

**Description**

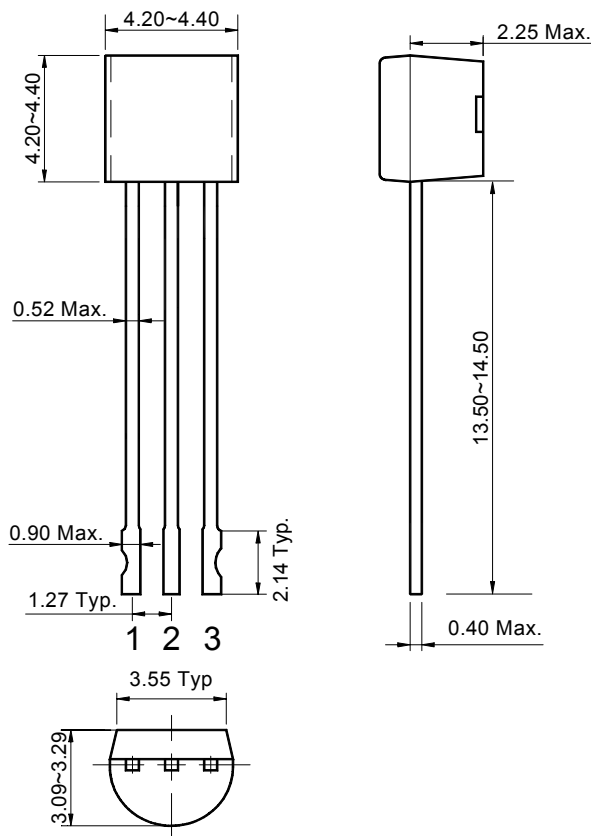
- General purpose application
- Switching application

**Features**

- Excellent  $h_{FE}$  linearity
- Complementary pair with STC9013N

**Ordering Information**

Type NO.	Marking	Package Code
STA9012N	STA9012	TO-92N



**PIN Connections**

1. Emitter
2. Base
3. Collector

## Absolute Maximum Ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-40	V
Collector-emitter voltage	$V_{CEO}$	-30	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-500	mA
Collector power dissipation	$P_C$	500	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	$BV_{CEO}$	$I_C = -1\text{mA}, I_B = 0$	-30	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -40\text{V}, I_E = 0$	-	-	-0.1	μA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-0.1	μA
DC current gain	$h_{FE}^*$	$V_{CE} = -1\text{V}, I_C = -50\text{mA}$	96	-	246	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$	-	-0.1	-0.25	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	-	-0.75	-1.0	V
Transition frequency	$f_T$	$V_{CE} = -6\text{V}, I_C = -20\text{mA}$	-	200	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -6\text{V}, I_E = 0, f = 1\text{MHz}$	-	7	-	pF

\* :  $h_{FE}$  rank / F : 96~135, G : 118~166, H : 144~202, I : 176~246.

Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

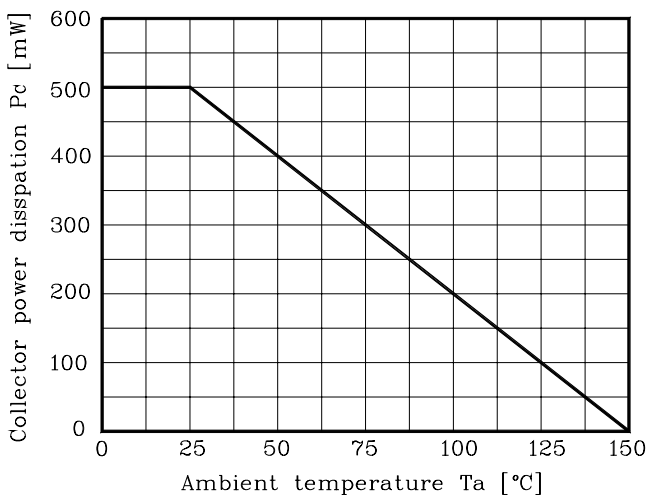


Fig. 2  $I_C - V_{BE}$

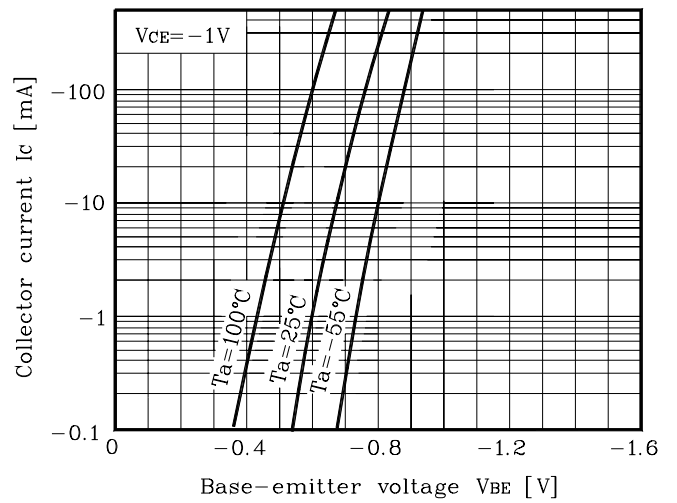


Fig. 3  $I_C - V_{CE}$

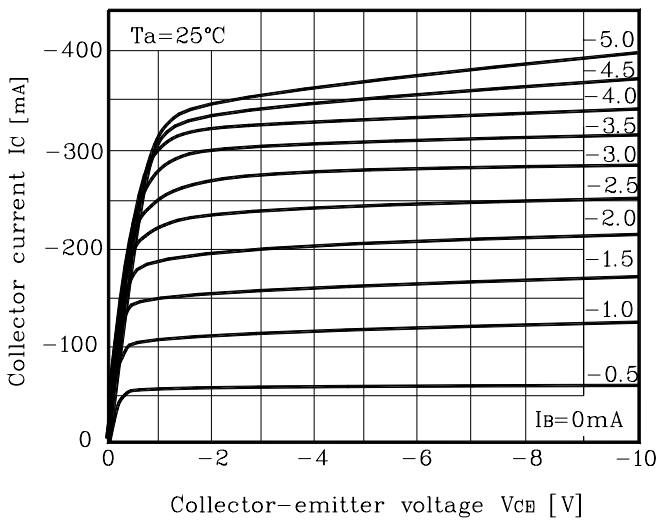


Fig. 4  $V_{CE(sat)} - I_C$

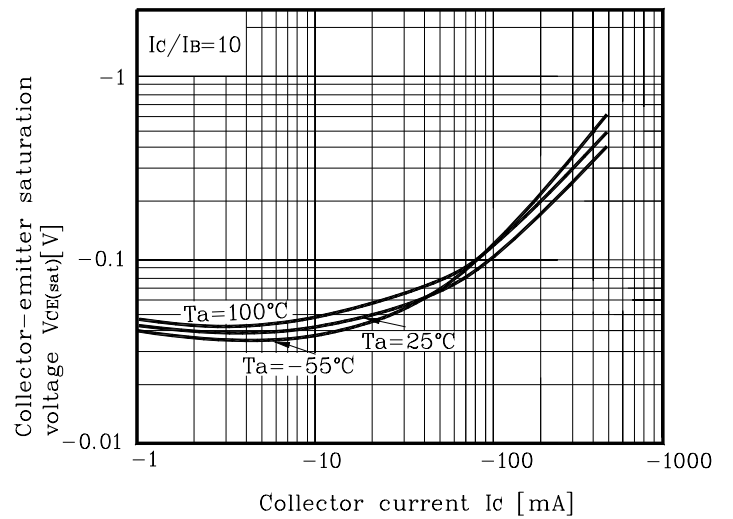


Fig. 5  $h_{FE} - I_C$

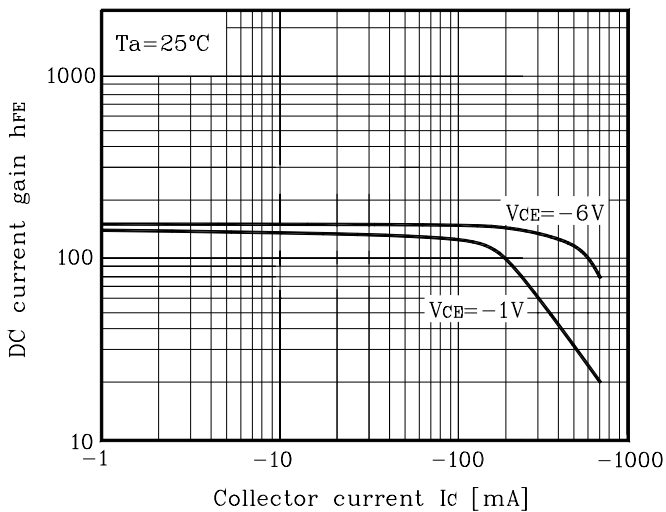
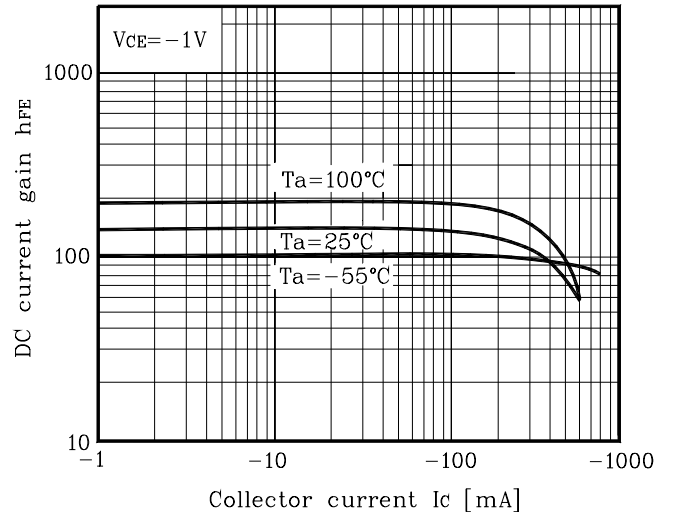


Fig. 6  $h_{FE} - I_C$



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