

SANYO	No.851G	2SA1177
		PNP Epitaxial Planar Silicon Transistor

HF Amp Applications

Use

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

Features

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

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

			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	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

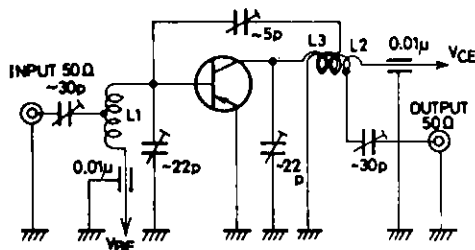
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CB}=-10V, I_E=0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-6V, I_C=-1\text{mA}$	60*		320*	
Gain-Bandwidth Product	f_T	$V_{CE}=-6V, I_C=-1\text{mA}$	150	230		MHz
Feedback Capacitance	c_{re}	$V_{CB}=-6V, f=1\text{MHz}$		1.1	1.7	pF
B to C Time Constant	r_{bb}, c_c	$V_{CB}=-6V, I_C=-1\text{mA}, f=31.9\text{MHz}$		11	20	ps
Noise Figure	NF	$V_{CE}=-6V, I_C=-1\text{mA}, f=100\text{MHz}$		2.5		dB
Power Gain	PG	$V_{CE}=-6V, I_C=-1\text{mA}, f=100\text{MHz}$		22		dB

* 2SA1177 is classified as follows according to h_{FE} at 1mA.

60	D	120	100	E	200	160	F	320
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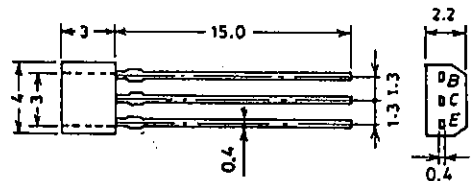
NF, PG Test Circuit



Unit(Capacitance: F)

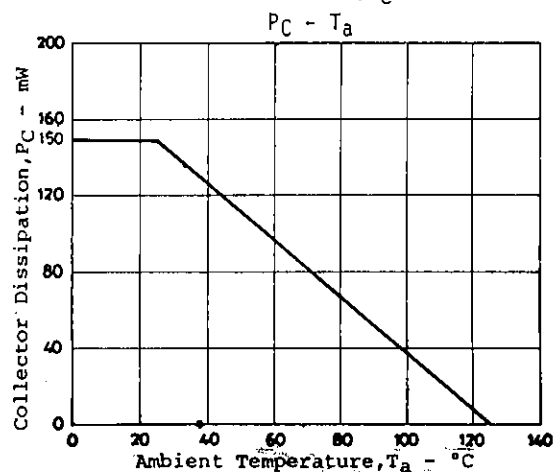
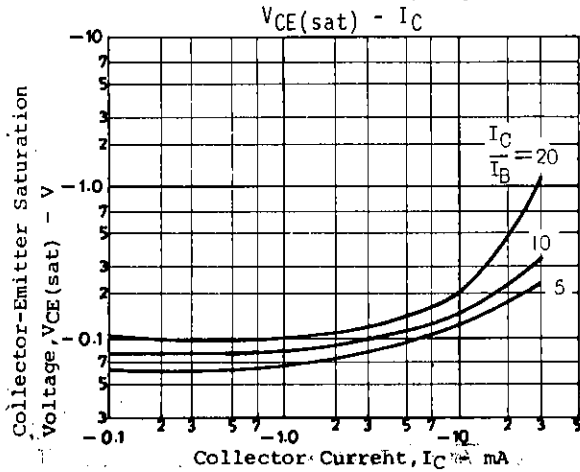
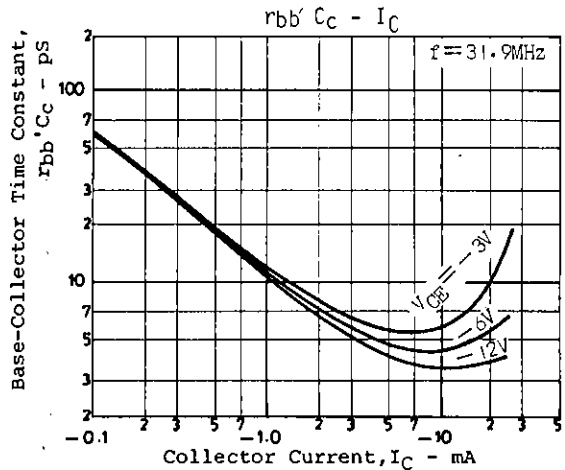
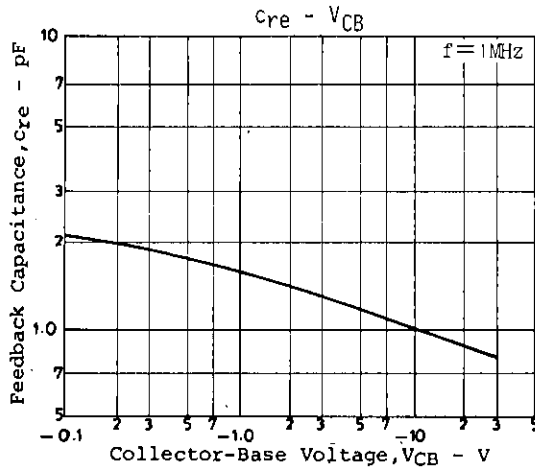
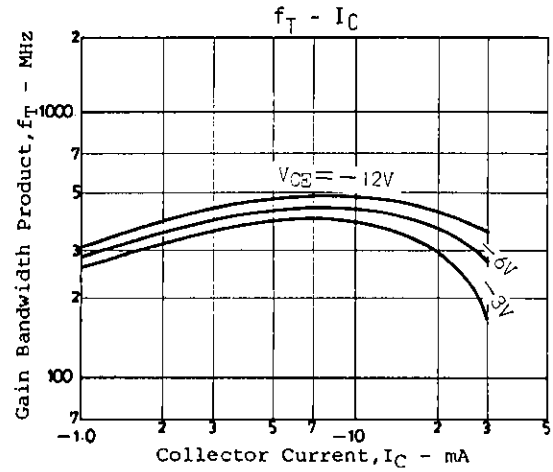
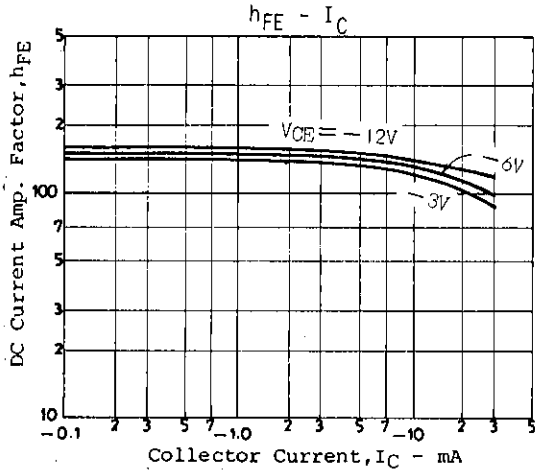
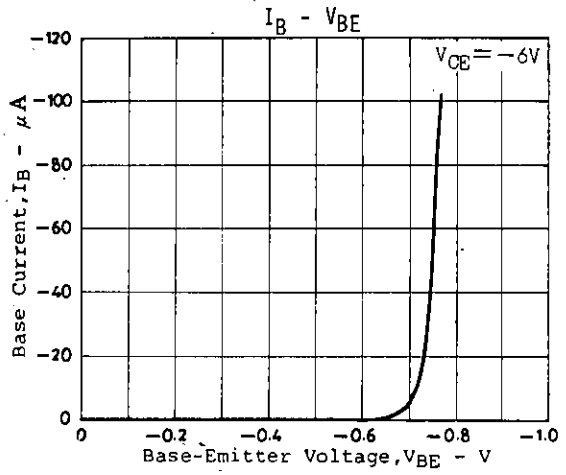
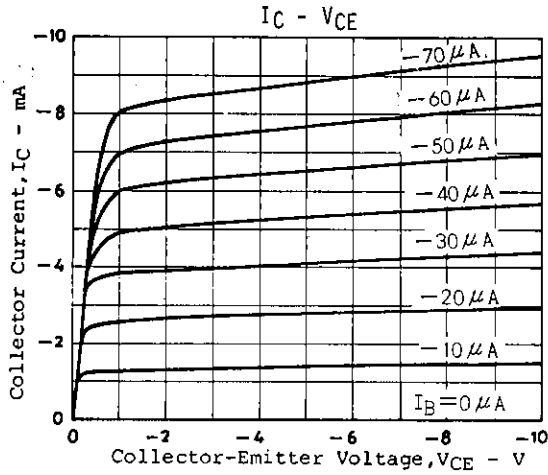
- L₁: 1mm ϕ plated wire 10mm ϕ 5T, tapped at 2T from V_{BE} side.
- L₂: 1mm ϕ plated wire 10mm ϕ 7T, tapped at 1T from V_{CE} side.
- L₃: 1mm ϕ enameled wire 10mm ϕ 3T.

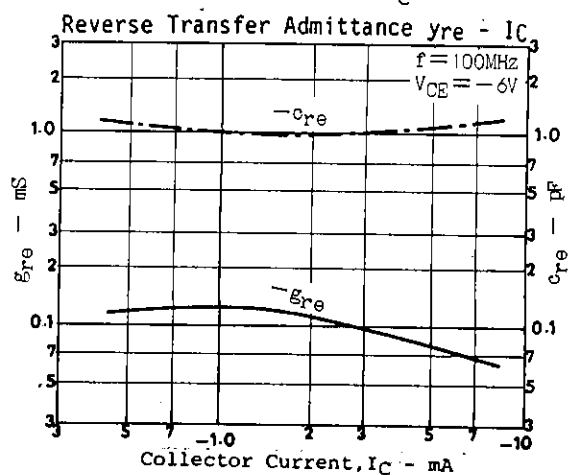
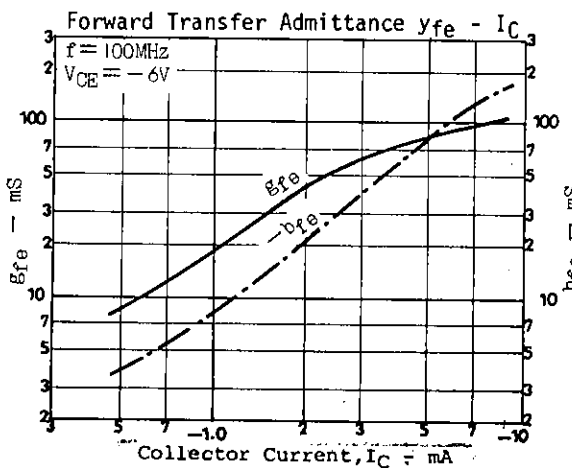
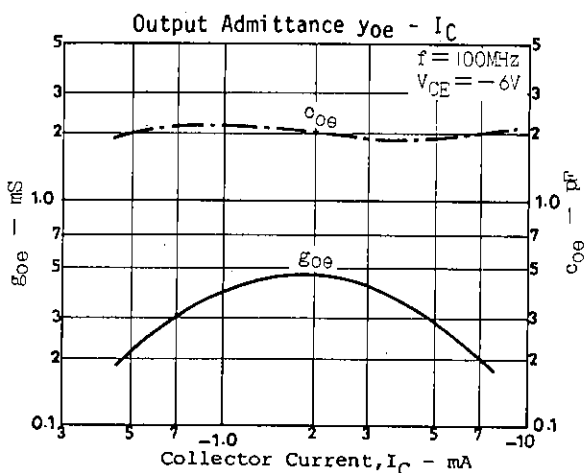
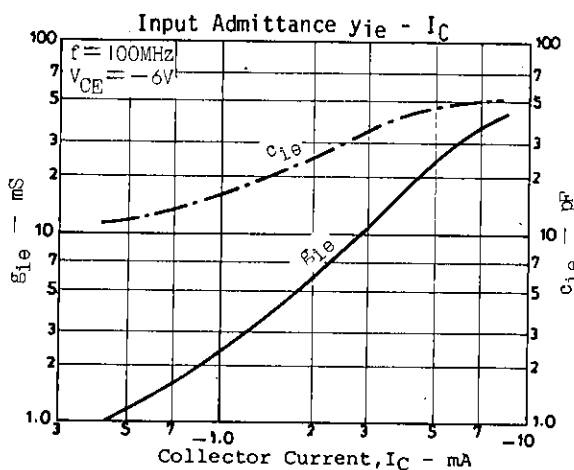
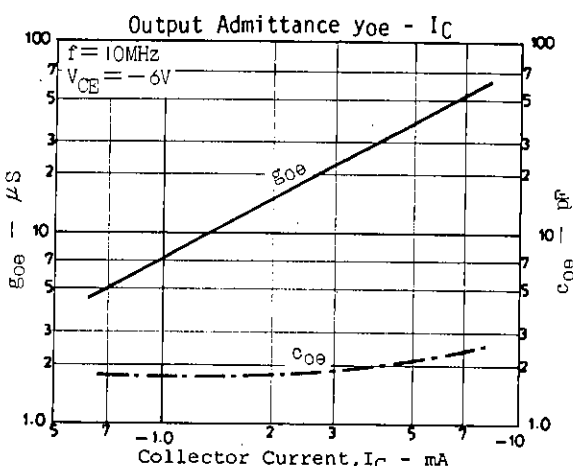
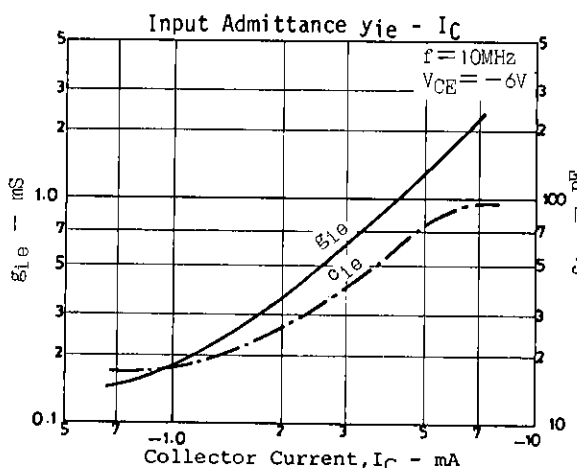
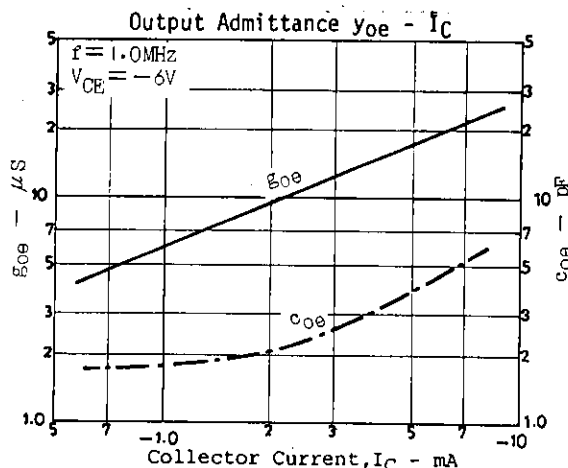
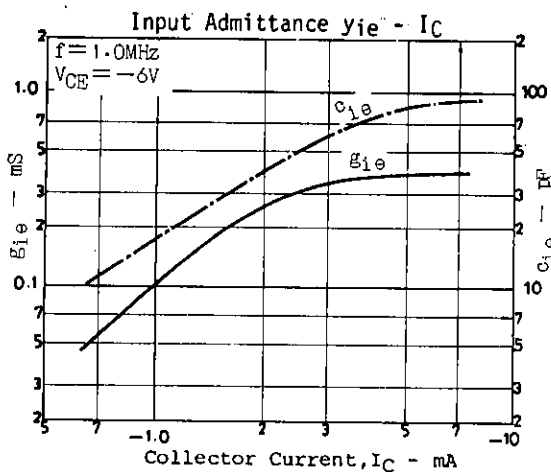
Package Dimensions 2033
(unit: mm)

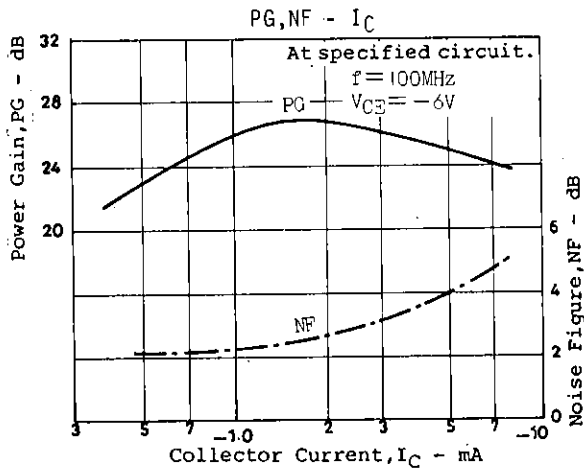
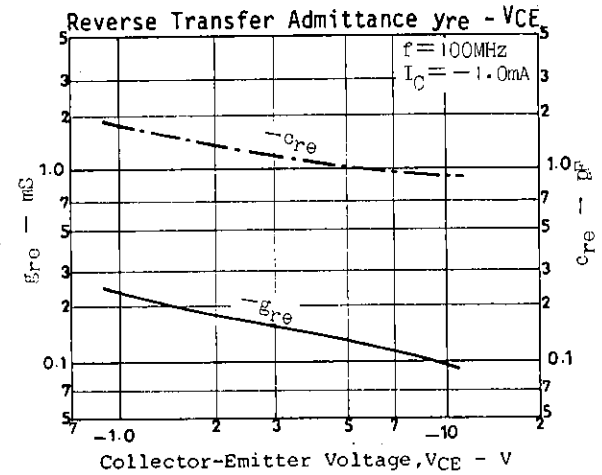
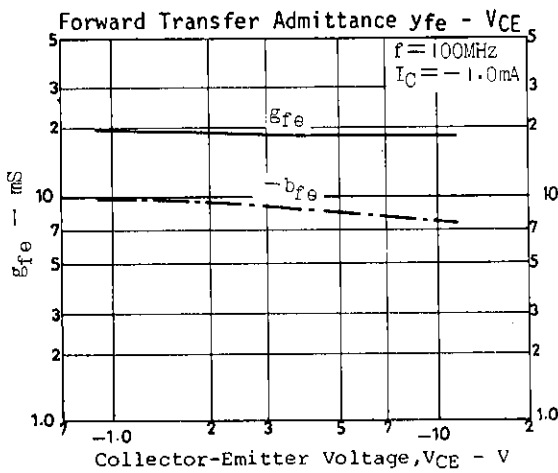
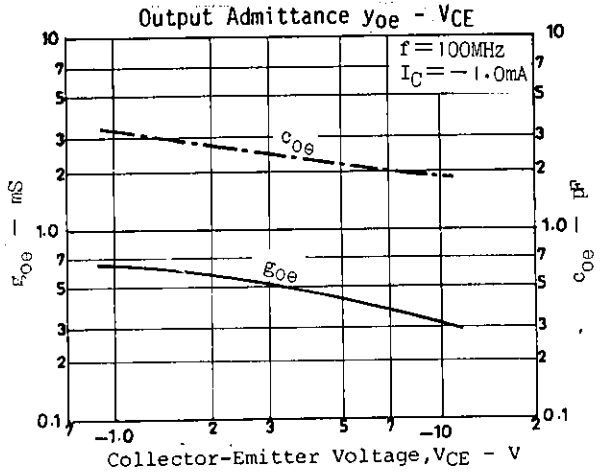
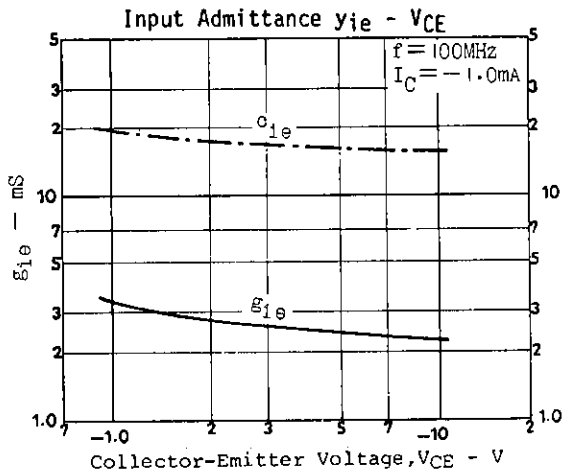


B: Base
C: Collector
E: Emitter

SANYO: SPA







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