

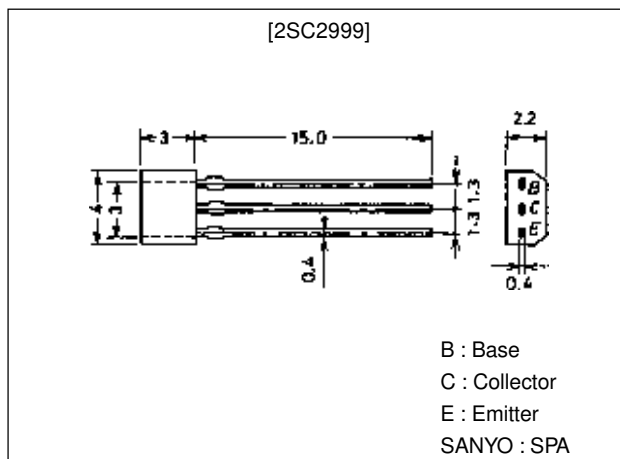
**2SC2999****HF Amplifier Applications****Features**

- FBET series.
- Very small-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

2033

**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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=3\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=6\text{V}, I_C=1\text{mA}$	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 :

40	C	80	60	D	120	100	E	200
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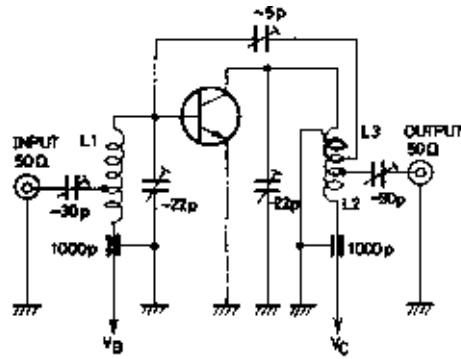
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N3098HA (KT)/3107KI/5124KI, MT No.931-1/5

## NF, PG Test Circuit

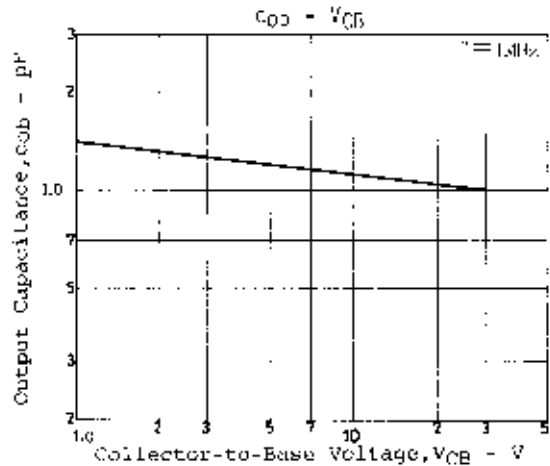
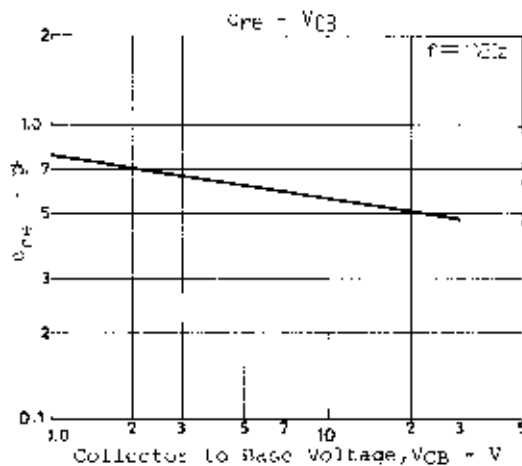
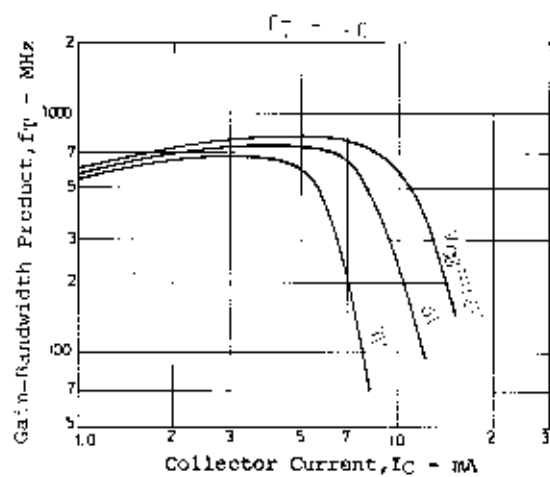
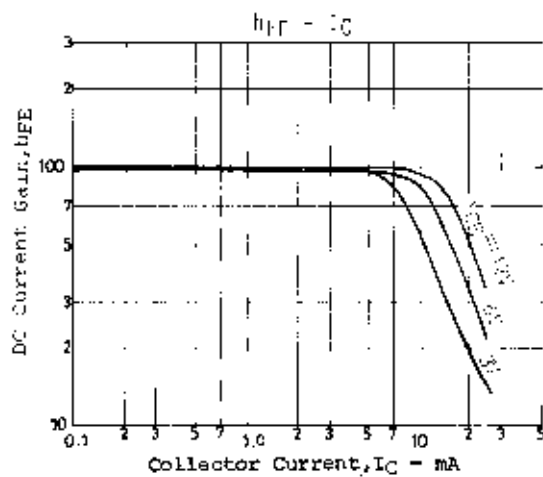
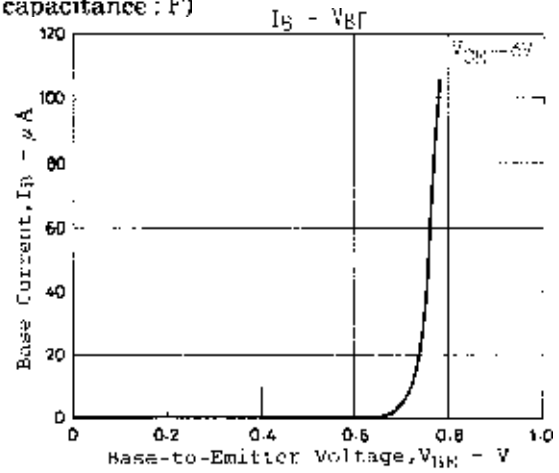
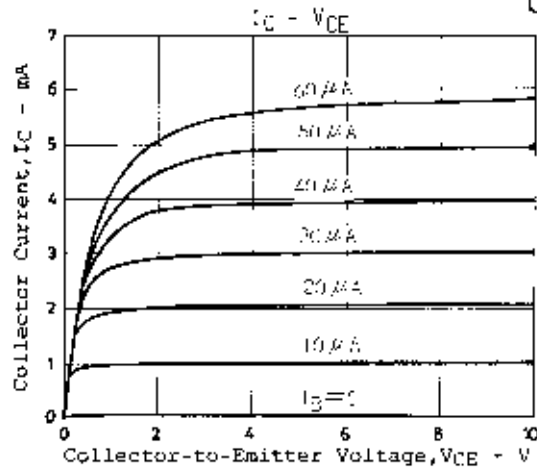


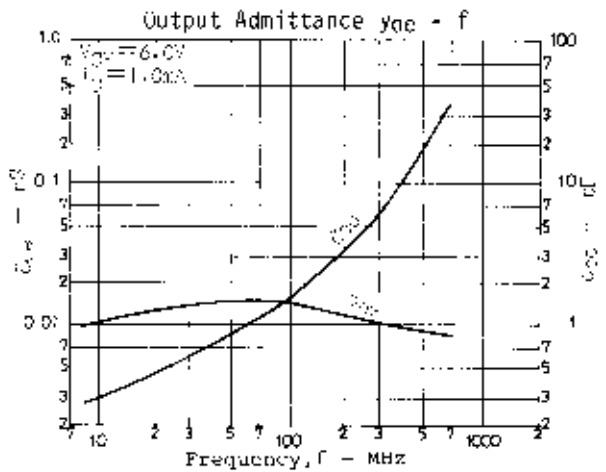
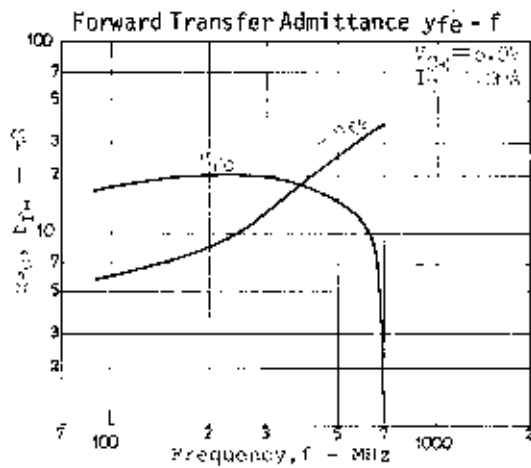
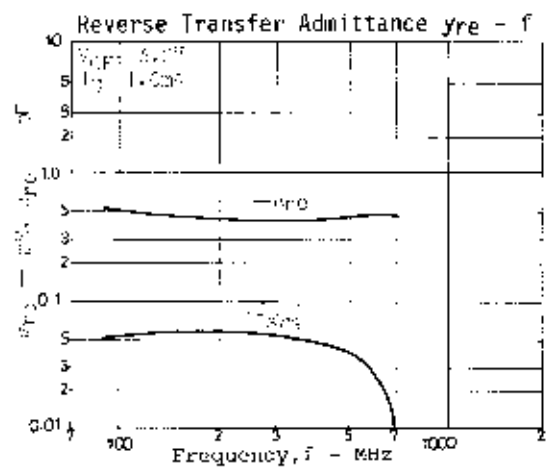
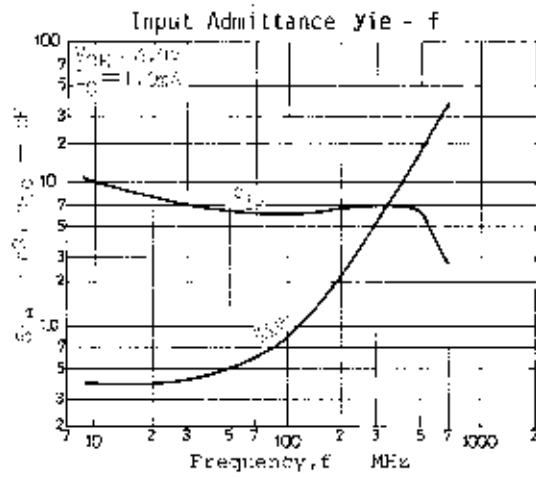
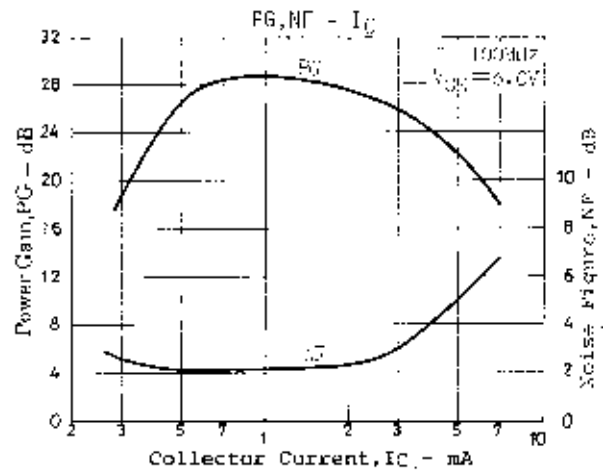
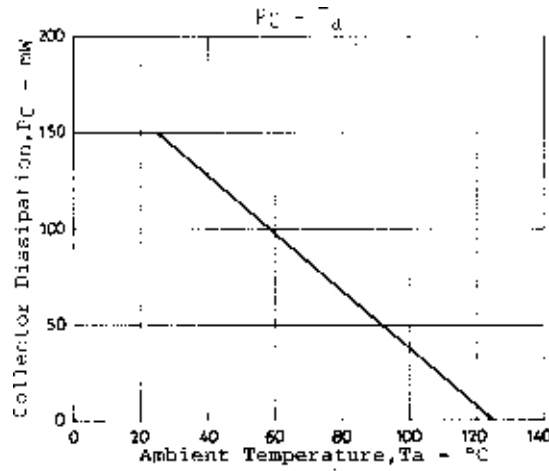
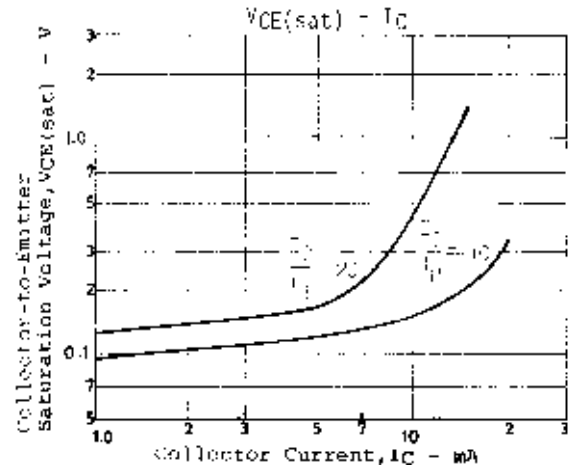
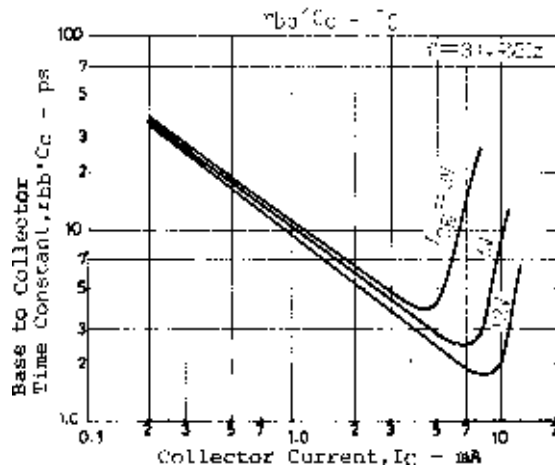
L1: 1mm $\phi$  plated wire, 10mm $\phi$  5T, pitch 15mm, tapped at 2T from base side.

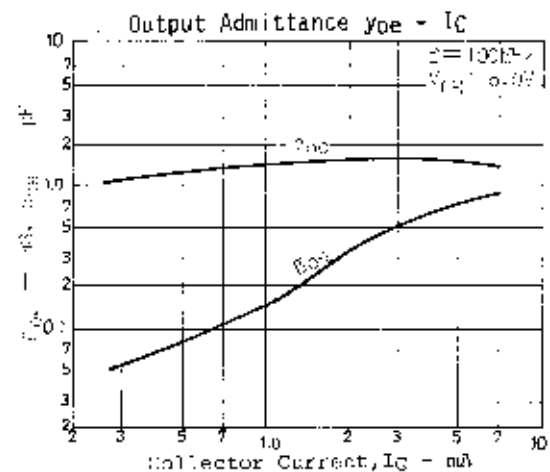
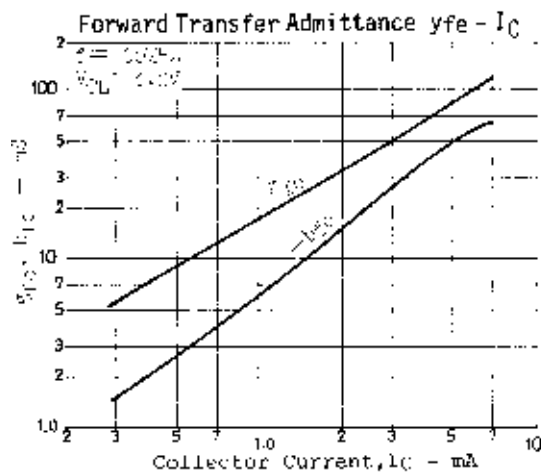
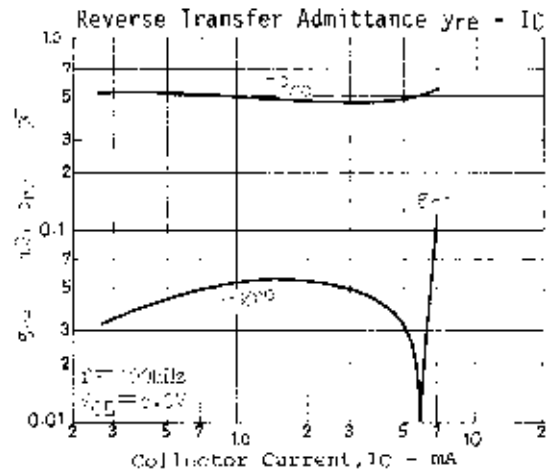
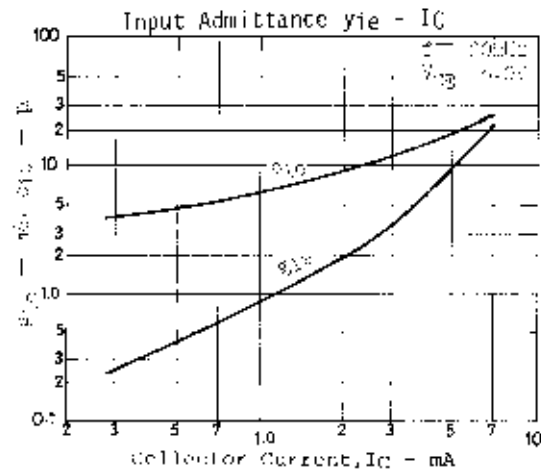
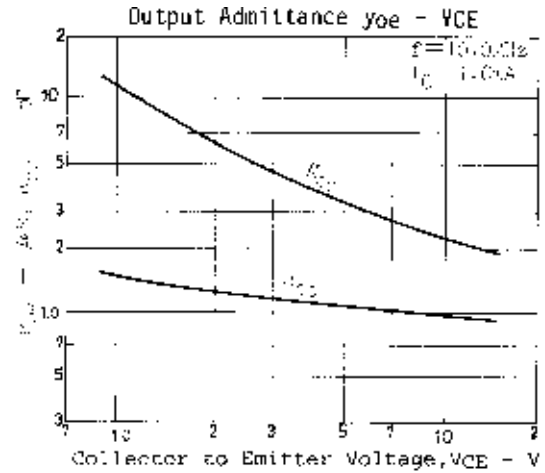
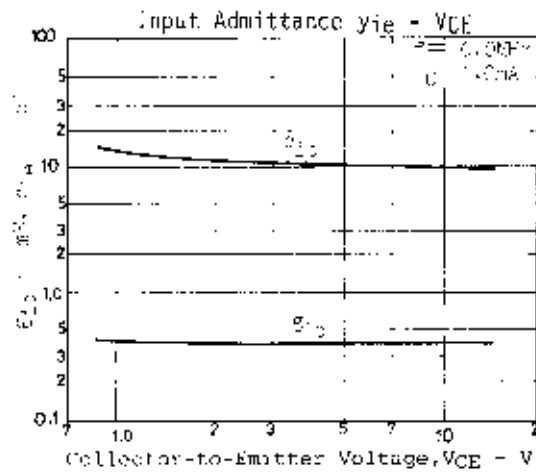
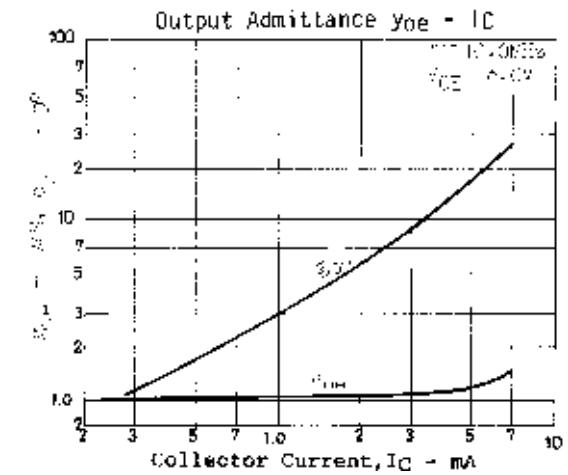
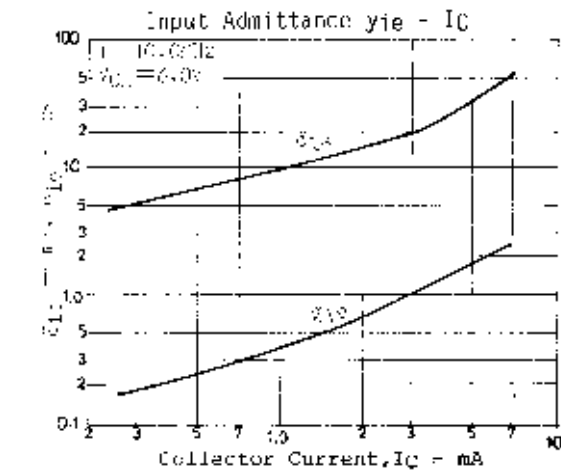
L2: 1mm $\phi$  plated wire, 10mm $\phi$  7T, pitch 10mm, tapped at 2T from  $V_C$  side.

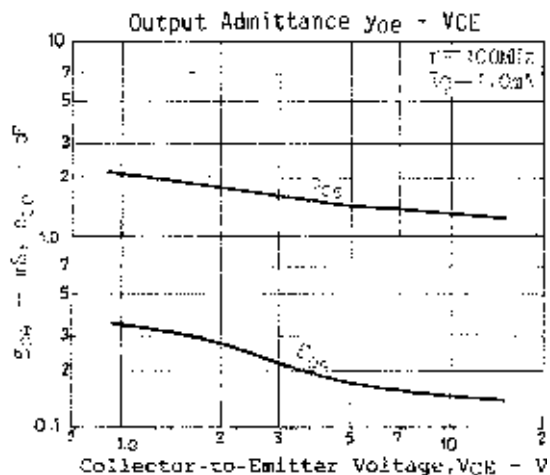
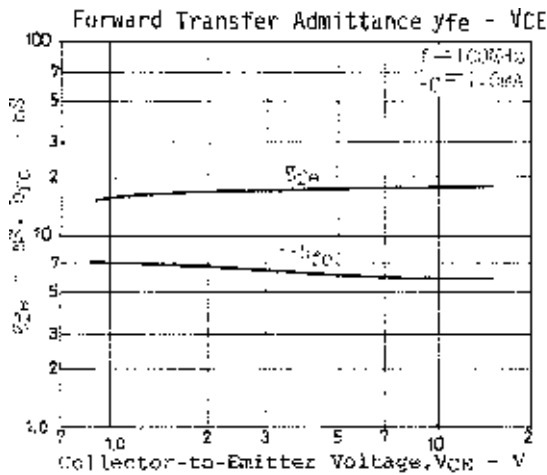
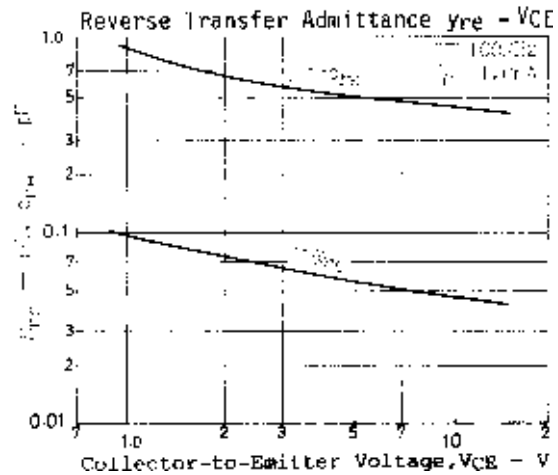
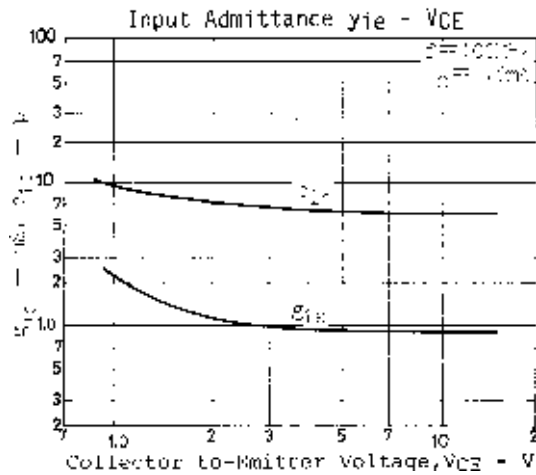
L3: 1mm $\phi$  enameled wire, 10mm $\phi$  3T, pitch 10mm.

Unit(capacitance: F)









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