AUK Semiconductor

STS9018

NPN Silicon Transistor

Description

- High frequency low noise amplifier application
- VHF band amplifier application

Features

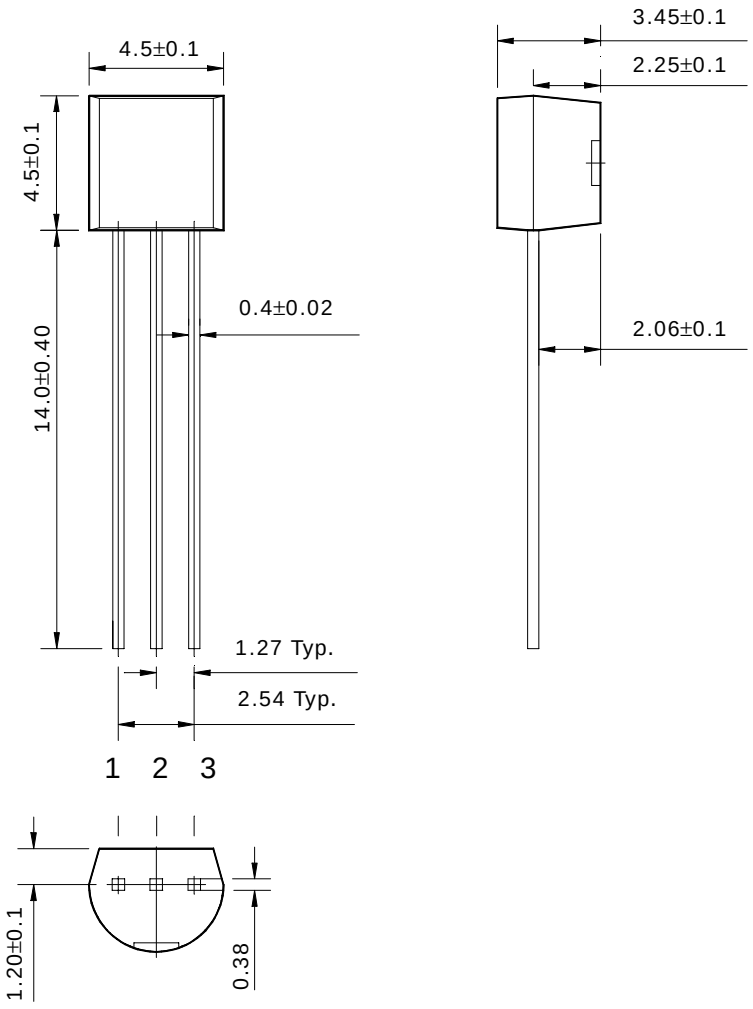
- Low noise figure : NF = 4dB(Max.) at f=100MHz
- High transition frequency f_T = 800MHz(Typ.)

Ordering Information

Type NO.	Marking	Package Code
STS9018	STS9018	TO-92

Outline Dimensions

unit : mm



PIN Connections
1. Emitter
2. Base
3. Collector

Absolute maximum ratings

Ta=25°C

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	40	V
Collector-Emitter voltage	V_{CEO}	30	V
Emitter-Base voltage	V_{EBO}	4	V
Collector current	I_C	20	mA
Emitter current	I_E	-20	mA
Collector dissipation	P_C	625	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 cut-off current	I_{CBO}	V_{CB}=40V, I_E=0	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0	-	-	0.1	μA
DC current gain	h_{FE}*	V_{CE}=5V, I_C=1mA	54	-	198	-
Transistor frequency	f_T	V_{CE}=10V, I_E=-8mA	500	800	-	MHz
Noise figure	NF	V_{CB}=6V,I_E=-1mA, f=100MHz	-	-	4	dB
Power gain	G_{PE}		15	-	-	

* : h_{FE} rank / F : 54~80, G : 70~108, H : 97~146, I : 132~198.

Electrical Characteristic Curves

Fig. 1 P_C –T_a

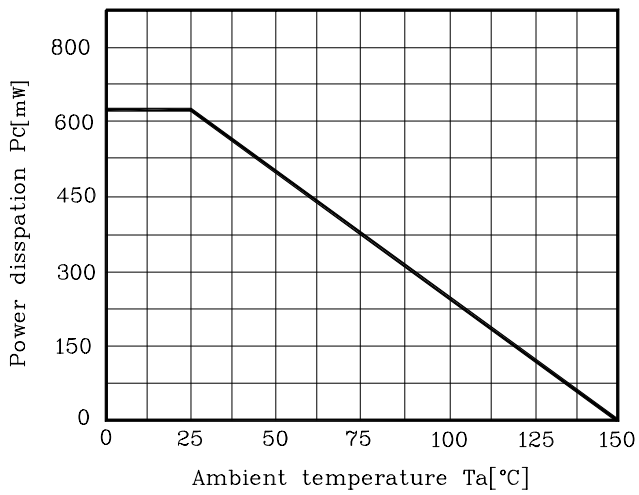


Fig. 2 I_C-V_{CE}

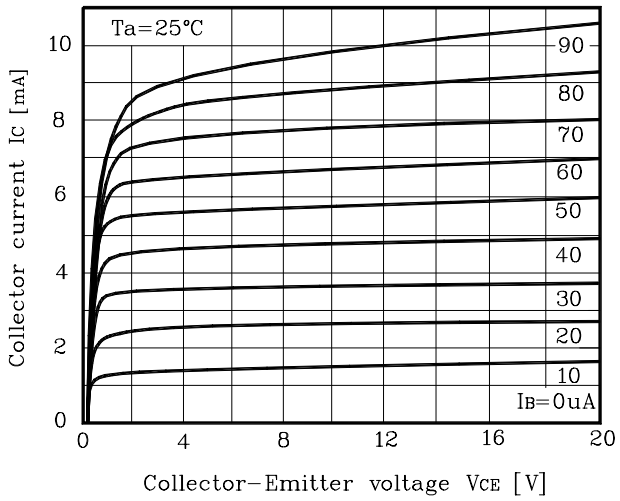


Fig. 3 h_{FE}-I_C

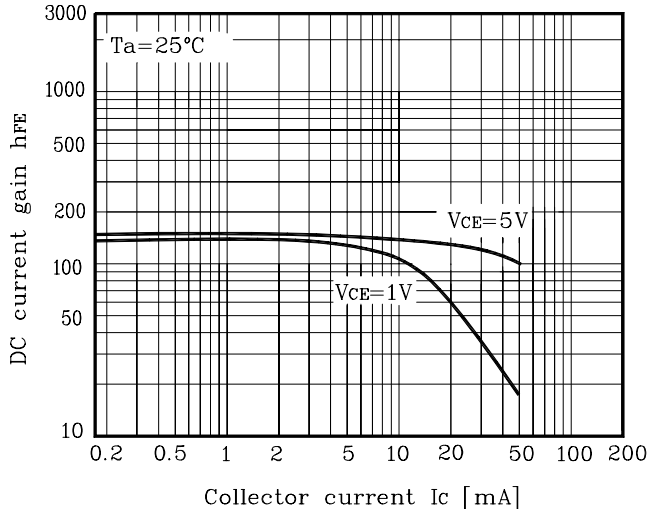


Fig. 4 f_T-I_E

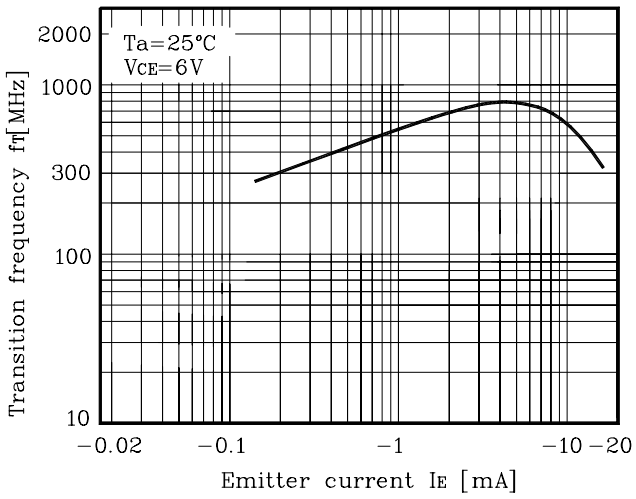


Fig. 5 C_{ob}-V_{CB}, C_{ib}-V_{EB}

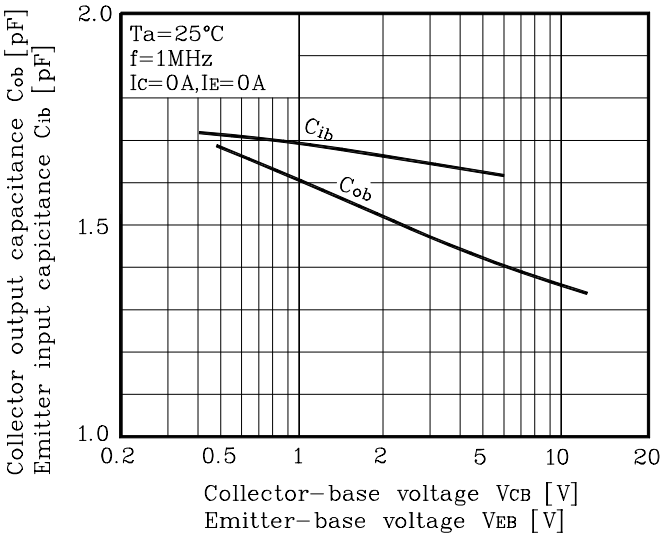
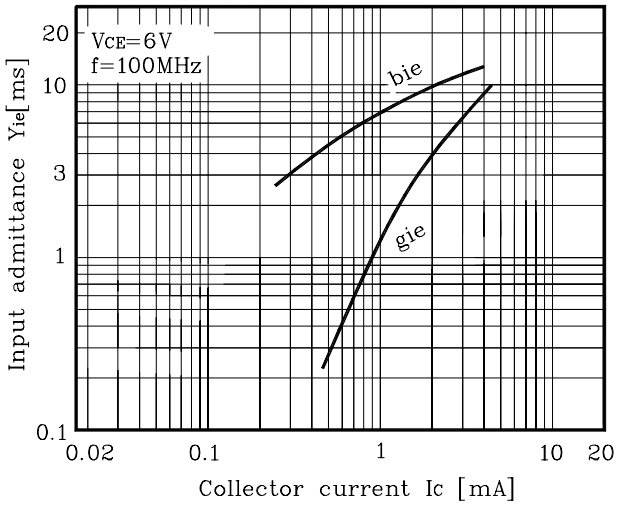


Fig. 6 Yie-I_C



Electrical Characteristic Curves

Fig. 7 I_C-Yoe

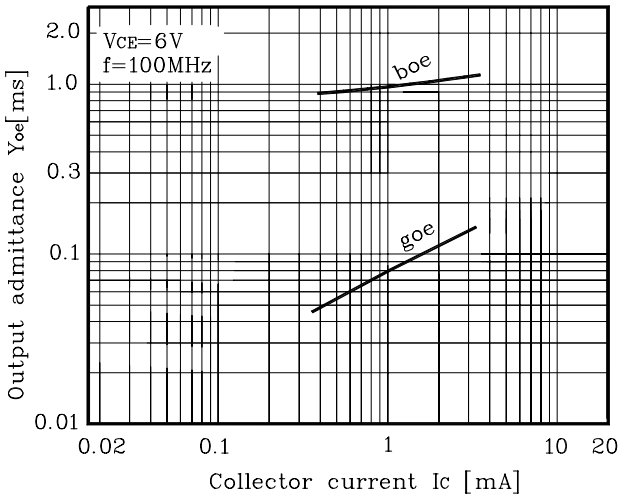


Fig. 8 I_C-Yfe

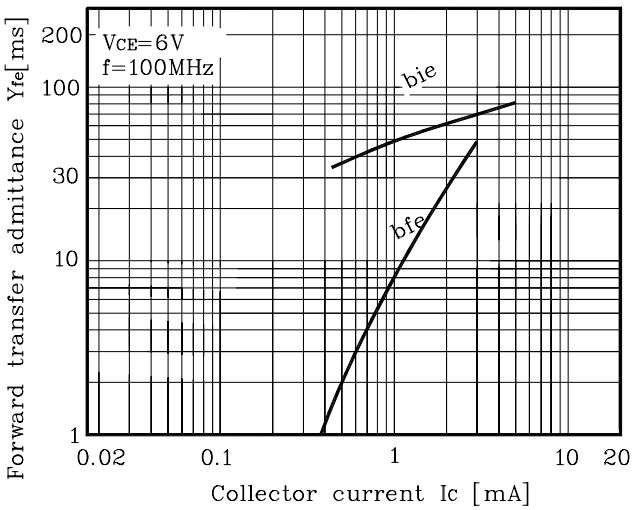
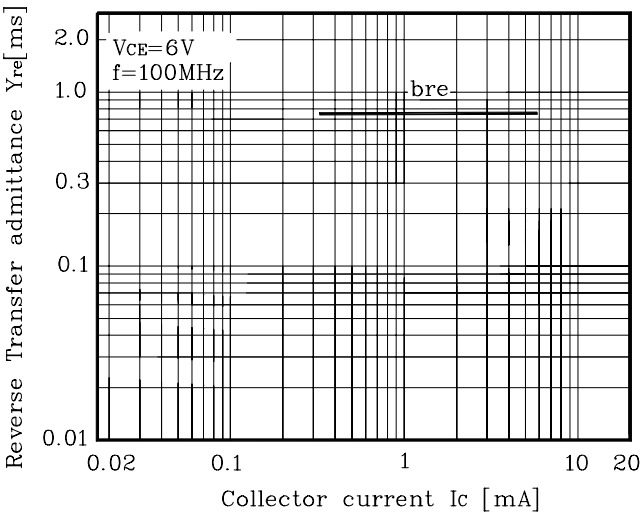



Fig. 9 I_C - Yre