

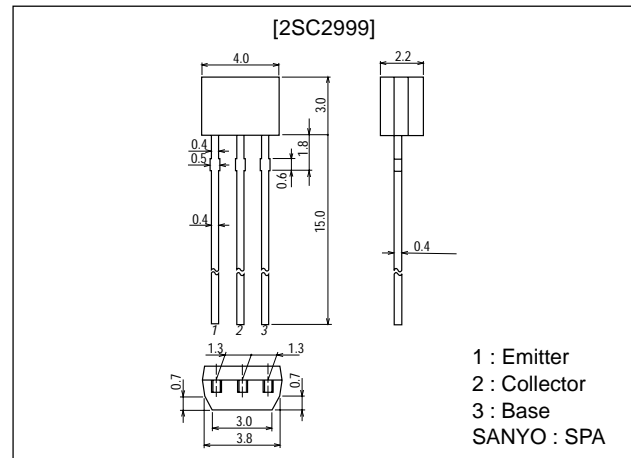
**2SC2999****HF Amplifier Applications****Features**

- FBET series.
- Ultrasmall-sized package permitting sets to be small-sized and slim.
- High f_T ($f_T=750\text{MHz}$ typ.) and small C_{re} ($C_{re}=0.6\text{pF}$ typ.).

Package Dimensions

unit:mm

2033A

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		25	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		3	V
Collector Current	I_C		30	mA
Collector Dissipation	P_C		150	mW
Junction Temperature	T_J		125	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 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_{CBO}	$V_{CB}=10\text{V}, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=3\text{V}, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=6\text{V}, I_C=1\text{mA}$	40*		200*	
Gain-Bandwidth Product	f_T	$V_{CE}=6\text{V}, I_C=4\text{mA}$	450	750		MHz
Reverse Transfer Capacitance	C_{re}	$V_{CB}=6\text{V}, f=1\text{MHz}$		0.6	0.9	pF
Base-to-Collector Time Constant	$r_{bb}C_C$	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=31.9\text{MHz}$			19	ps
Noise Figure	NF	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$		2.2		dB
Power Gain	PG	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$		28		dB

* : The 2SC2999 are classified as follows according to h_{FE} at 1mA :

Rank	C	D	E
h_{FE}	40 to 80	60 to 120	100 to 200

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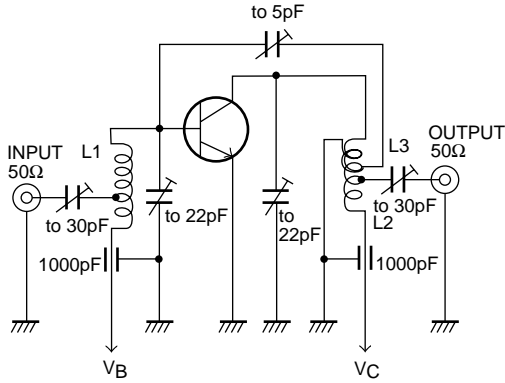
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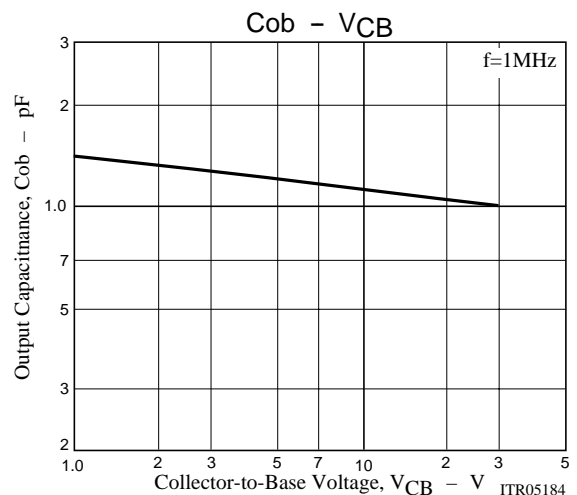
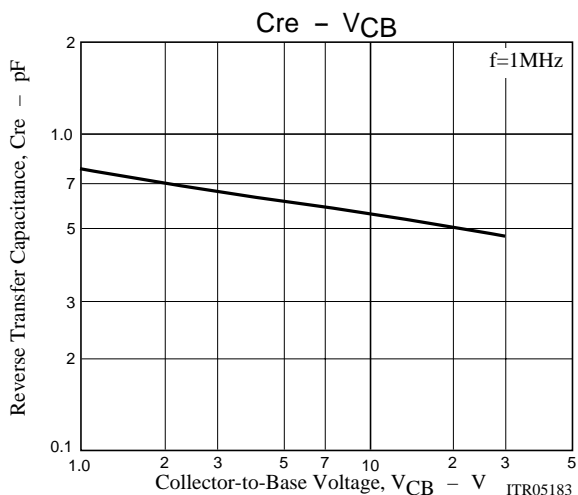
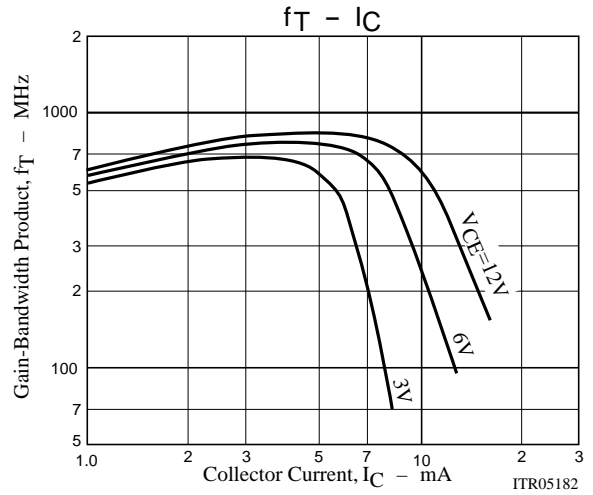
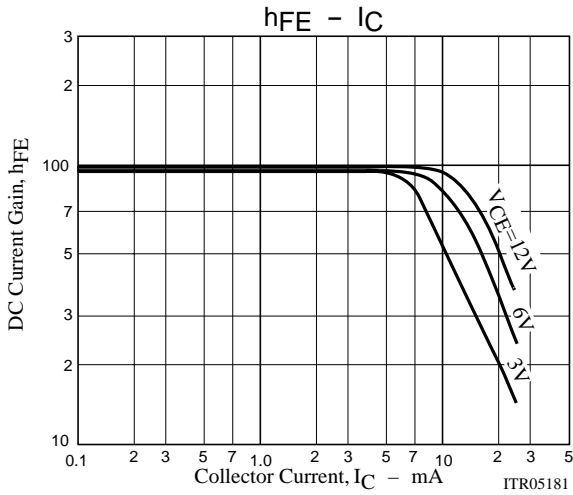
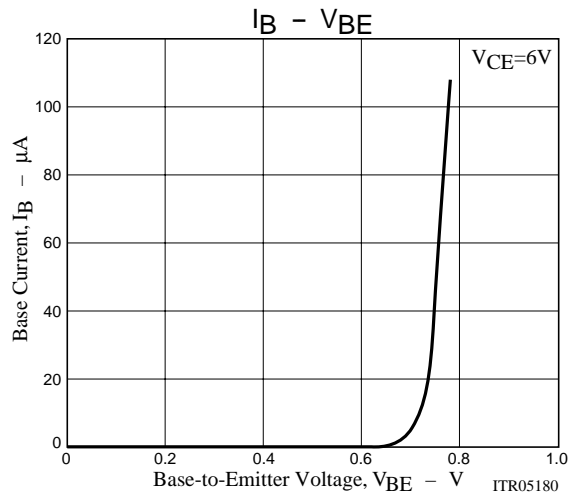
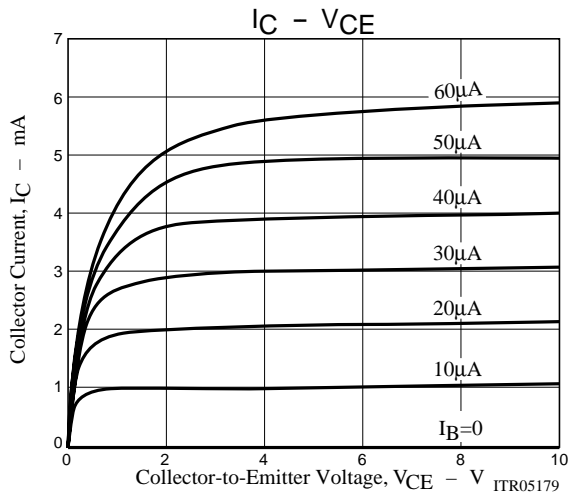
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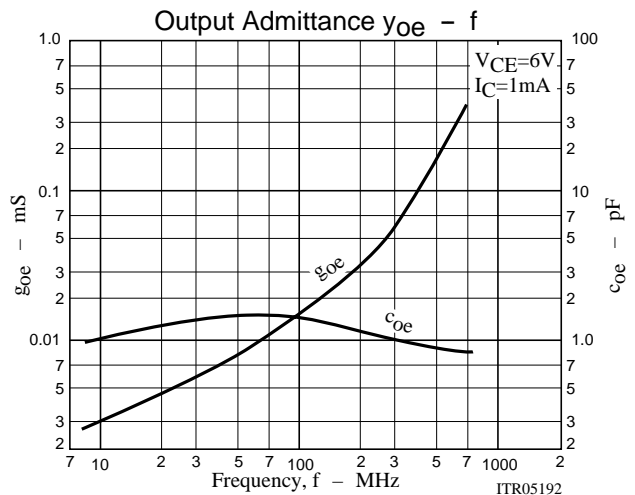
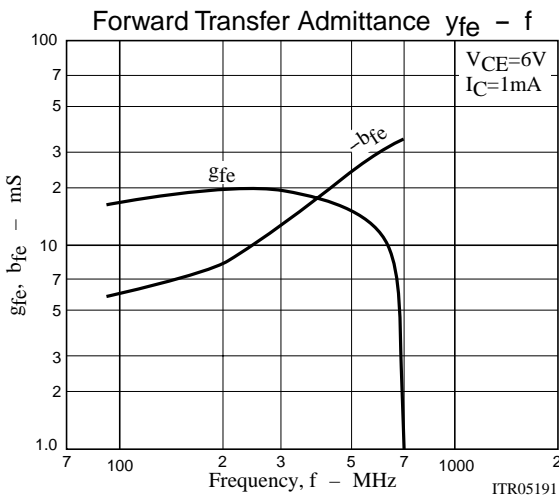
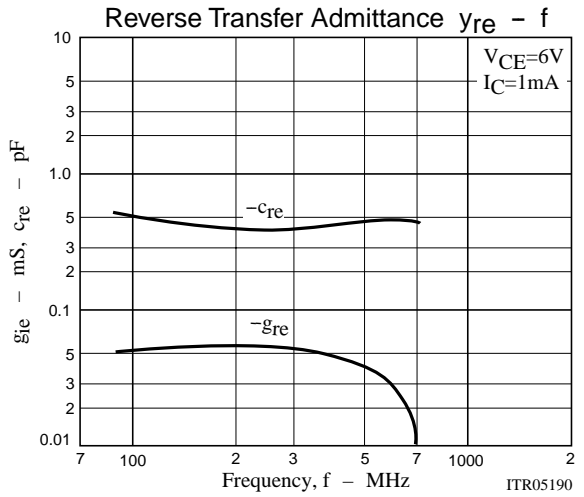
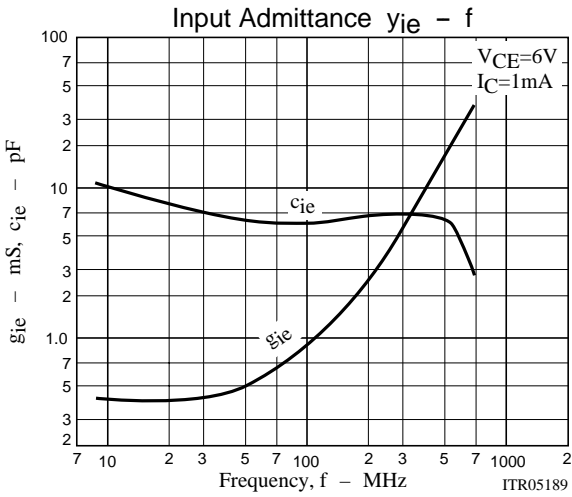
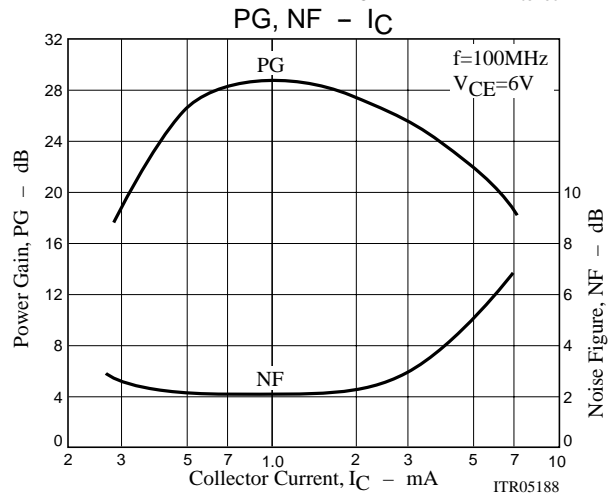
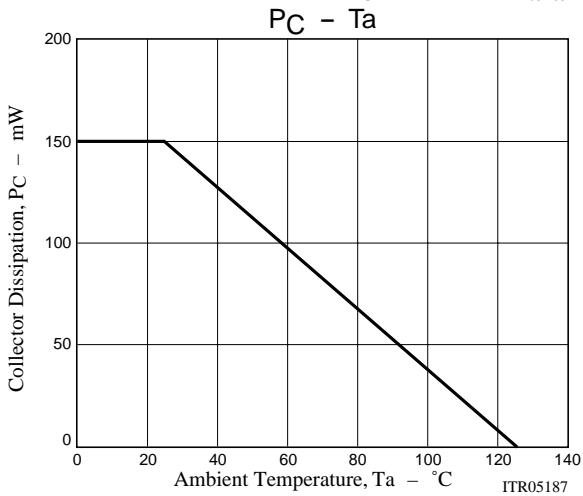
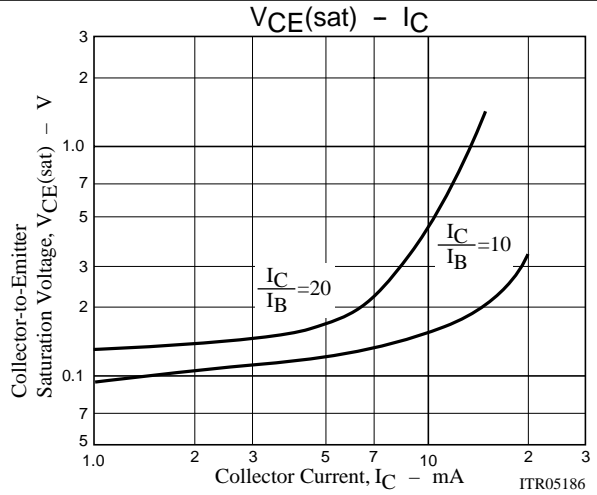
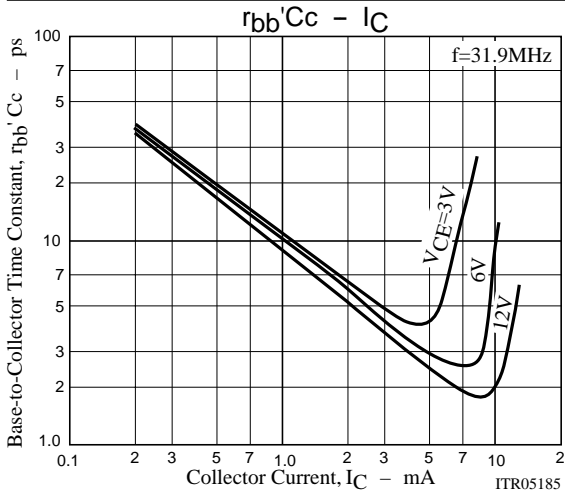
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NF, PG Test Circuit

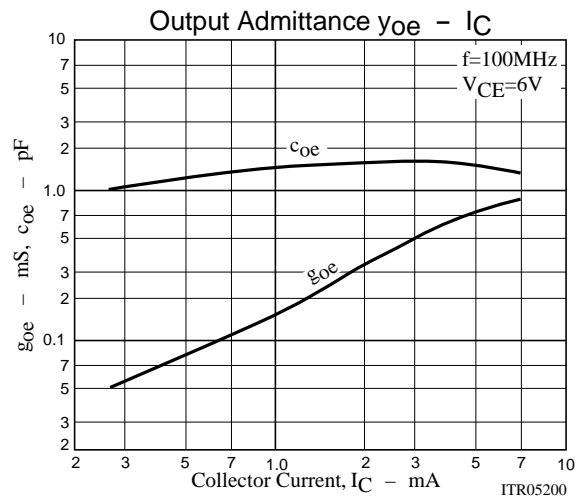
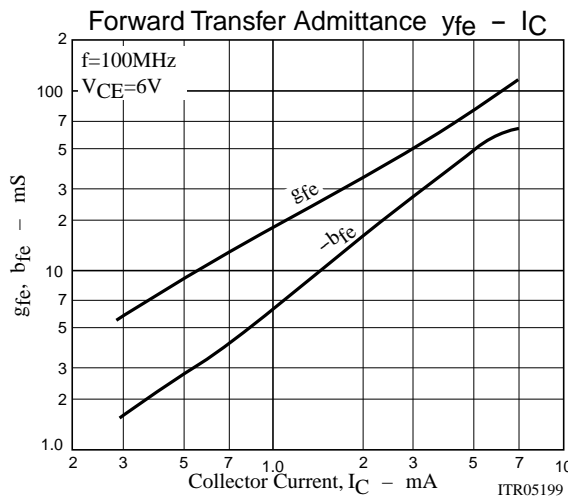
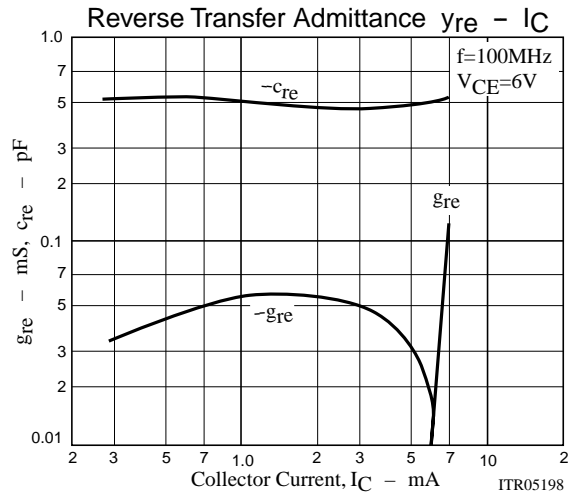
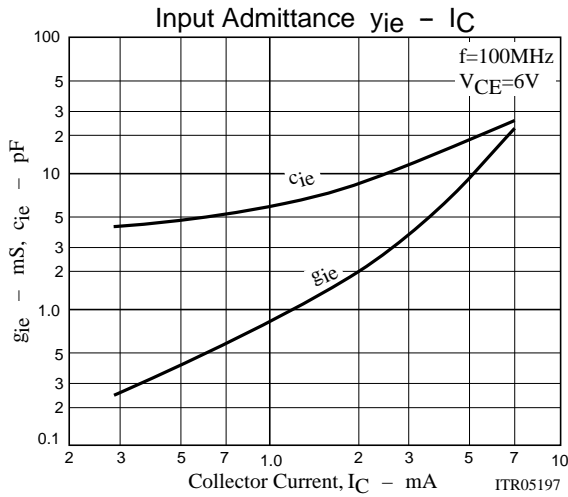
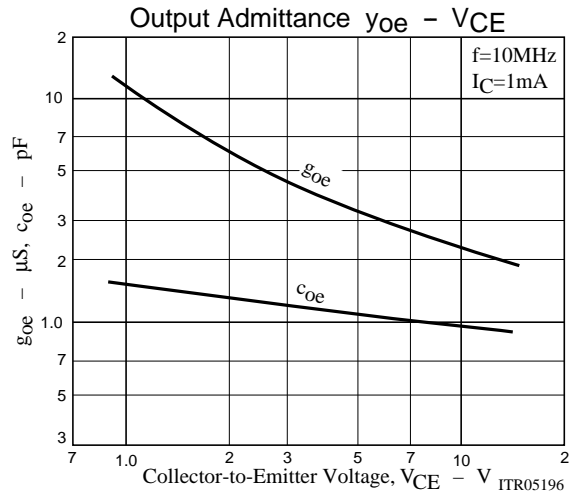
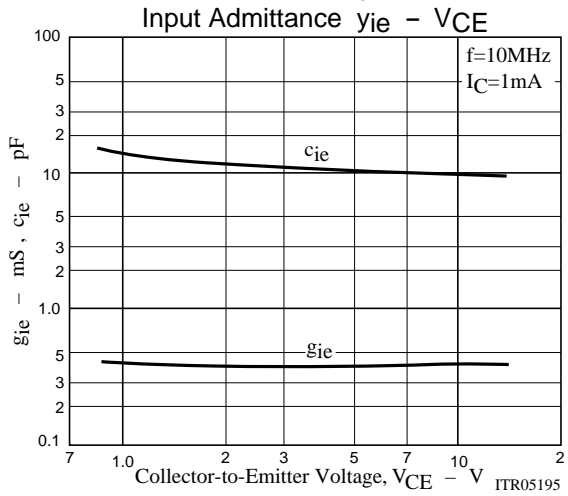
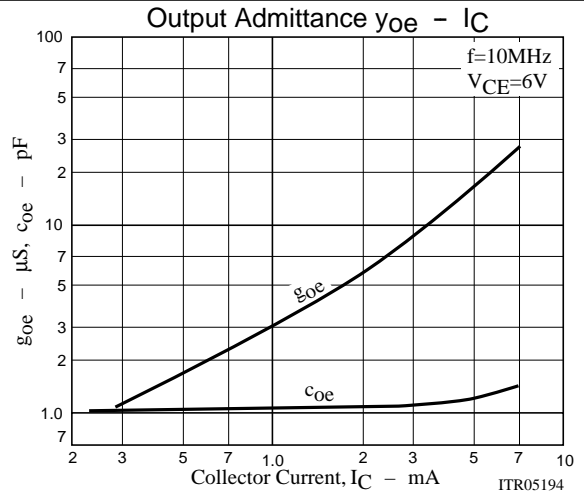
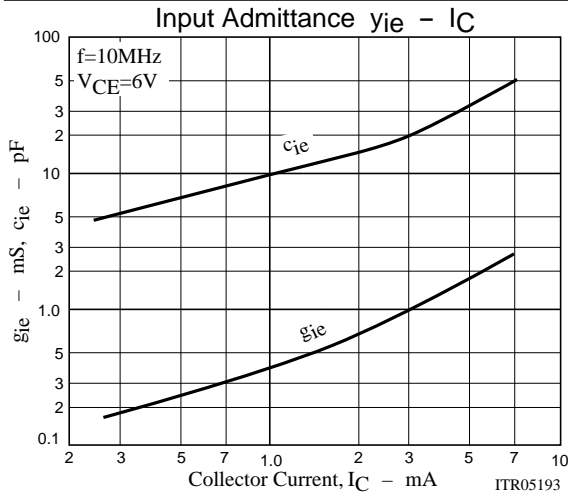


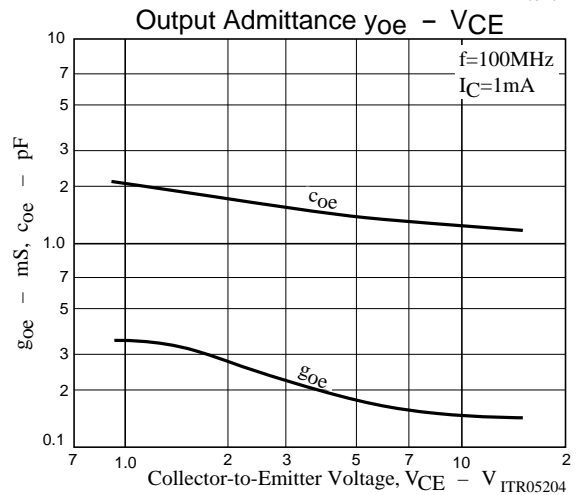
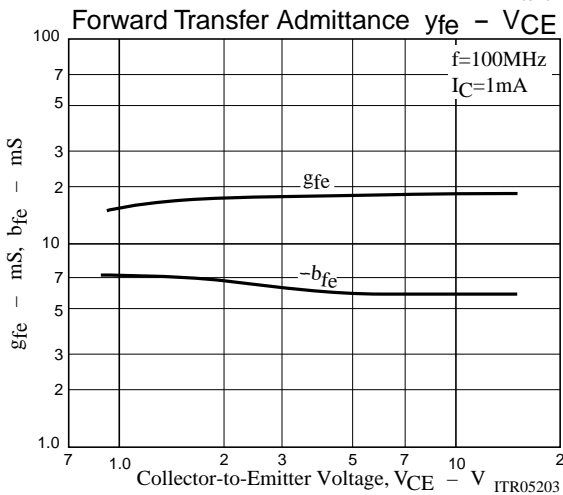
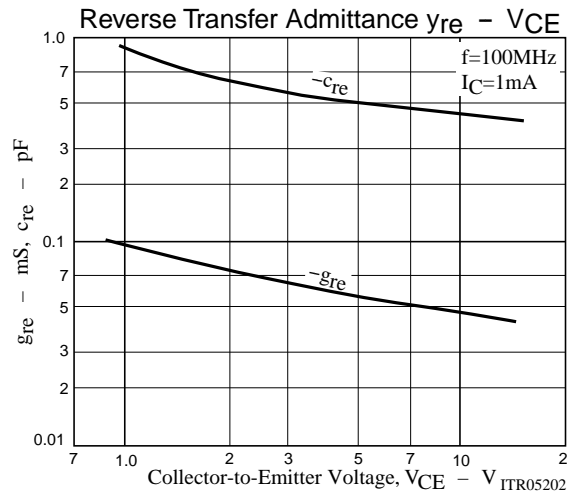
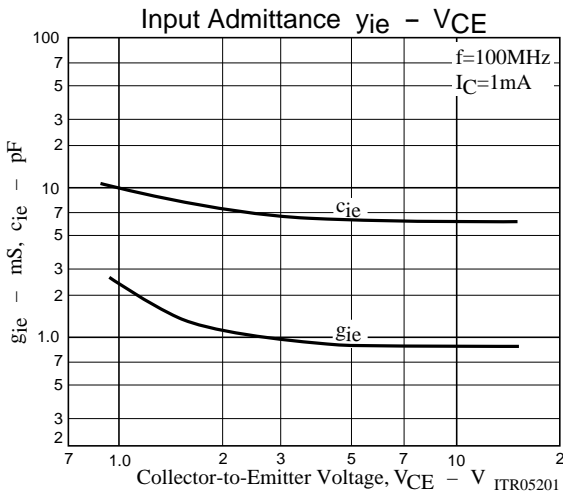
- L1 : 1mm ϕ plated wire, 10mm ϕ 5T, pitch 15mm, tapped at 2T from base side.
- L2 : 1mm ϕ plated wire, 10mm ϕ 7T, pitch 10mm, patted at 2T from V_C side.
- L3 : 1mm ϕ enameled wire, 10mm ϕ 3T, pitch 10mm.





2SC2999





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