

### Descriptions

- High voltage application
- Telephone application

### Features

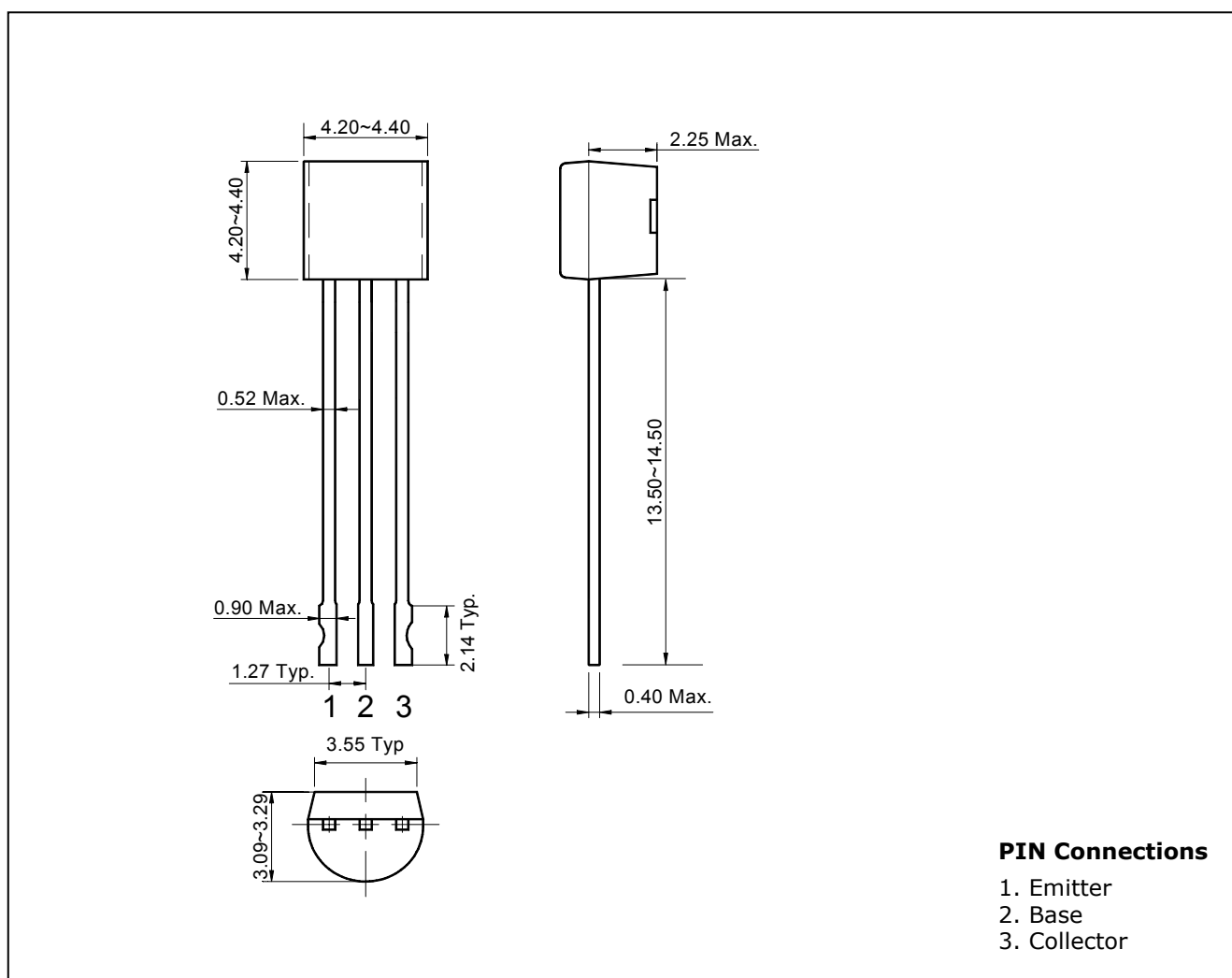
- High collector-emitter voltage :  $BV_{CE0}=300V$
- Complementary pair with STA92N

### Ordering Information

Type NO.	Marking	Package Code
STC42N	STC42	TO-92N

### Outline Dimensions

unit : mm



**Absolute Maximum Ratings**

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	300	V
Collector-emitter voltage	$V_{CEO}$	300	V
Emitter-base voltage	$V_{EBO}$	6	V
Collector current	$I_C$	500	mA
Collector power dissipation	$P_C$	400	mW
Junction temperature	$T_J$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

**Electrical Characteristics**

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C=1mA, I_B=0$	300	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=300V, I_E=0$	-	-	0.1	μA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6V, I_C=0$	-	-	0.1	μA
DC current gain	$h_{FE}^*$	$V_{CE}=10V, I_C=30mA$	40	-	-	-
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=20mA, I_B=2mA$	-	-	0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=20mA, I_B=2mA$	-	-	0.9	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=10V, I_C=30mA$	-	0.7	0.9	V
Transition frequency	$f_T$	$V_{CE}=20V, I_C=10mA$	-	130	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=20V, I_E=0, f=1MHz$	-	2	-	pF

\* : Pulse Tester : Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

Electrical Characteristic Curves

Fig. 1  $P_c - T_a$

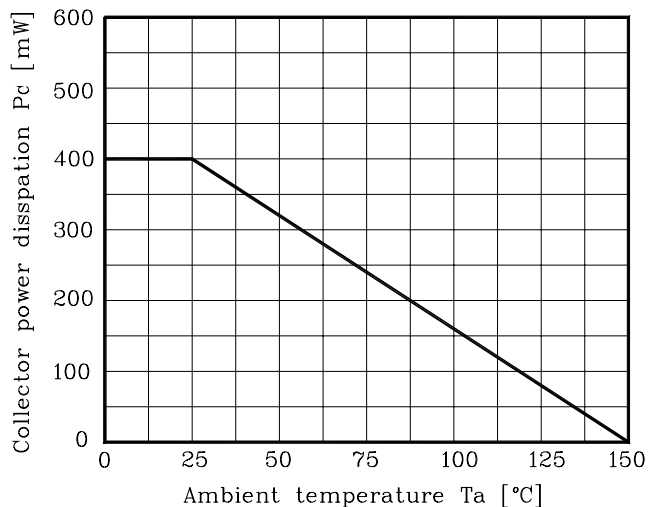


Fig. 2  $V_{CE(sat)}, V_{BE(sat)} - I_C$

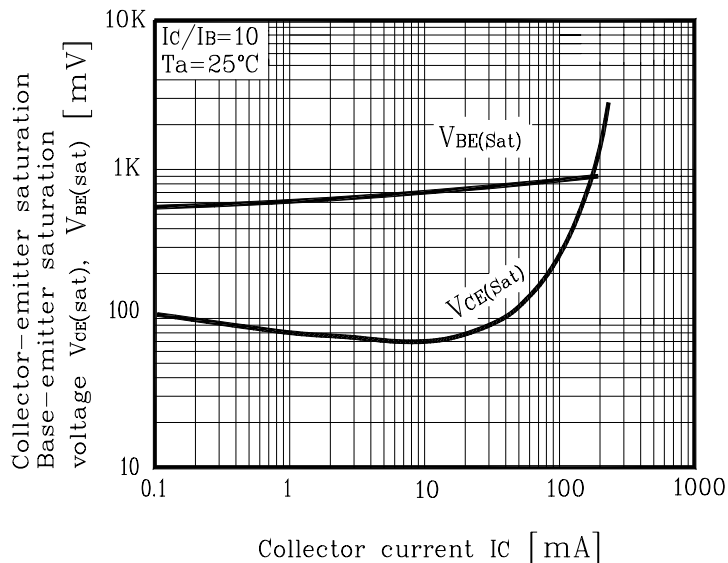


Fig. 3  $f_T - I_C$

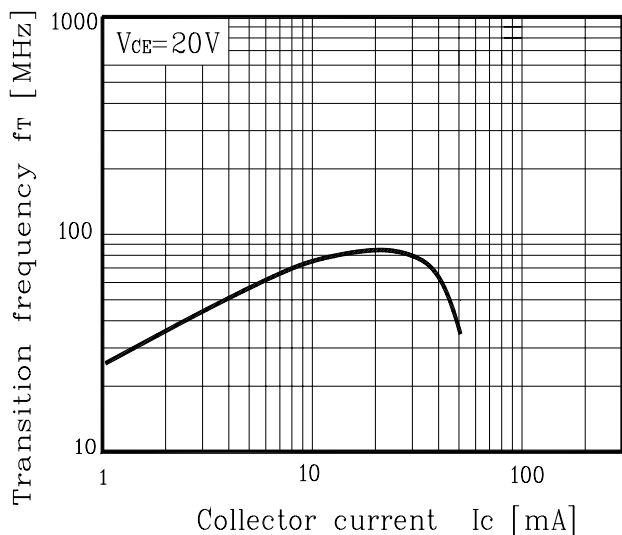


Fig. 4  $C_{ob} - V_{CB}$

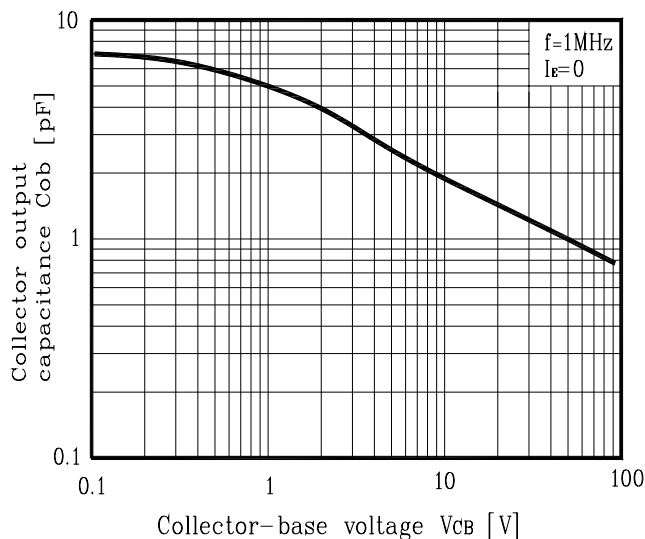
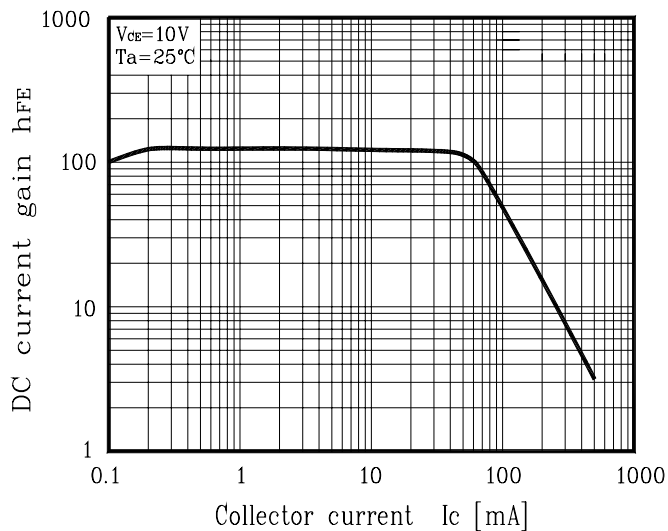


Fig. 5  $h_{FE} - I_C$



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