

**2SC3142**

High-Frequency General-Purpose Amplifier Applications

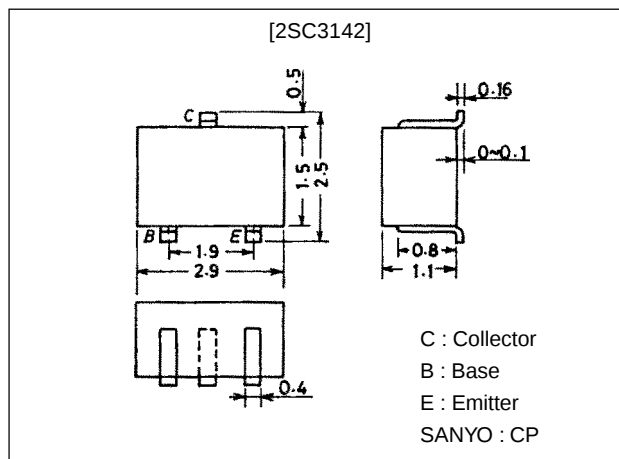
Features

- FBET series.
- Compact package enabling compactness of sets.
- High f_T and small c_{re} ($f_T=750\text{MHz}$ typ, $c_{re}=0.6$ typ).

Package Dimensions

unit:mm

2018A



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*		180*	
Gain-Bandwidth Product	f_T	$V_{CE}=6\text{V}, I_C=4\text{mA}$	450	750		MHz
Feedback 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 2SC3142 are classified as follows according to h_{FE} at 1mA :

40	2	80	60	3	120	90	4	180
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(Note) Marking : J

 h_{FE} rank : 2, 3, 4

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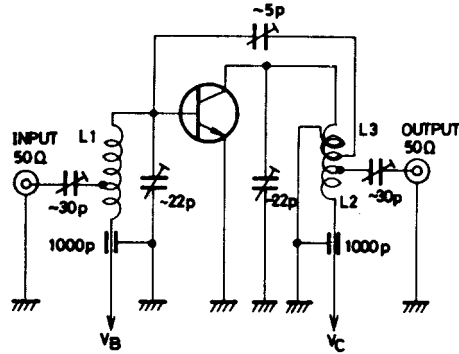
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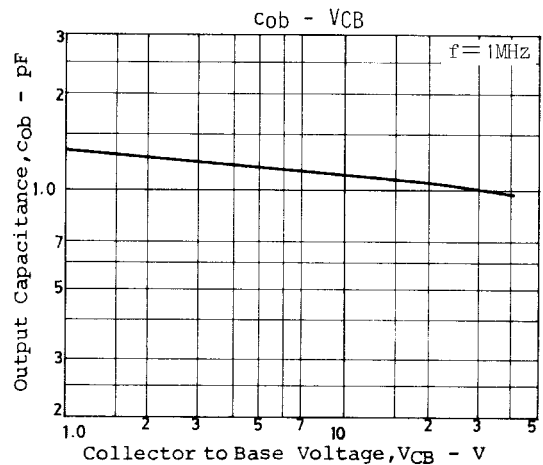
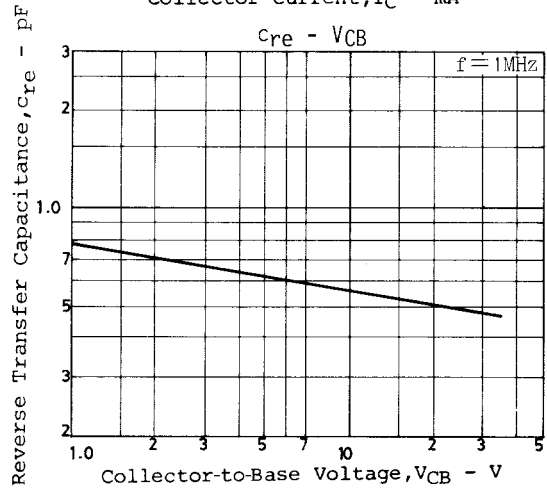
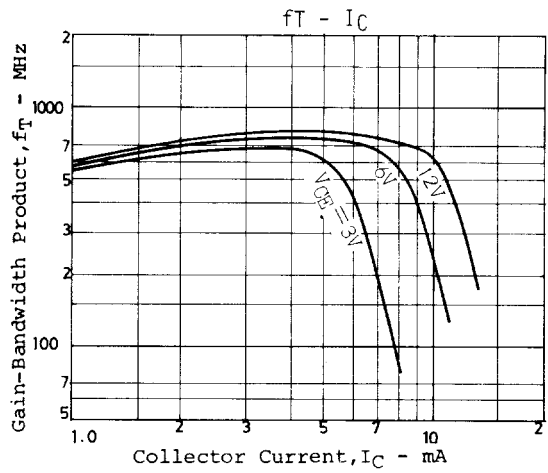
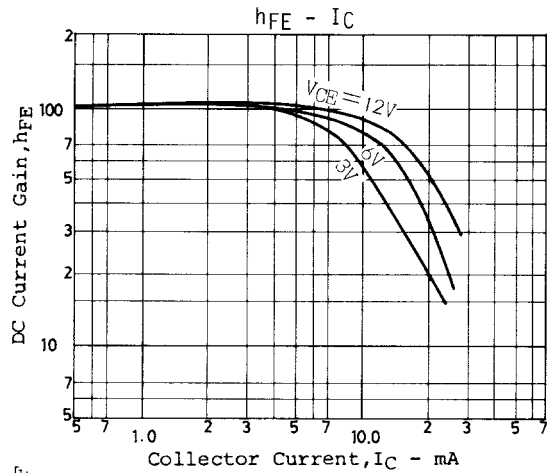
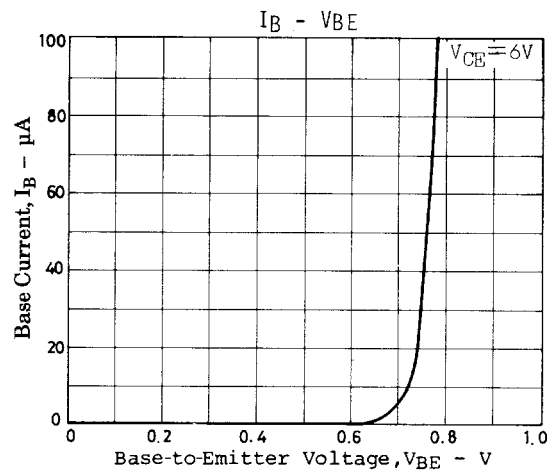
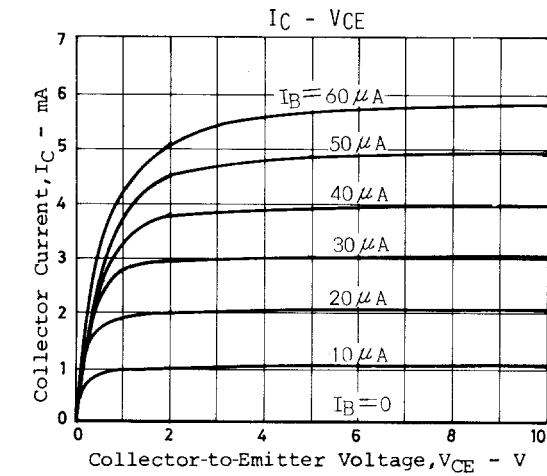
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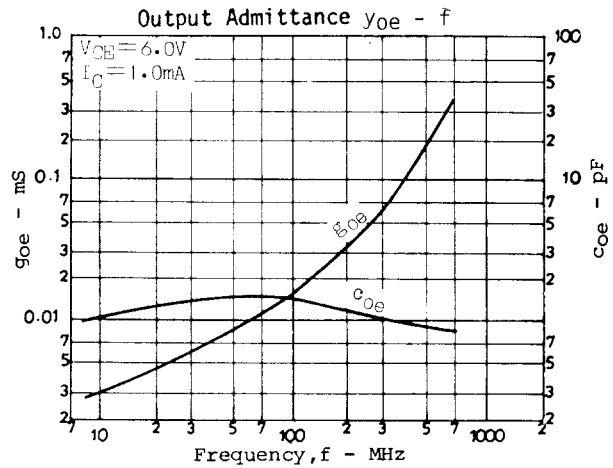
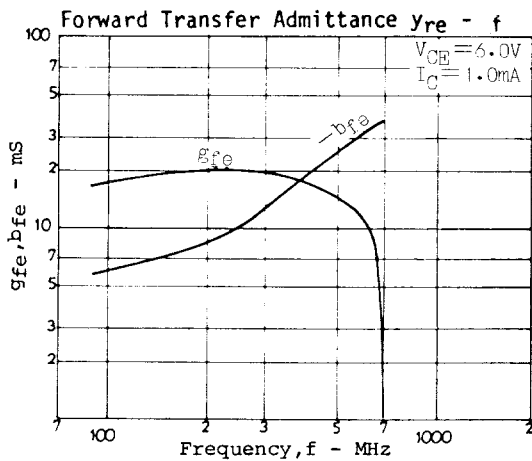
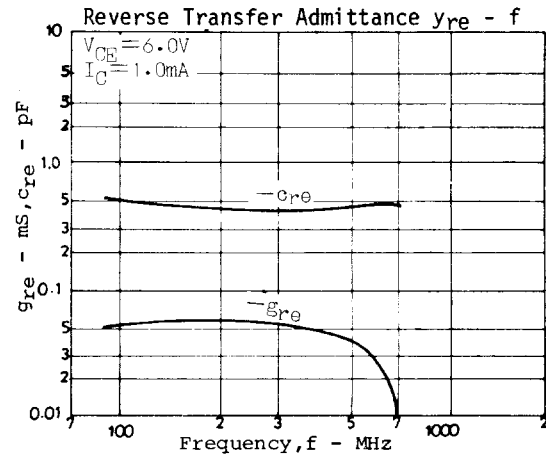
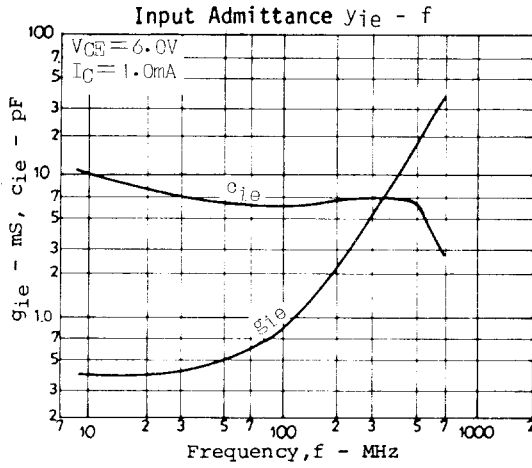
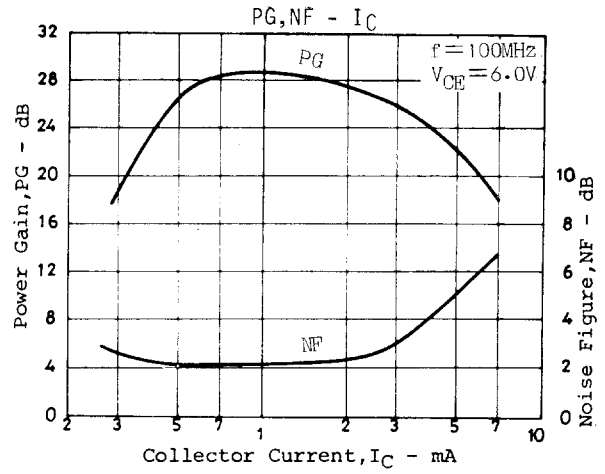
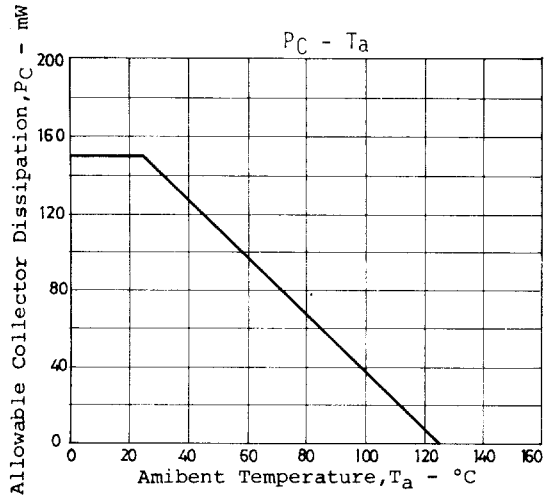
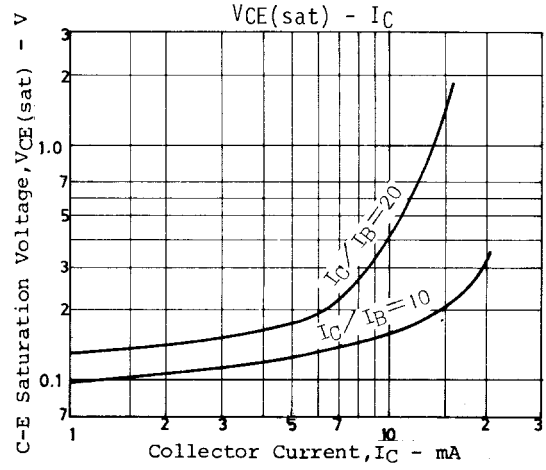
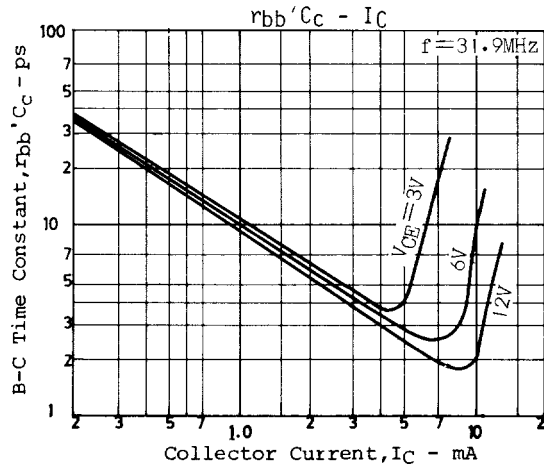
NF, PG Test Circuit

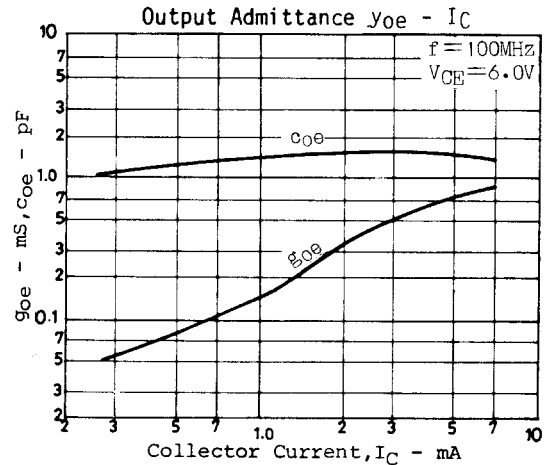
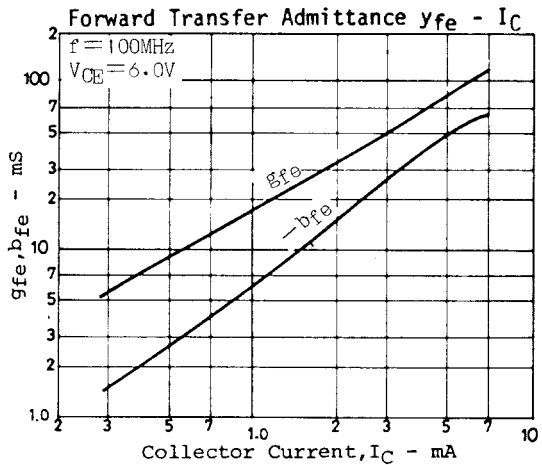
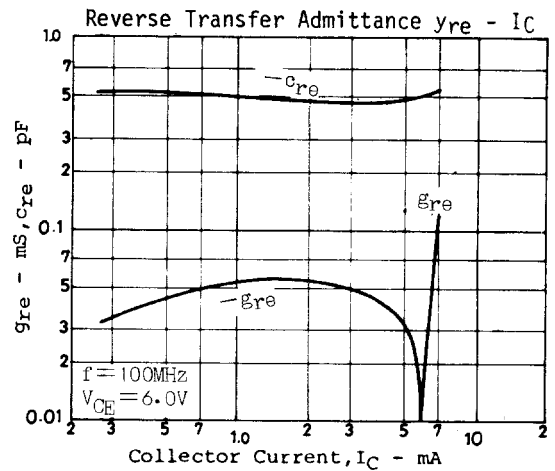
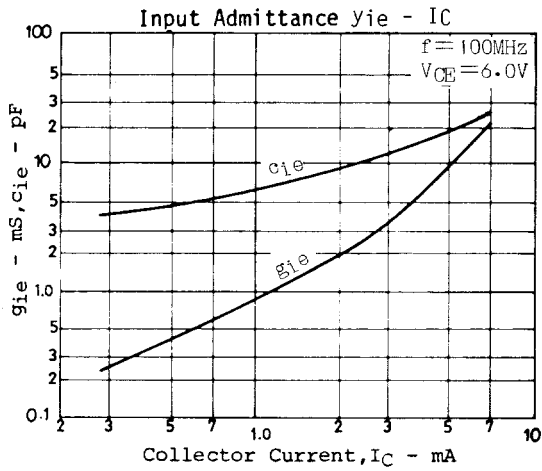
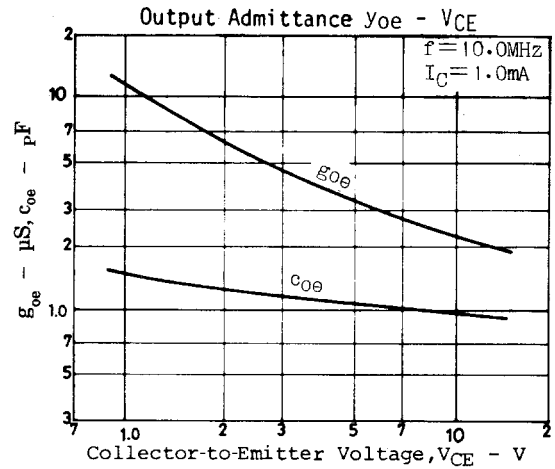
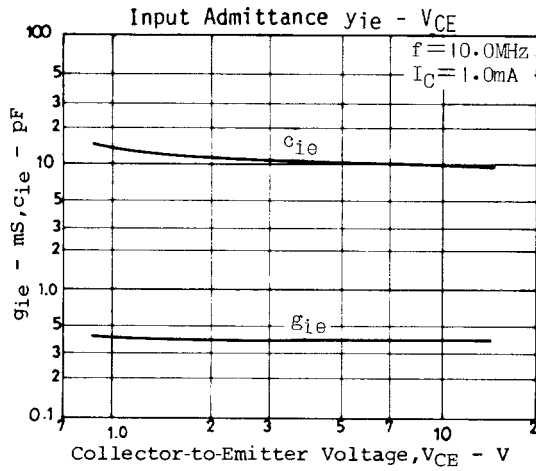
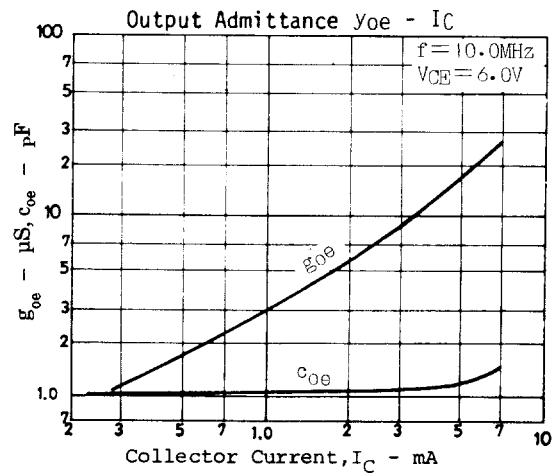
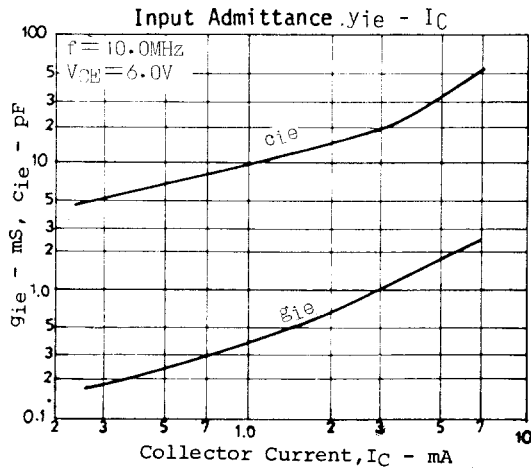


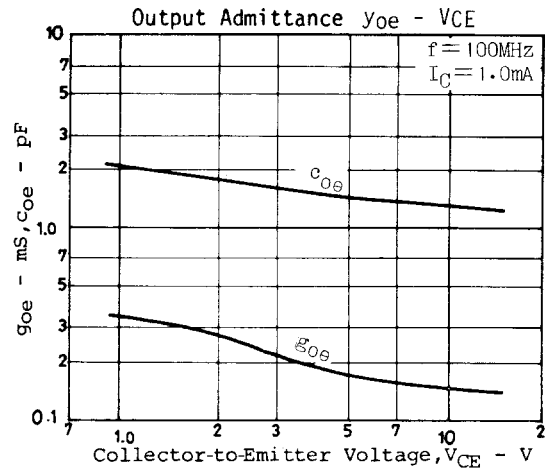
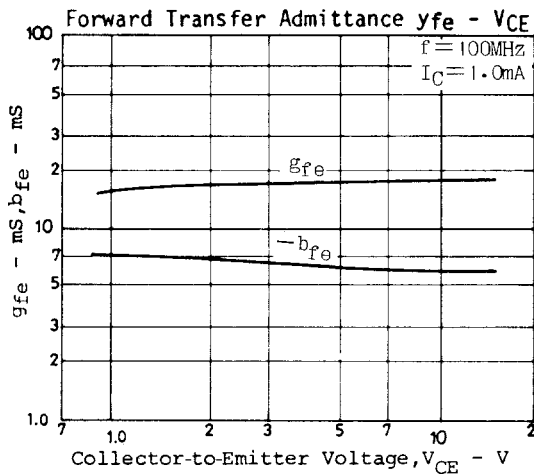
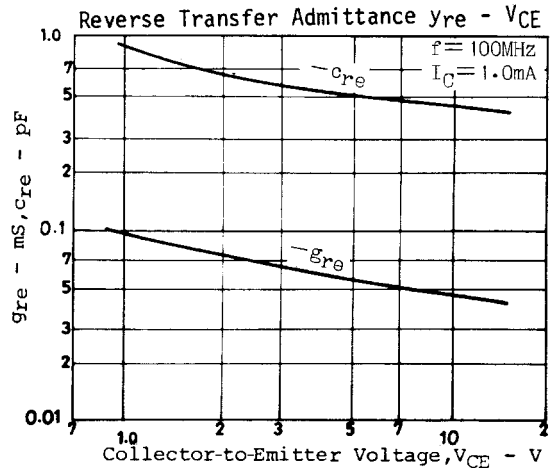
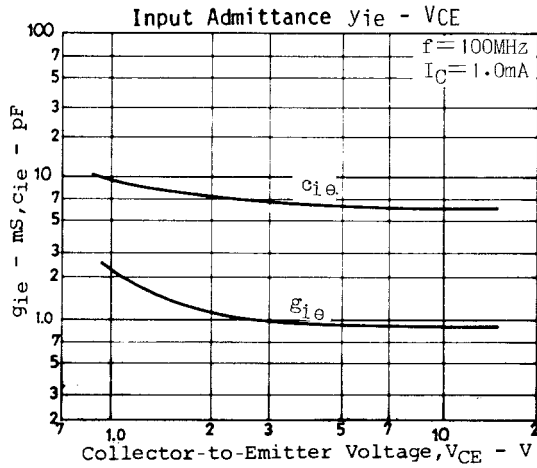
L1 : 1mmØ plated wire 10mmØ 5T, pitch 15mm, tap : 2T from base.
 L2 : 1mmØ plated wire 10mmØ 7T, pitch 10mm, tap : 2T from V_C .
 L3 : 1mmØ enameled wire 10mmØ 3T, pitch 10mm.

Unit (capacitance : F)









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