

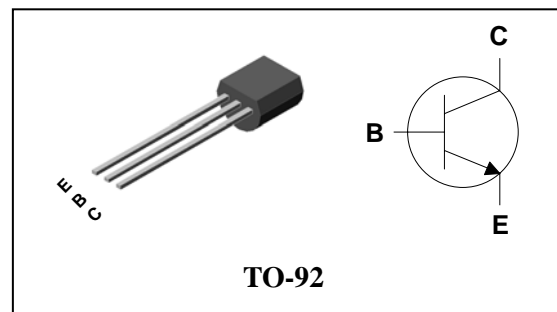
Description

- General purpose amplifier
- High voltage application

Features

- Low saturation switching application
- Voltage regulator application
- Low saturation : $V_{CE(SAT)} = 0.4V$ Max.
- High Voltage : $V_{CEO} = 60V$ Min.

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STC411	STC411	TO-92

Absolute maximum ratings

Characteristic	Symbol	Ratings	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	1	A(DC)
	I_{CP}^*	2	A(Pulse)
Collector dissipation	P_C	500	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C

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

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C = 100 \mu A, I_E = 0$	80	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	60	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E = 10mA, I_C = 0$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 60V, I_E = 0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	-	-	0.1	μA
DC current gain	h_{FE}^*	$V_{CE} = 2V, I_C = 100mA$	200	-	400	-
		$V_{CE} = 2V, I_C = 1A$	80	-	-	-
Base-Emitter on voltage	$V_{BE(ON)}$	$V_{CE} = 2V, I_C = 500mA$	-	-	1.2	V
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$	-	-	0.4	V
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	10	-	pF
Transition frequency	f_T	$V_{CB} = 10V, I_C = 50mA$	-	160	-	MHz

* h_{FE} rank : 200~400 Only

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

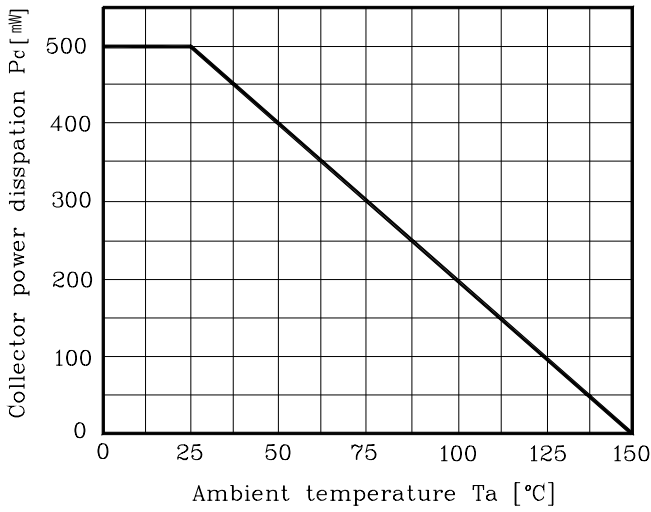


Fig. 2 $V_{CE} - I_C$

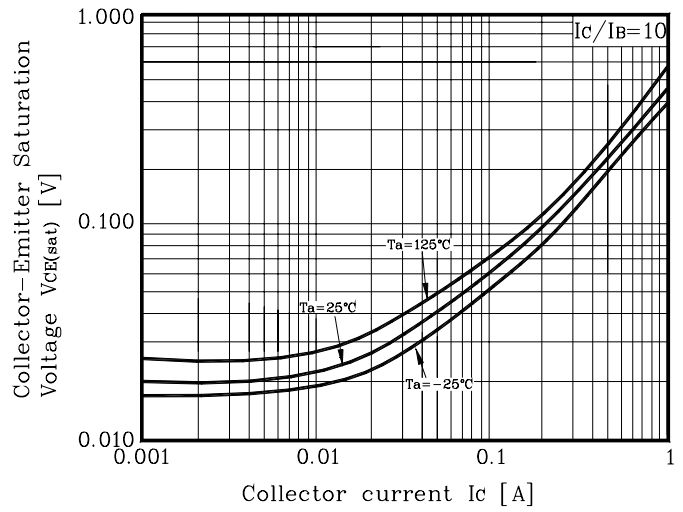


Fig. 3 $h_{FE} - I_C$

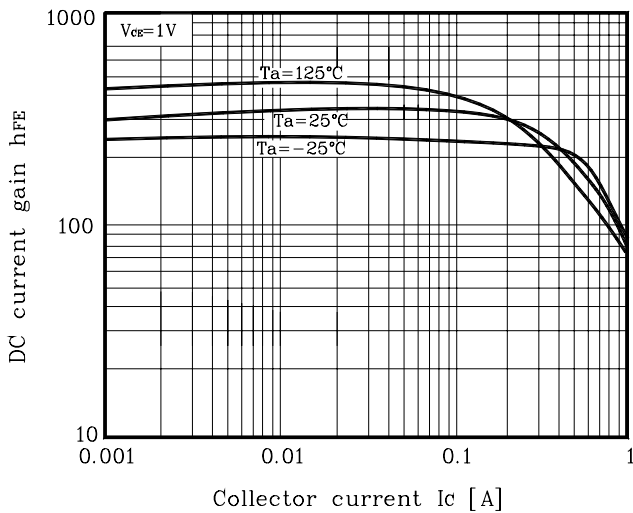


Fig. 4 $h_{FE} - I_C$

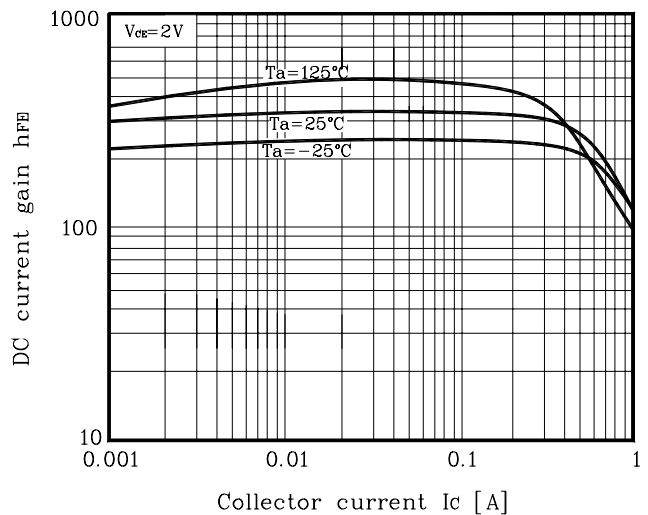


Fig. 5 $h_{FE} - I_C$

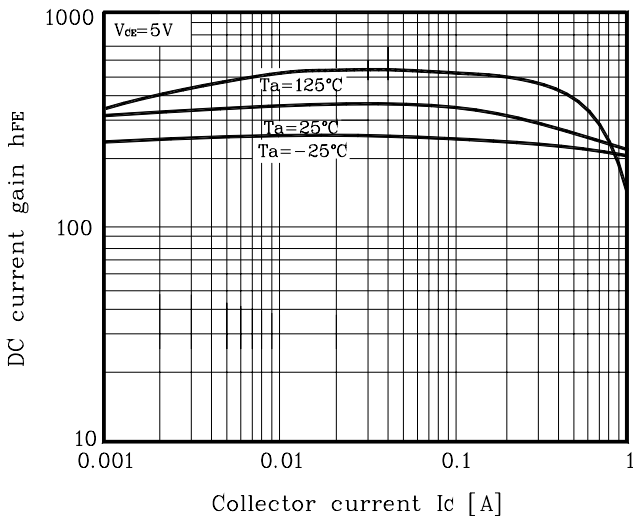
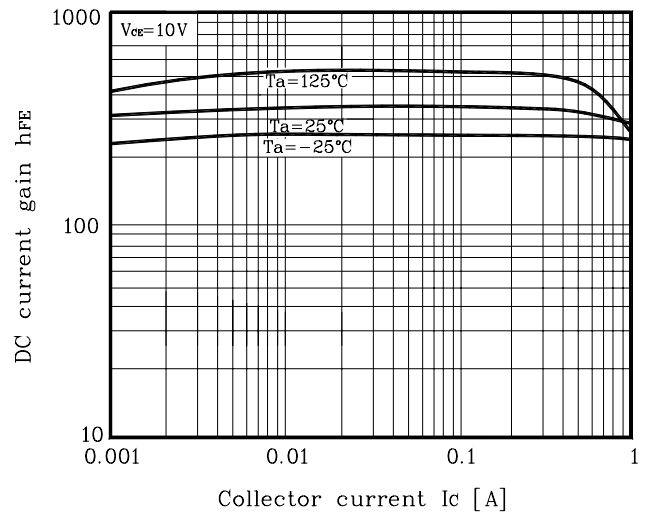


Fig. 6 $h_{FE} - I_C$



Electrical Characteristic Curves

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

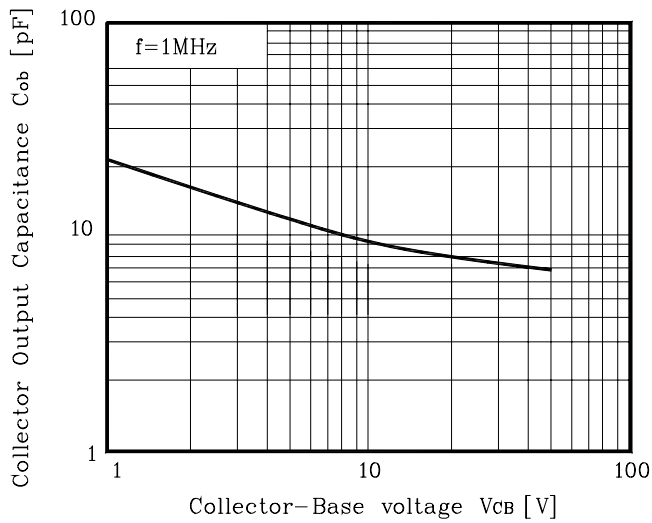


Fig. 8 $I_C - V_{CE}$

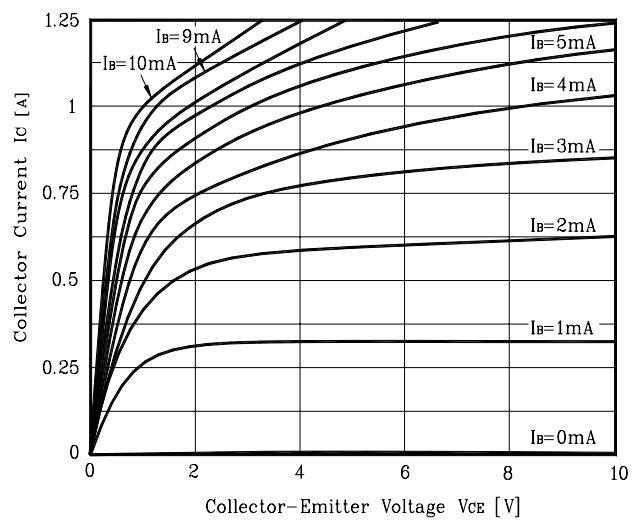


Fig. 9 $f_T - I_C$

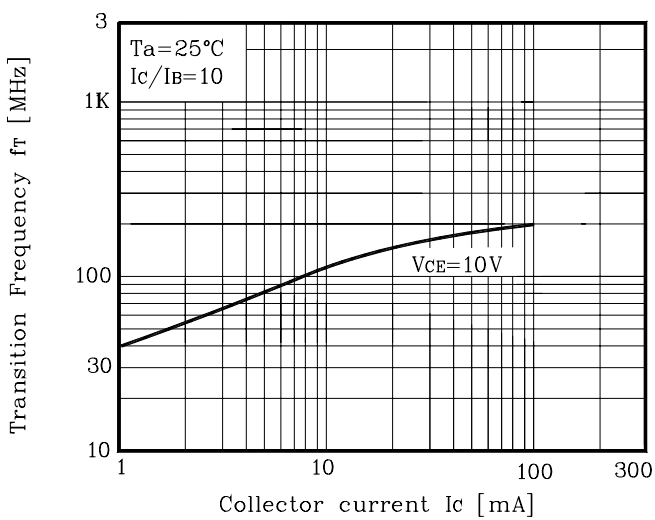
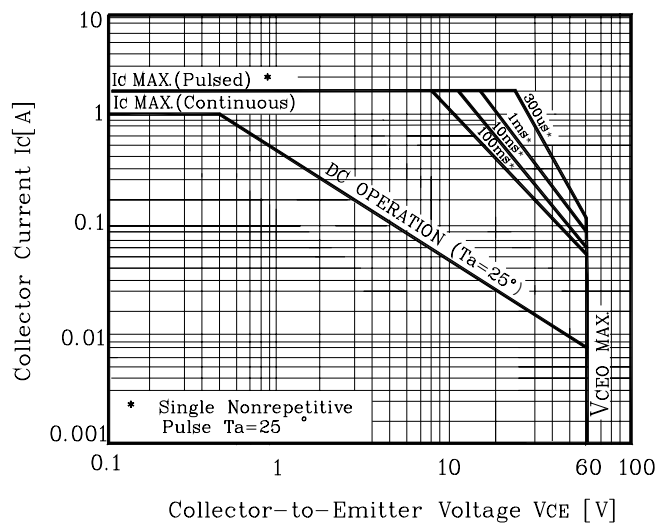
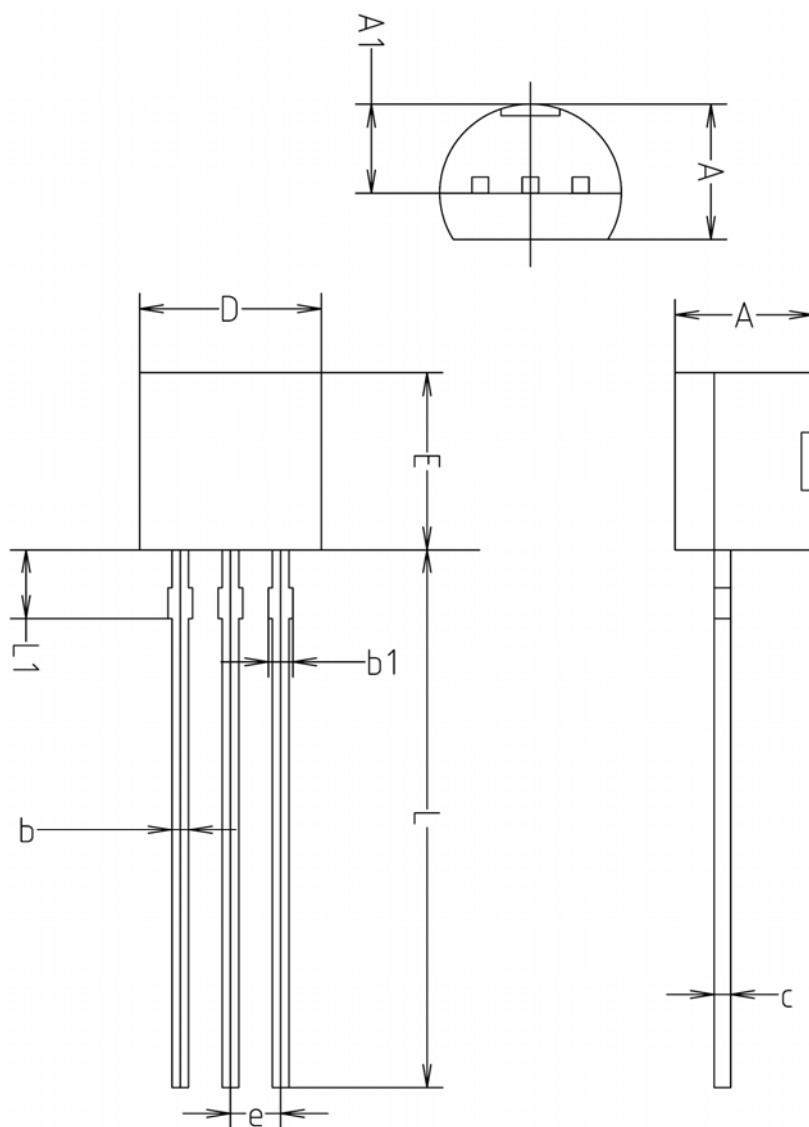


Fig. 10 Safe operating Area



Outline Dimension



SYMBOL	MILLMETERS(mm)		
	MINIMUM	NOMINAL	MAXIMUM
A	3.40	3.50	3.66
A1	2.46	2.51	2.59
b	0.39	0.44	0.53
b1	0.39	—	0.63
c	0.35	0.42	0.47
D	4.48	4.60	4.70
E	4.48	4.60	4.70
e	1.17	1.27	1.37
L	13.70	14.00	14.77
L1	1.55	1.70	2.15

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