AUK Semiconductor

STC9013SF

Epitaxial planar NPN silicon transistor

Descriptions

- General purpose application
- Switching application

Features

- Excellent h_{FE} linearity
- Complementary pair with STA9012SF

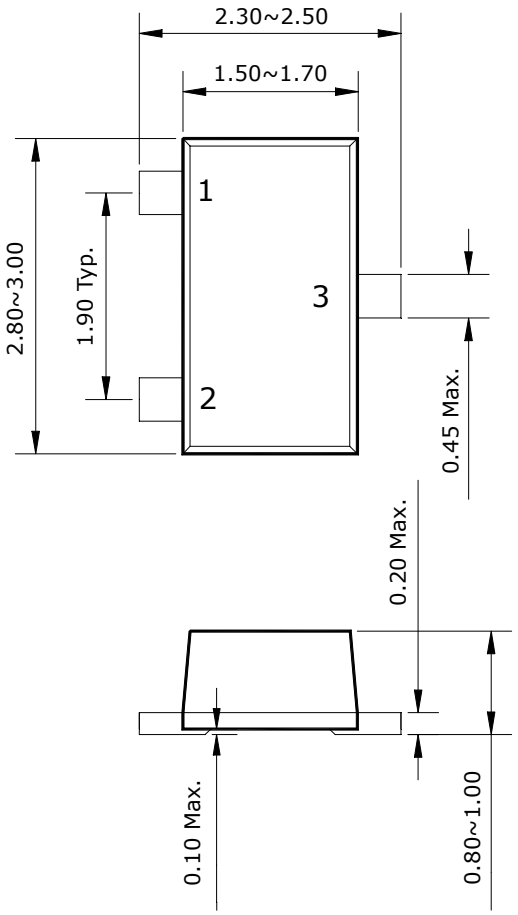
Ordering Information

Type NO.	Marking	Package Code
STC9013SF	9B□	SOT-23F

□:h_{FE} rank

Outline Dimensions

unit : mm



PIN Connections

1. Base
2. Emitter
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*	350	mW
Junction temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55~150	°C

* : Package mounted on 99.5% Alumina 10×8×0.6mm

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	30	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=40, 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}=1V, I_C=50mA	96	-	246	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA	-	0.1	0.25	V
Base-emitter voltage	V_{BE}	V_{CE}=1V, I_C=100mA	-	0.75	1.0	V
Transition frequency	f_T	V_{CE}=6V, I_C=20mA	-	200	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=6V, I_E=0, f=1MHz	-	7.0	-	pF

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

Electrical Characteristic Curves

Fig. 1 Pc - Ta

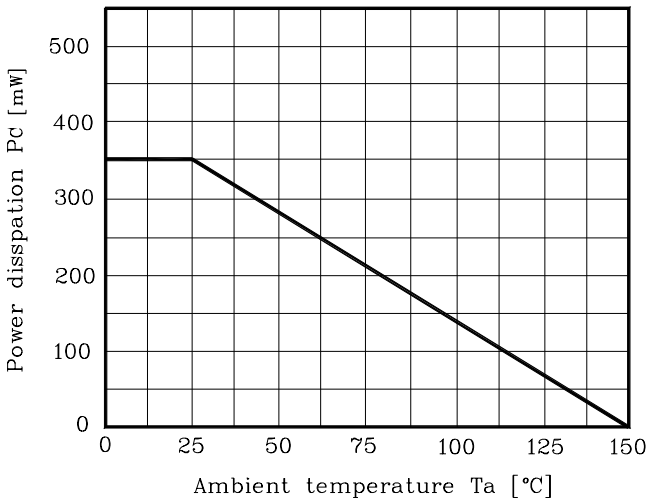


Fig. 2 I_C - V_{BE}

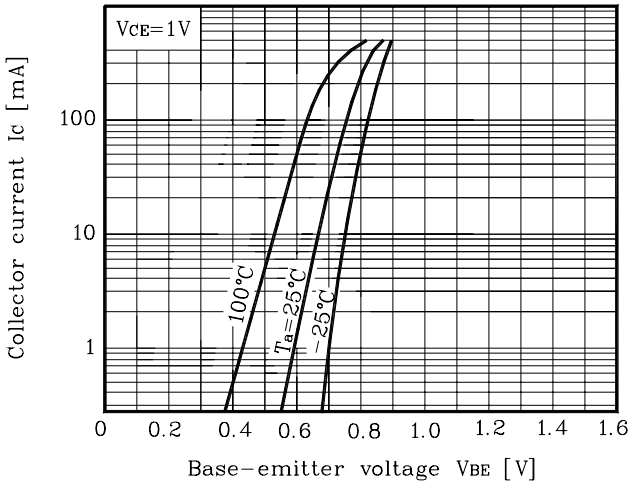


Fig. 3 I_C - V_{CE}

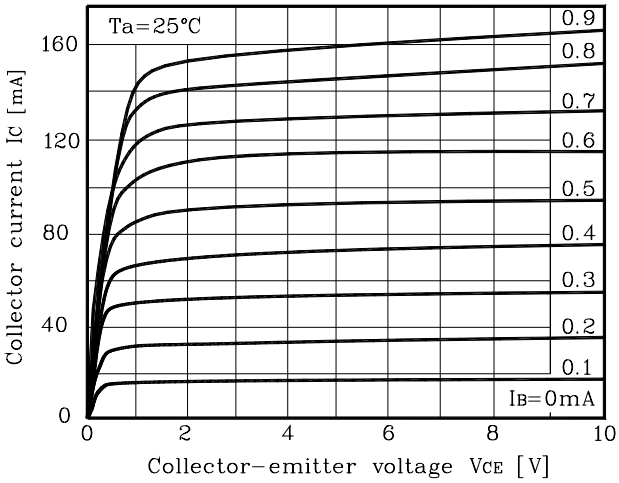


Fig. 4 $V_{CE(SAT)}$ - I_C

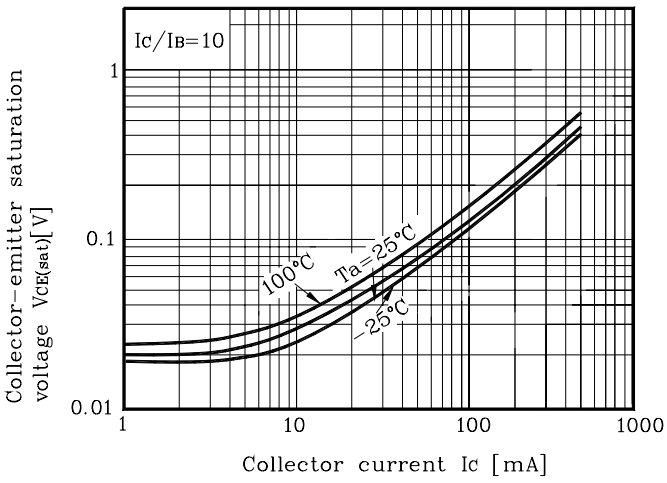


Fig. 5 h_{FE} - I_C

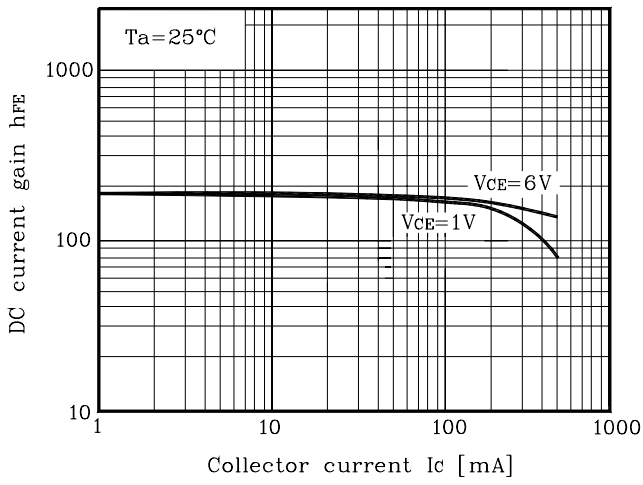
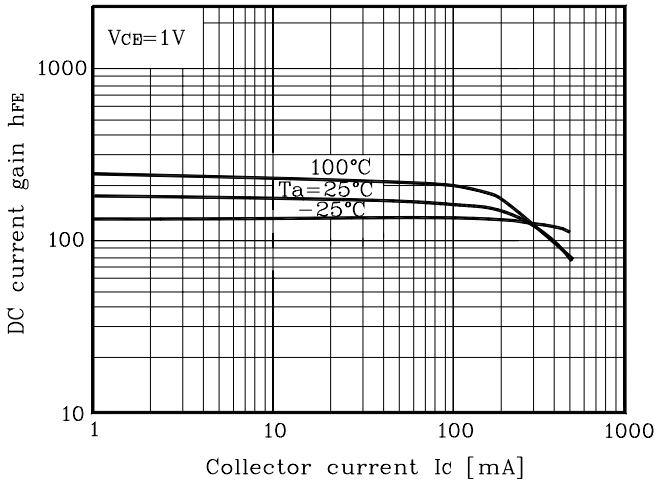


Fig. 6 h_{FE} - I_C



The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.