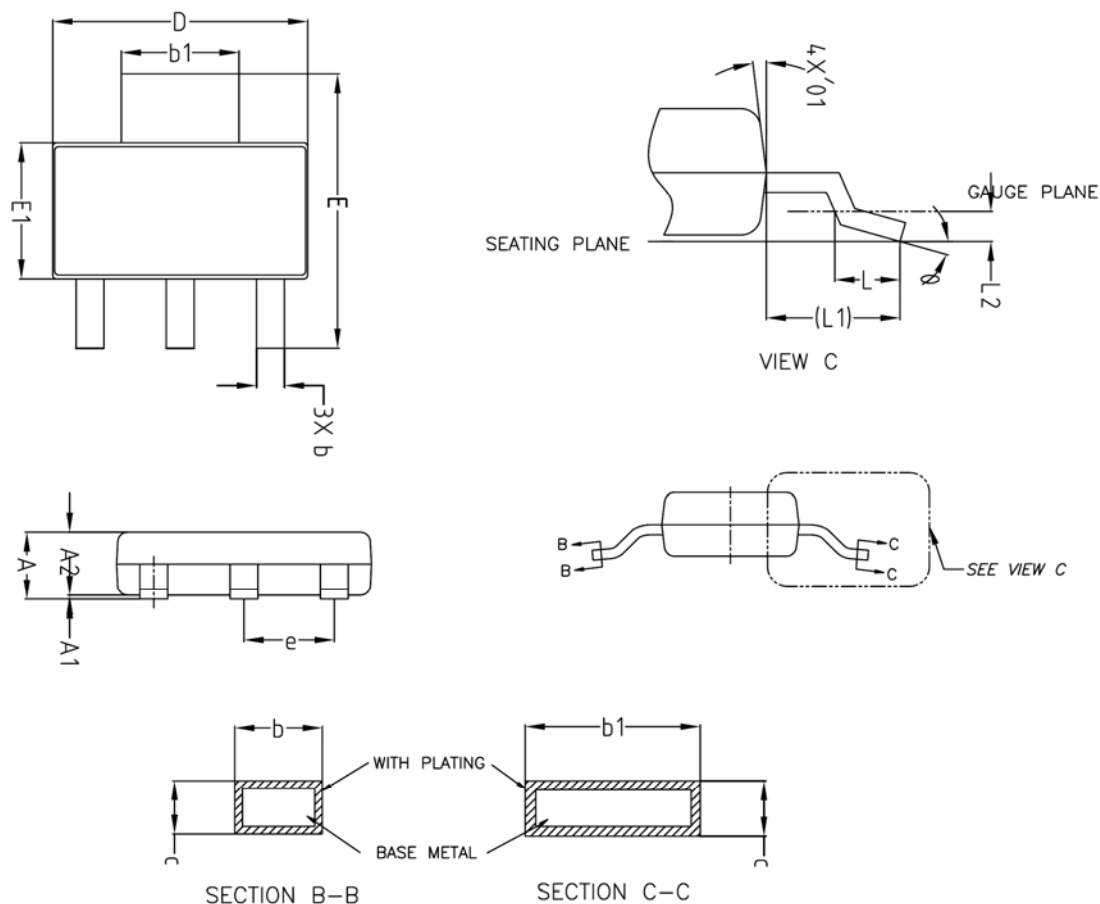


Fig. 8 Safe Operating Area

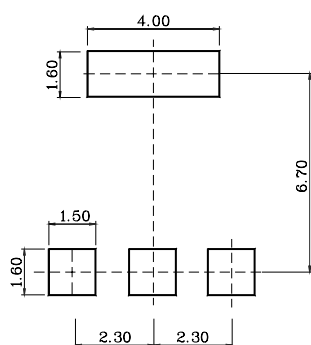


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	—	—	1.80	
A1	0.00	—	0.10	
A2	1.60	1.65	1.70	
b	0.68	—	0.76	
b1	2.95	—	3.07	
c	0.23	—	0.28	
D	6.40	6.50	6.60	
E	6.80	7.00	7.20	
E1	3.40	3.50	3.60	
e	2.30 BSC			
L	0.45	—	0.65	
L1	1.75 REF			
L2	0.10 BSC			
θ	0°	—	10°	
θ1	5°	—	10°	

※ Recommend PCB solder land [Unit: mm]



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