

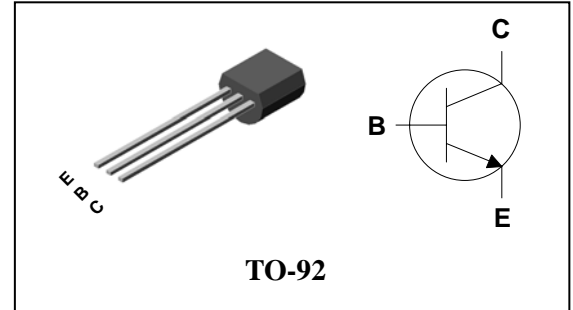
## Description

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

## Features

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

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
STS9018	STS9018	TO-92

## Absolute maximum ratings

 $T_a = 25^\circ\text{C}$ 

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CB0}$	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	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 ~ 150	$^\circ\text{C}$

## Electrical Characteristics

 $T_a = 25^\circ\text{C}$ 

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector cut-off current	$I_{CB0}$	$V_{CB} = 40\text{V}, I_E = 0$	-	-	0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$	-	-	0.1	$\mu\text{A}$
DC current gain	$h_{FE}^*$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	54	-	198	-
Transistor frequency	$f_T$	$V_{CE} = 10\text{V}, I_E = -8\text{mA}$	500	800	-	MHz
Noise figure	NF	$V_{CB} = 6\text{V}, I_E = -1\text{mA}, f = 100\text{MHz}$	-	-	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  $P_C - T_a$

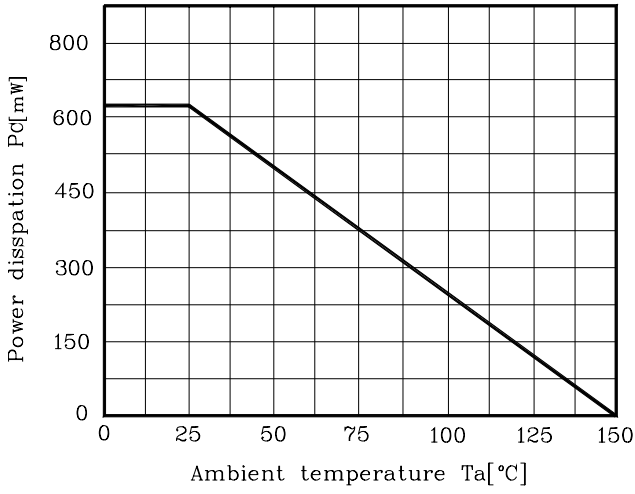


Fig. 2  $I_C - V_{CE}$

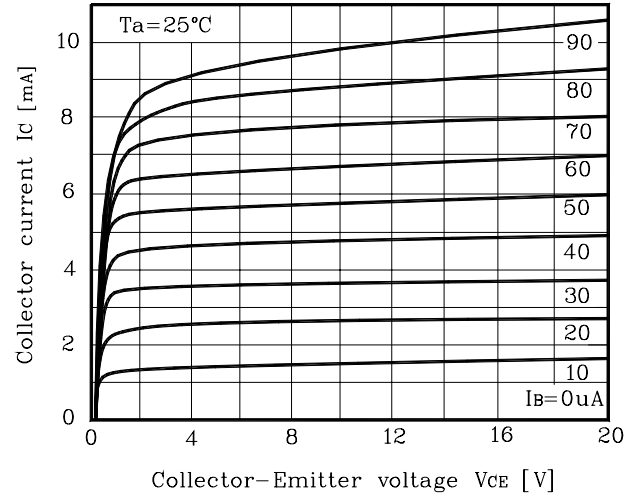


Fig. 3  $h_{FE} - I_C$

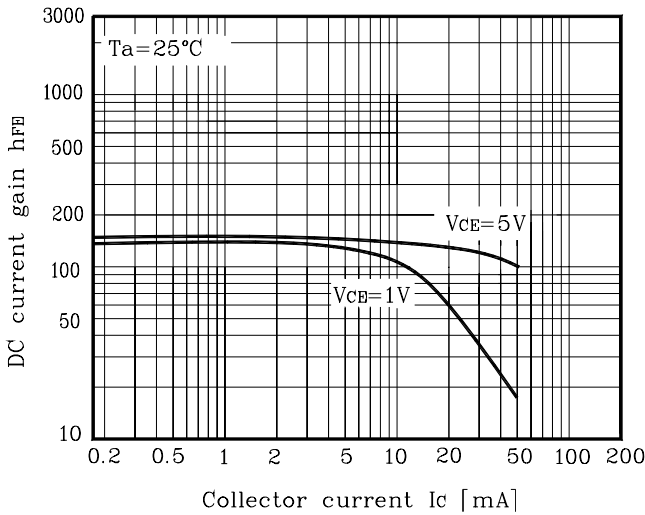


Fig. 4  $f_T - I_E$

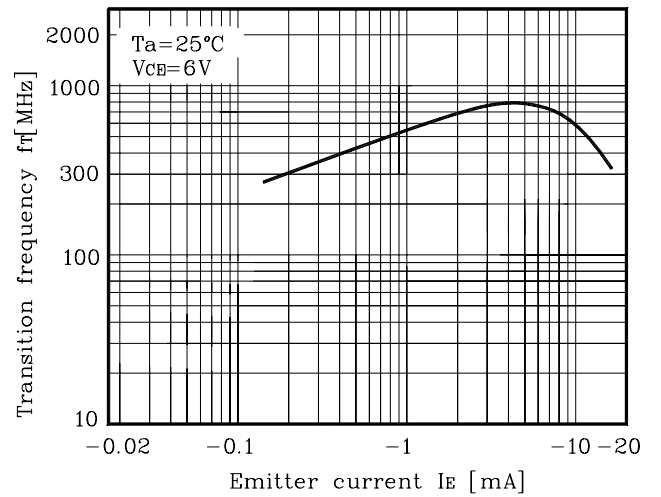


Fig. 5  $C_{ob} - V_{CB}, C_{ib} - V_{EB}$

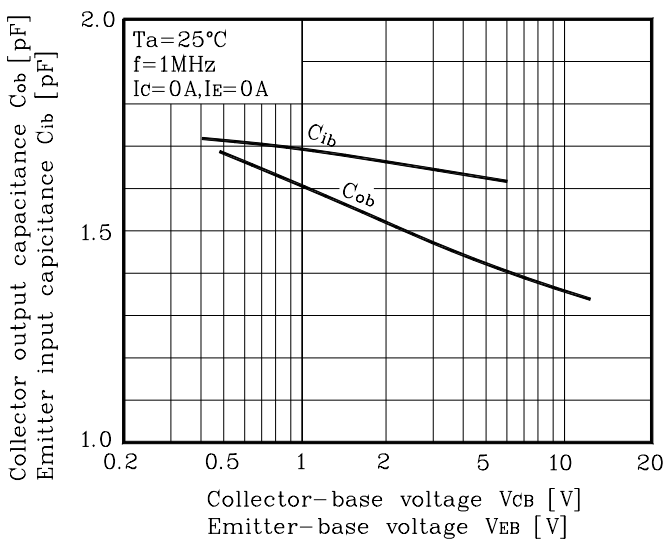
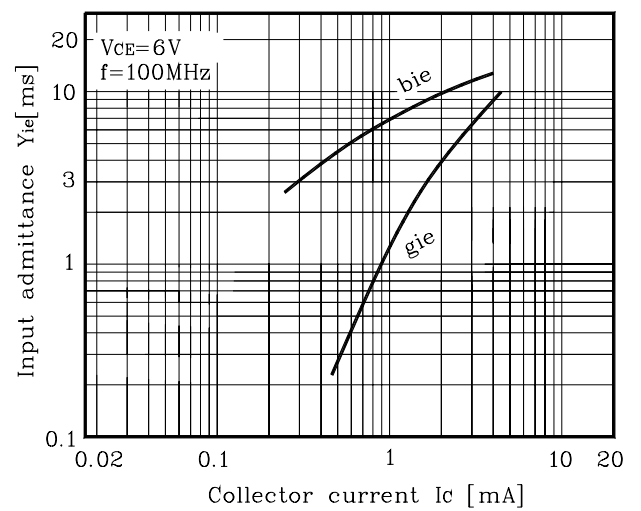


Fig. 6  $Y_{ie} - I_C$



Electrical Characteristic Curves

Fig. 7  $I_C$ - $Y_{oe}$

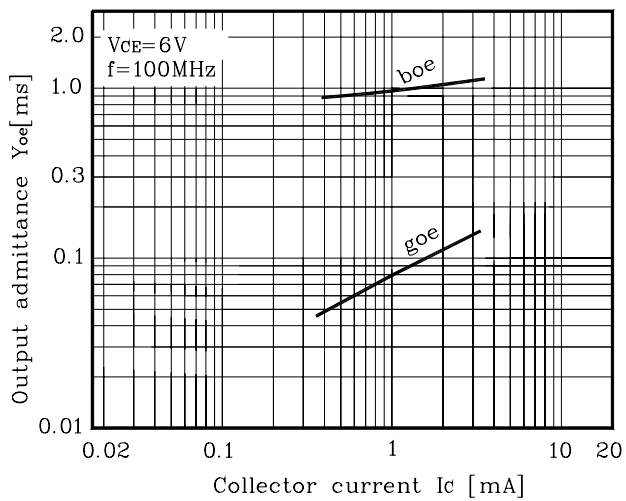


Fig. 8  $I_C$ - $Y_{fe}$

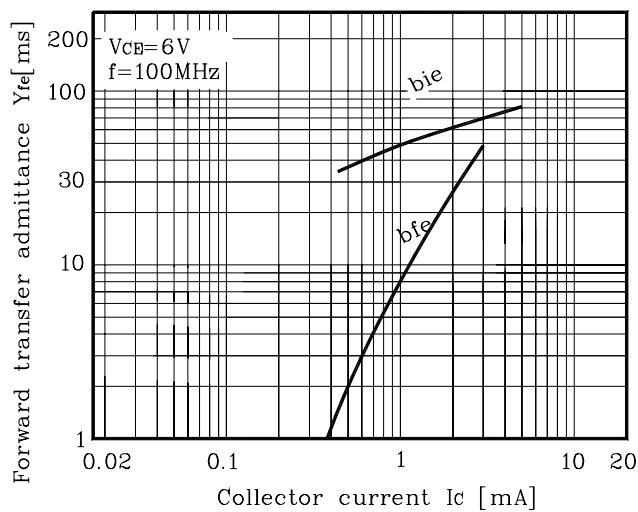
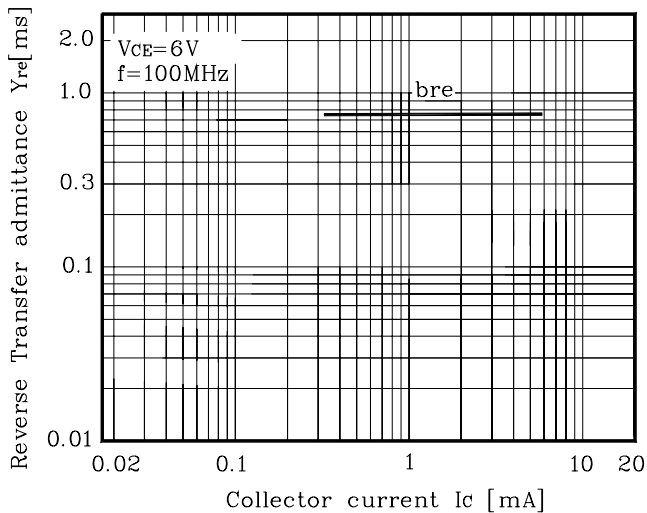
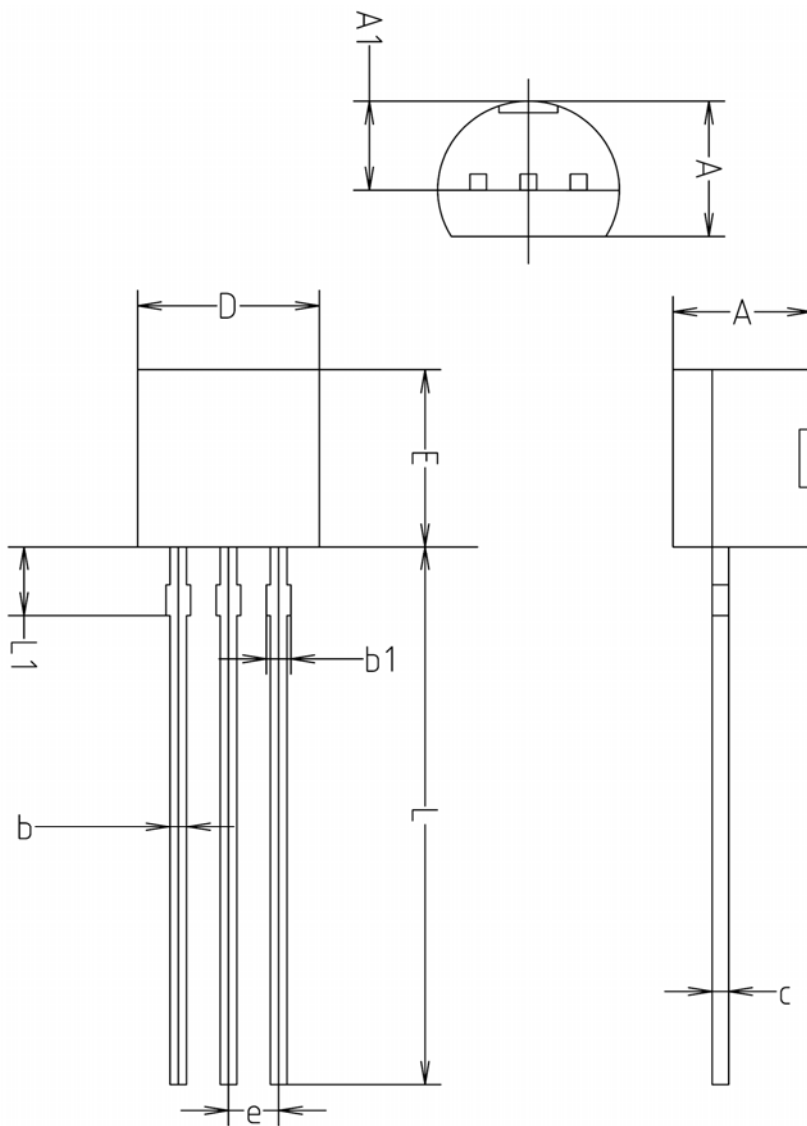


Fig. 9  $I_C$ - $Y_{re}$



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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