

**2SA1256****High Frequency Amp Applications****Applications**

- Ideally suited for use in FM RF amplifiers, mixers, oscillators, converters, and IF amplifiers.

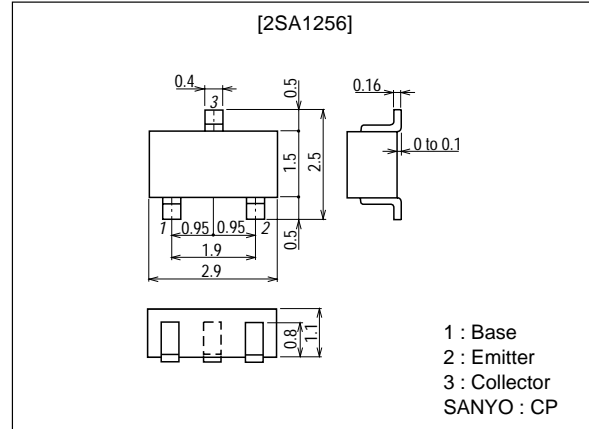
**Features**

- High  $f_T$  (230MHz typ), and small  $C_{re}$  (1.1pF typ).
- Small NF (2.5dB typ).

**Package Dimensions**

unit:mm

2018B

**Specifications****Absolute Maximum Ratings** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-30	V
Collector-to-Emitter Voltage	$V_{CEO}$		-20	V
Emitter-to-Base Voltage	$V_{EBO}$		-5	V
Collector Current	$I_C$		-30	mA
Collector Dissipation	$P_C$		150	W
Junction Temperature	$T_J$		125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +125	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CB0}$	$V_{CB} = (-)10\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			-0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$	60*		270*	
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$	150	230		MHz
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = -6\text{V}, f = 1\text{MHz}$		1.1	1.7	pF
Base-to-Collector Time Constant	$r_{bb'}, C_c$	$V_{CE} = -6\text{V}, I_C = -1\text{mA}, f = 31.9\text{MHz}$		11	20	ps
Noise Figure	NF	$V_{CE} = -6\text{V}, I_C = -1\text{mA}, f = 100\text{MHz}$		2.5		dB
Voltage Gain	PG	$V_{CE} = -6\text{V}, I_C = -1\text{mA}, f = 100\text{MHz}$		22		dB

\* : The 2SA1256 is classified by 1mA  $h_{FE}$  as follows :

Rank	E3	E4	E5
$h_{FE}$	60 to 120	90 to 180	135 to 180

Note : Marking : E

 $h_{FE}$  rank : 3, 4, 5

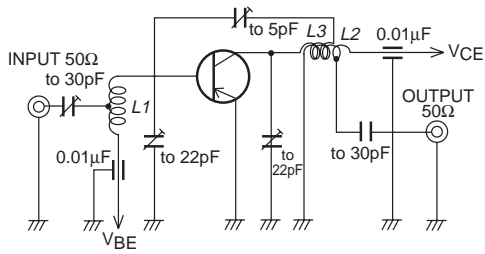
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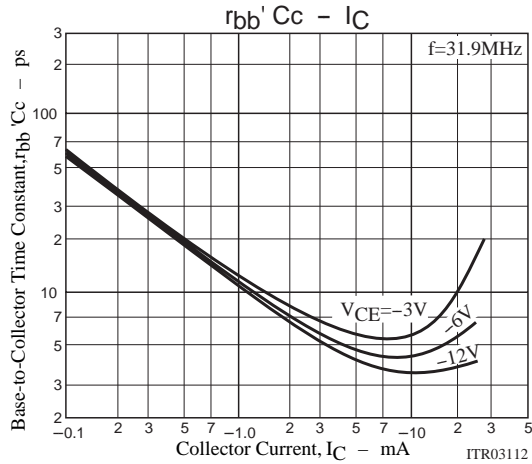
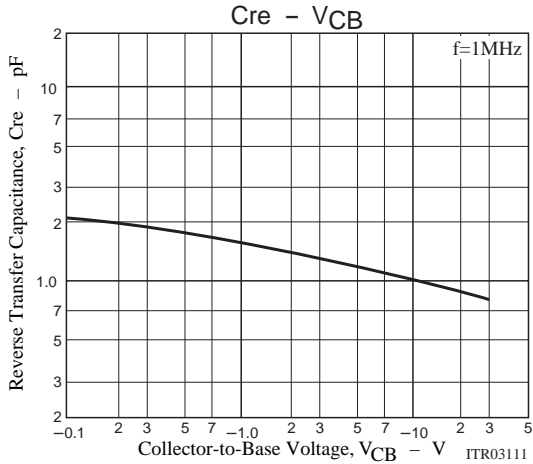
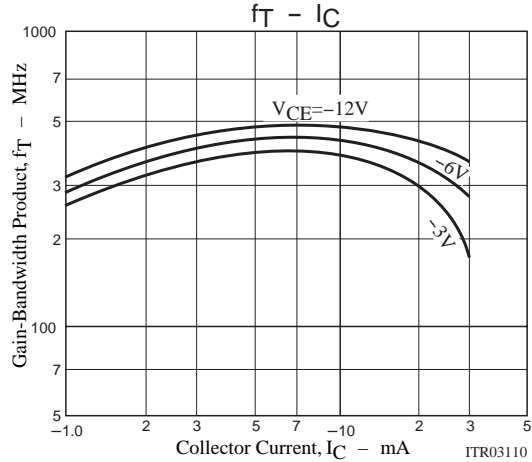
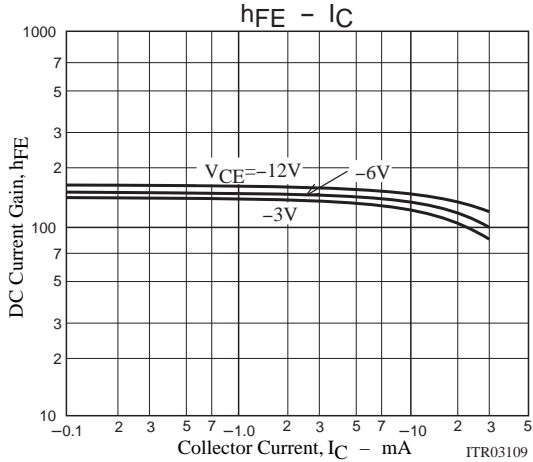
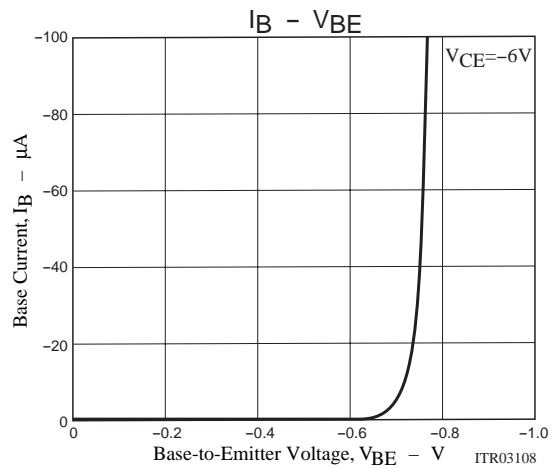
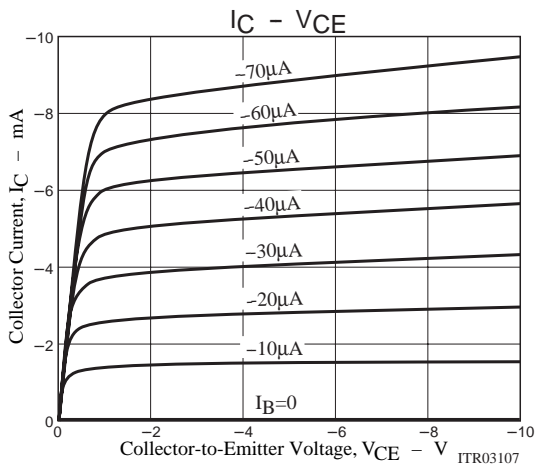
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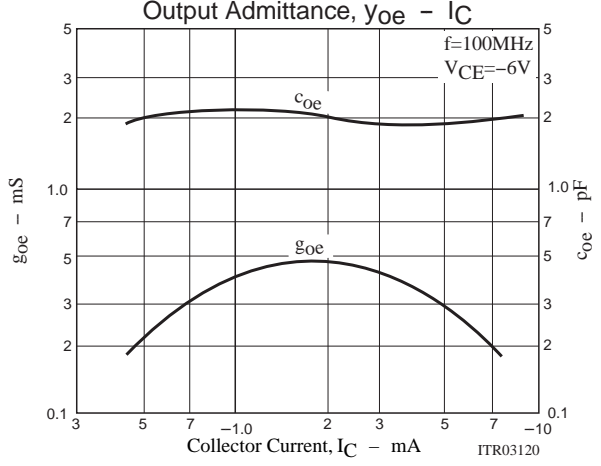
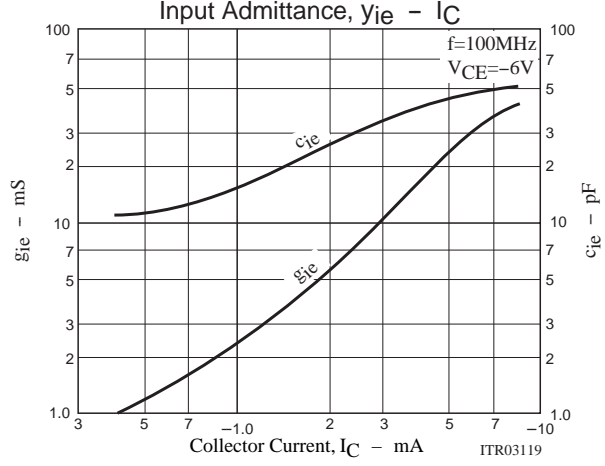
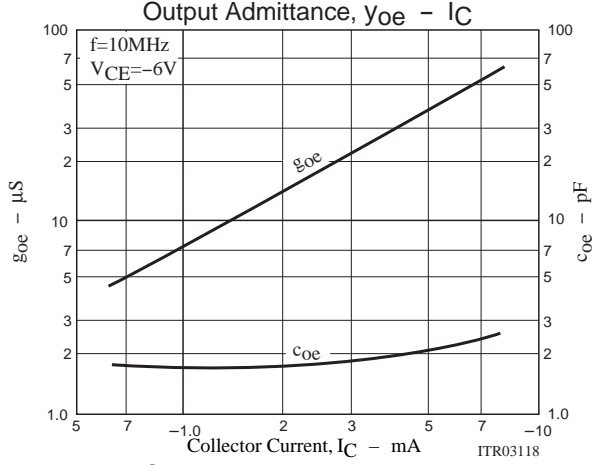
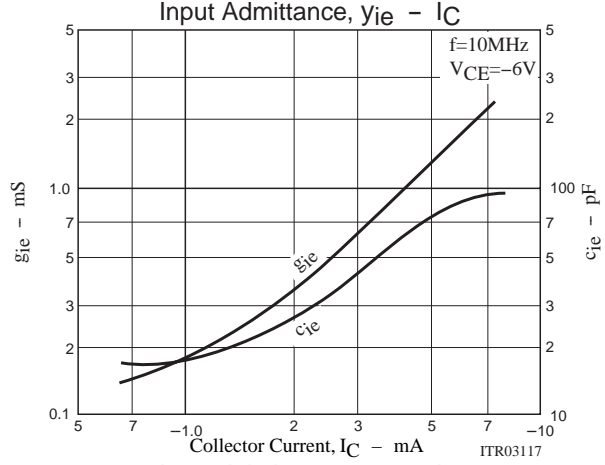
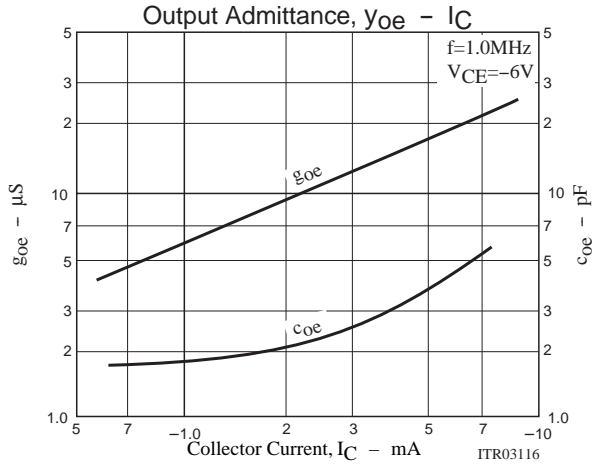
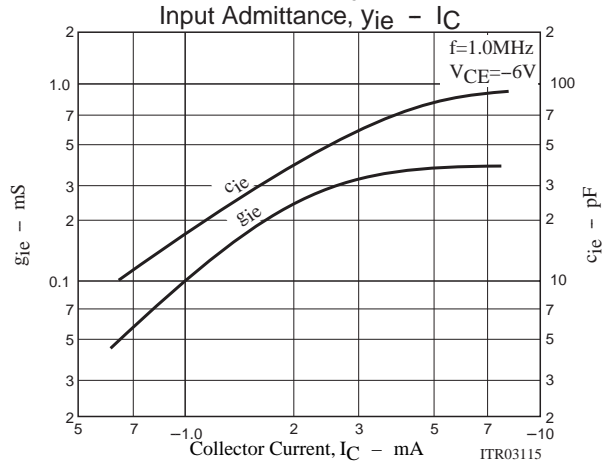
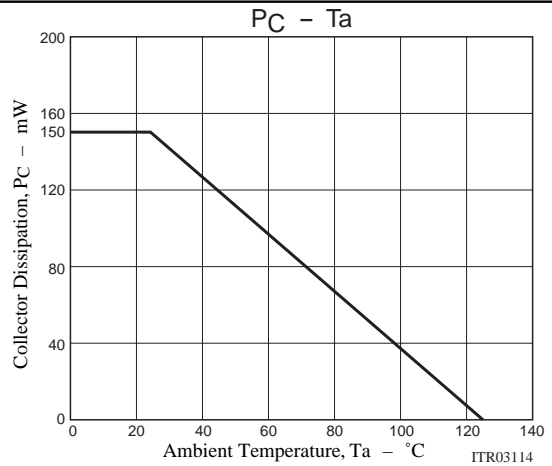
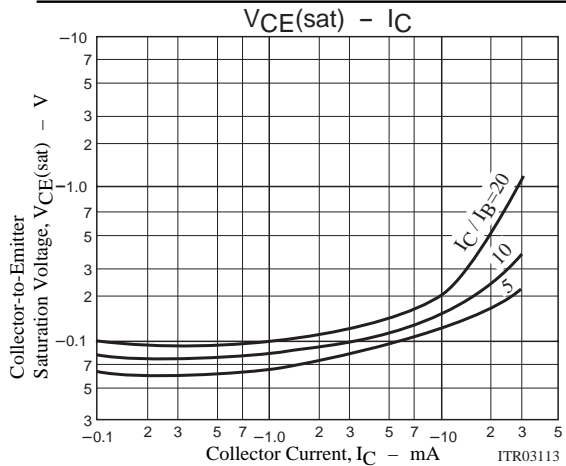
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NF, PG Test Circuit

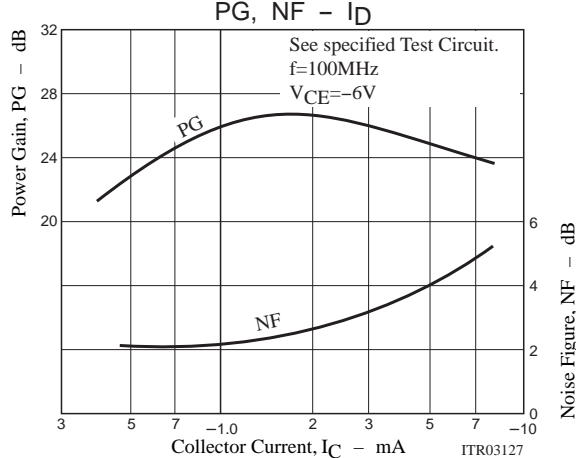
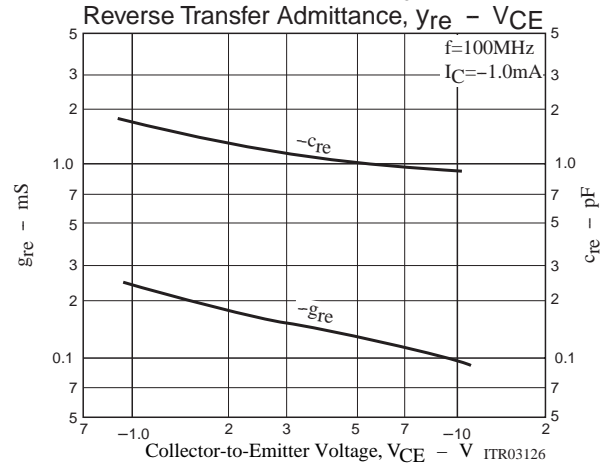
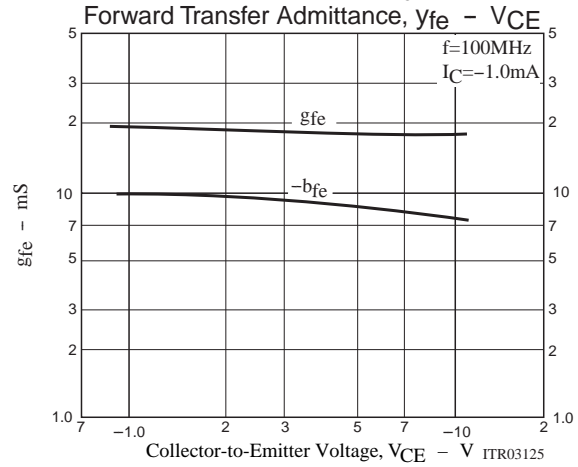
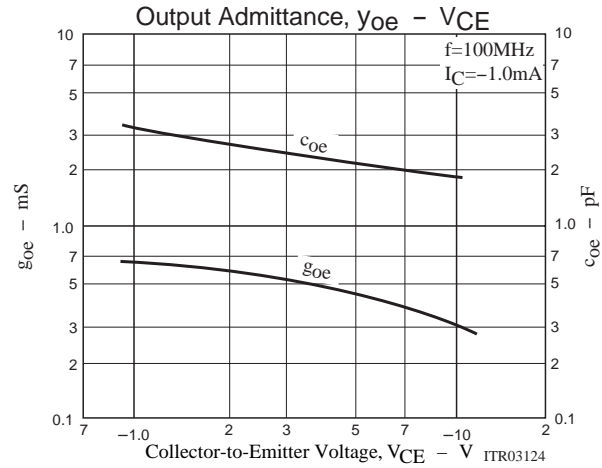
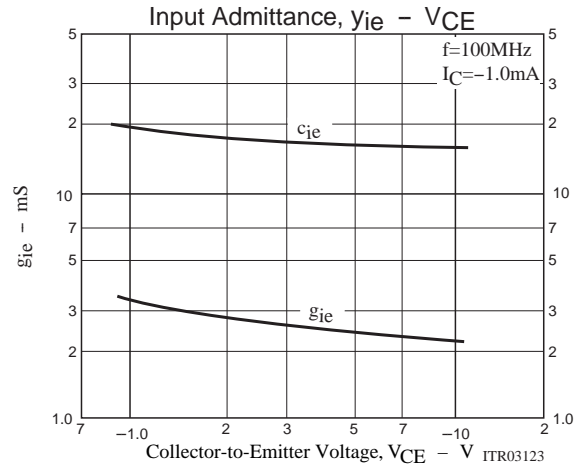
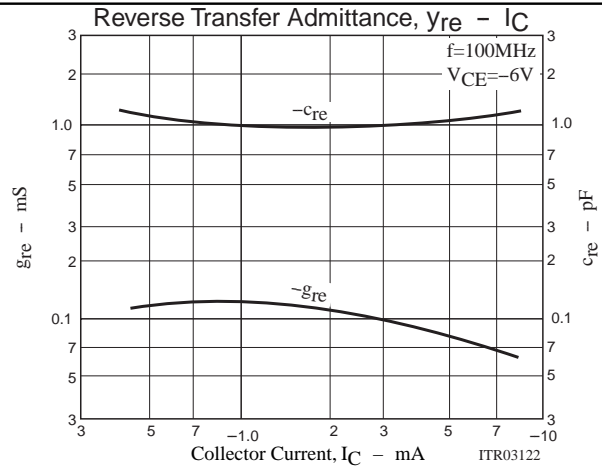
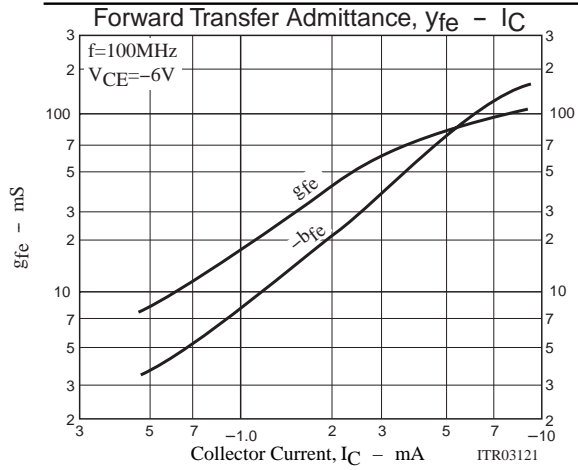


L1 : 1mmø plated wire 10mmø 5T, tap : 2T from V<sub>BE</sub> side  
 L2 : 1mmø plated wire 10mmø 7T, tap : 1T from V<sub>CE</sub> side  
 L3 : 1mmø enamel wire 10mmø 3T





# 2SA1256



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