

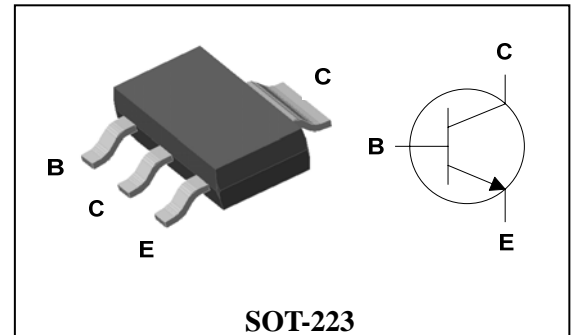
Applications

- Power amplifier application
- High current switching application

Features

- Power transistor General Purpose application
- Low saturation voltage
: $V_{CE(sat)}=0.4V(Typ.)$
- High Voltage: $V_{CEO}= 60V$ Min

PIN Connection



Ordering Information

Type No.	Marking	Package Code
STC403Q	STC403□	SOT-223

□ : Year & Week Code

Absolute Maximum Ratings

[Ta=25°C]

Characteristic	Symbol	Rating	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	3	A(DC)
	I_{CP}^*	6	A(Pulse)
Collector Power dissipation	P_C	1.1	W
	P_C^{**}	1.5	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C

* : Single pulse, $t_p= 300 \mu s$

** : When mounted on ceramic substrate($250 \text{ mm}^2 \times 0.8t$)

Electrical Characteristics

(Ta=25°C)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter breakdown voltage		BV_{CEO}	$I_C=50mA, I_B=0$	60	-	-	V
Collector cut-off current		I_{CBO}	$V_{CB}=60V, I_E=0$	-	-	50	μA
Emitter cut-off current		I_{EBO}	$V_{EB}=5V, I_C=0$	-	-	50	μA
DC current gain		h_{FE}^*	$V_{CE}=5V, I_C=0.5A$	200	-	400	-
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	$V_{CB}=5V, I_C=0.5A$	-	30	-	MHz
Collector output capacitance		C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	-	35	-	pF
Switching Time	Turn-on Time	t_{on}	<p> $I_{B1} = -I_{B2} = 0.2A$ DUTY CYCLE $\leq 1\%$ </p>	-	0.65	-	μS
	Storage Time	t_{stg}		-	1.3	-	
	Fall Time	t_f		-	0.65	-	

* hFE rank : 200~400 Only

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

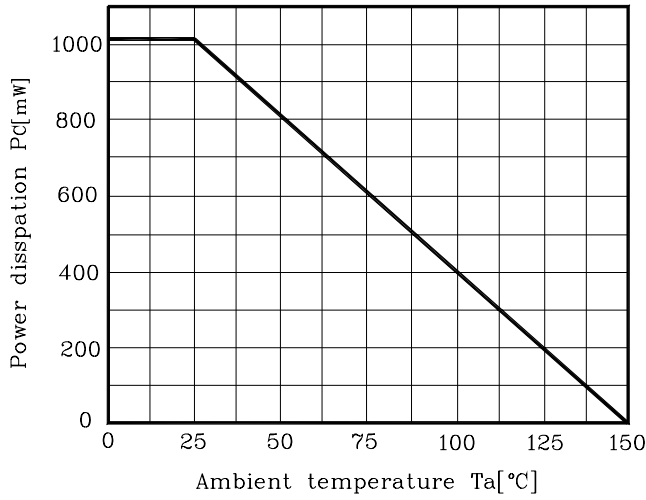


Fig. 2 $V_{CE} - I_C$

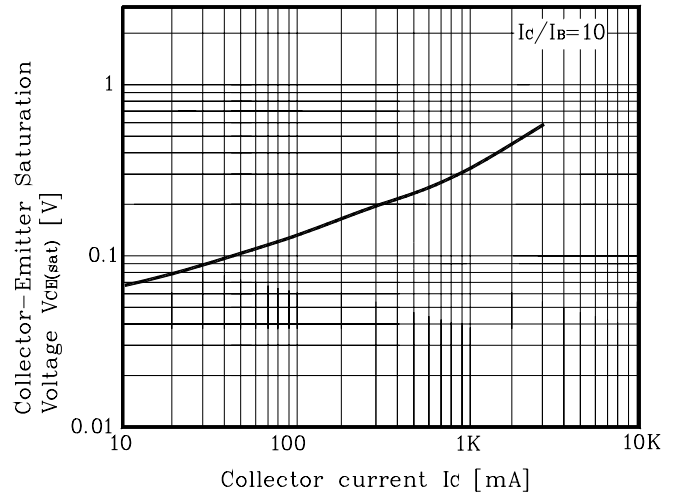


Fig. 3 $h_{FE} - I_C$

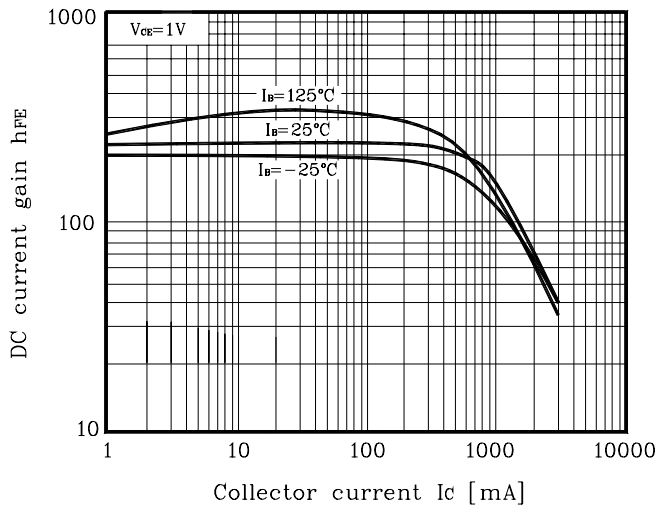


Fig. 4 $h_{FE} - I_C$

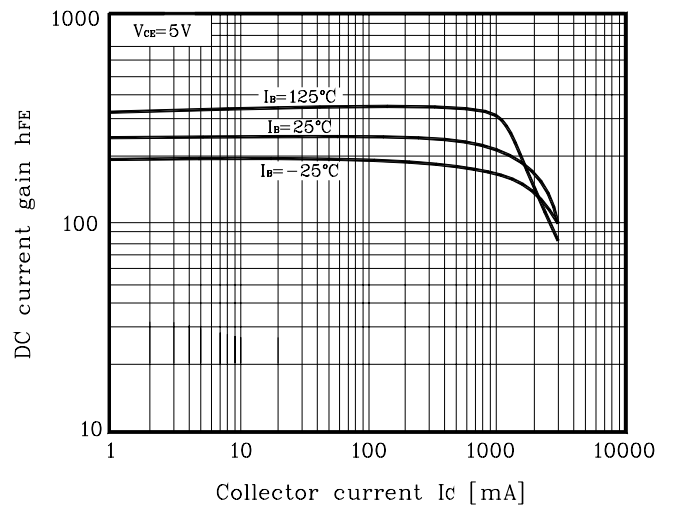


Fig. 5 $I_C - V_{CE}$

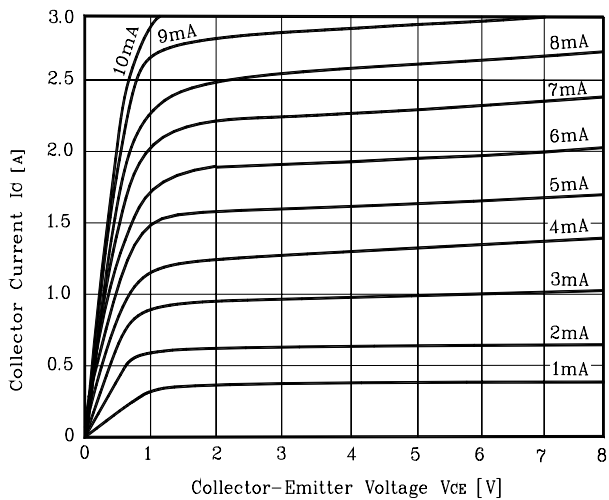
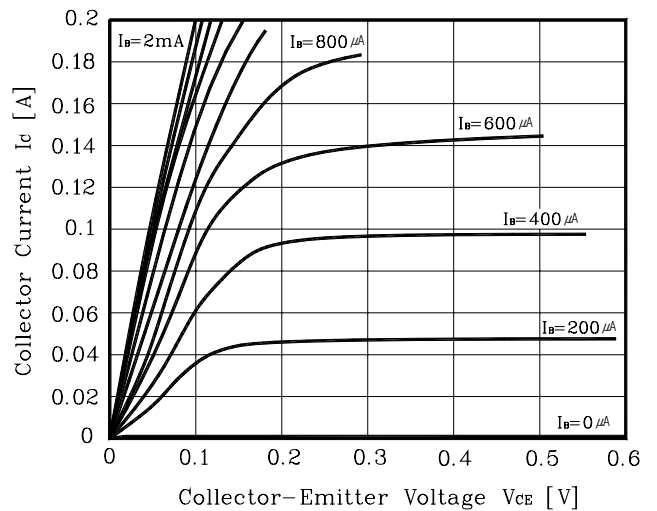
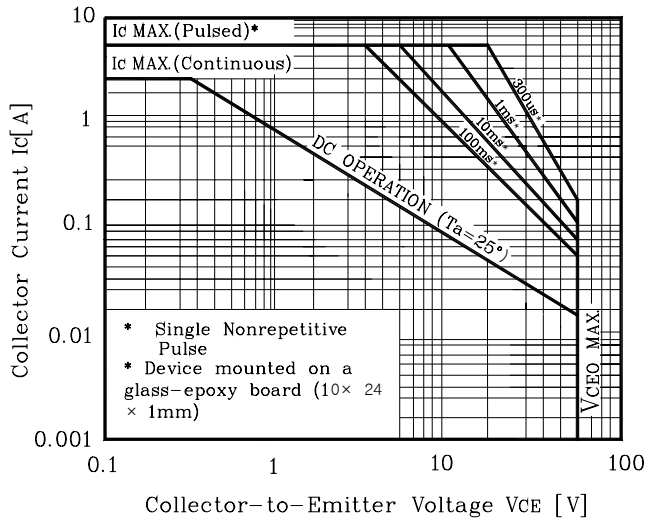


Fig. 6 $I_C - V_{CE}$

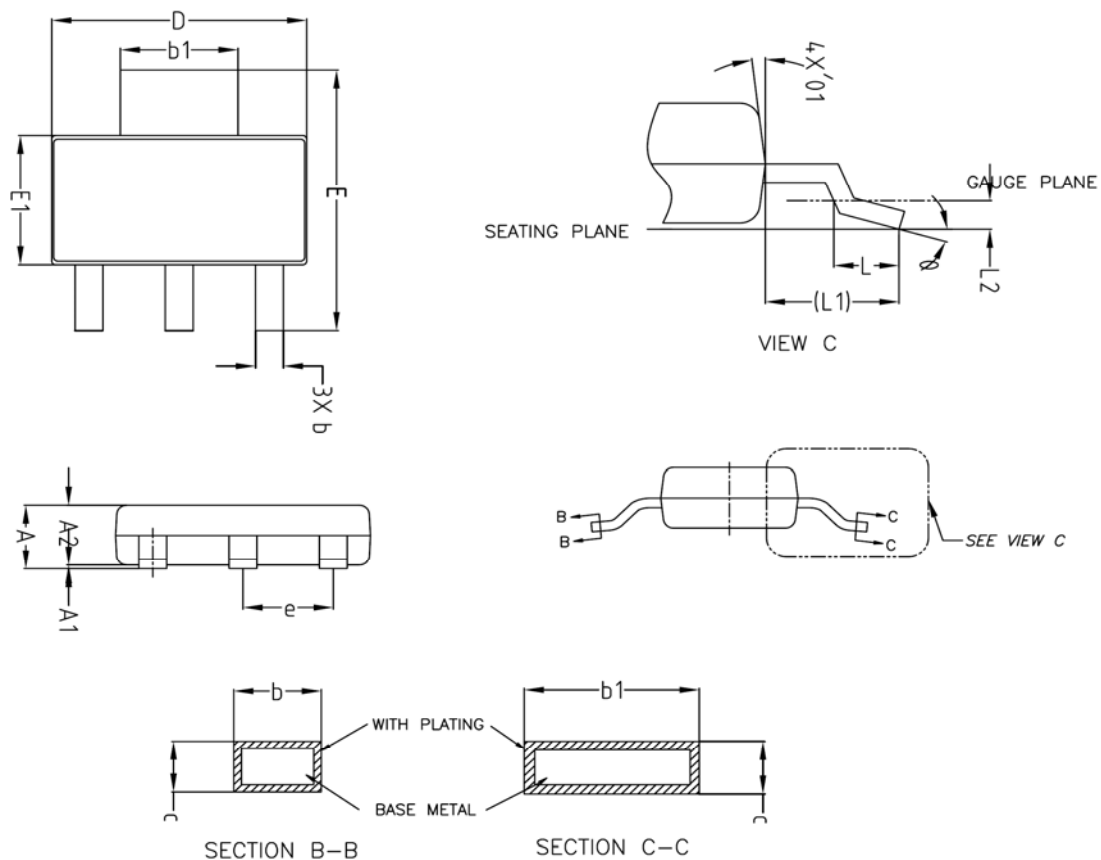


Electrical Characteristic Curves

Fig. 7 Safe operating Area

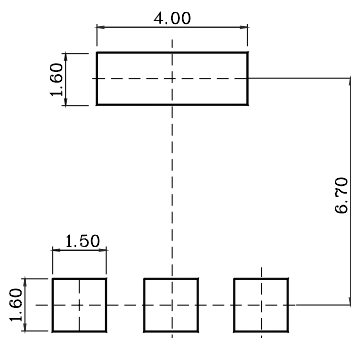


Outline Dimension



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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