

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 $T_a=25^\circ\text{C}$

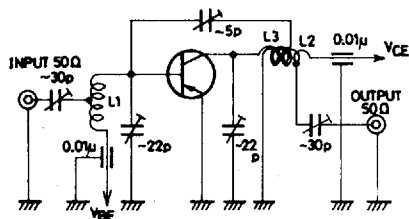
			unit
Collector to Base Voltage	V_{CBO}	-30	V
Collector to Emitter Voltage	V_{CEO}	-20	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-30	mA
Collector Dissipation	P_C	150	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

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

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

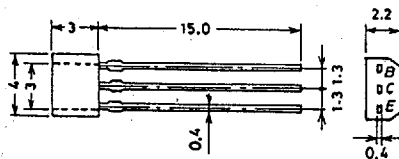
* 2SA1177 is classified as follows according to h_{FE} at 1mA.

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

- L_1 : 1mm ϕ plated wire 10mm ϕ 5T, tapped at 2T from V_{BE} side.
 L_2 : 1mm ϕ plated wire 10mm ϕ 7T, tapped at 1T from V_{CE} side.
 L_3 : 1mm ϕ enameled wire 10mm ϕ 3T.

Unit(Capacitance: F)

**Case Outline 2033
(unit:mm)**

B: Base
 C: Collector
 E: Emitter

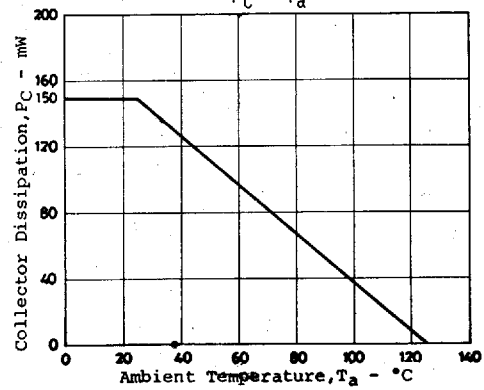
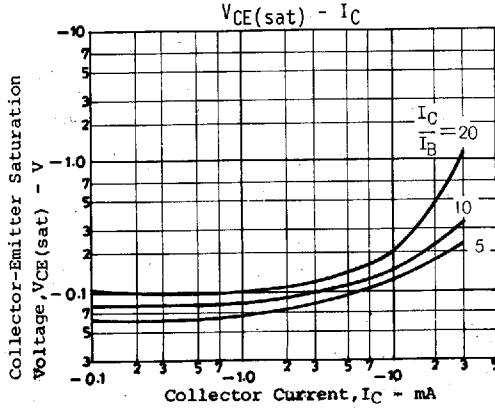
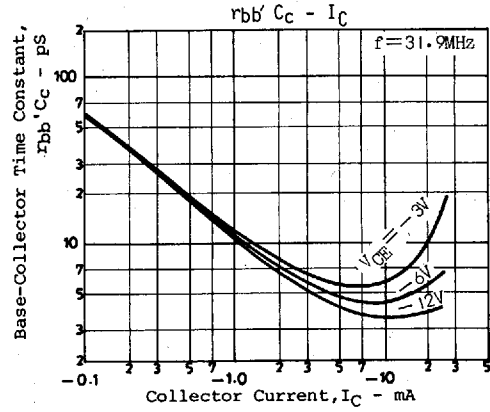
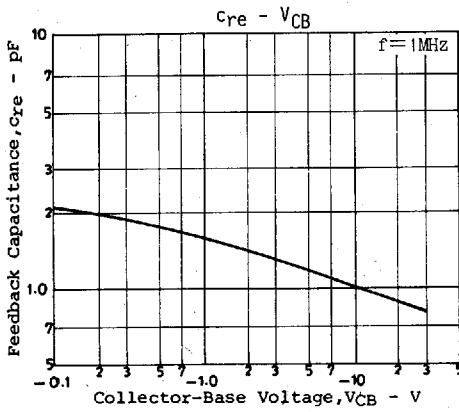
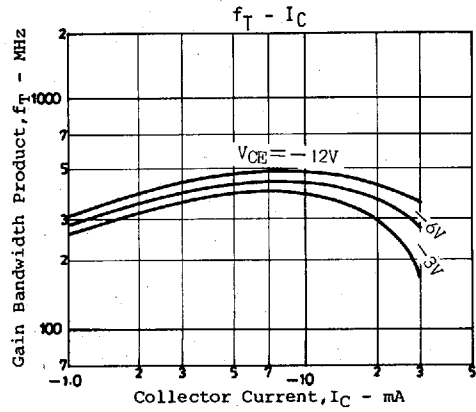
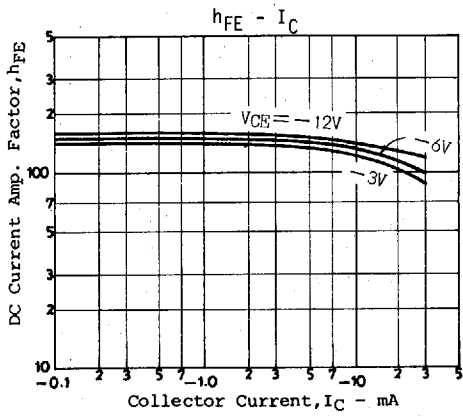
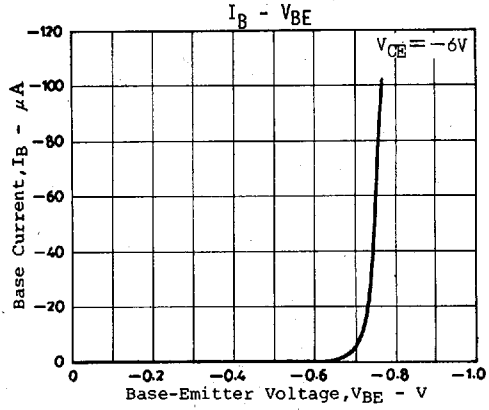
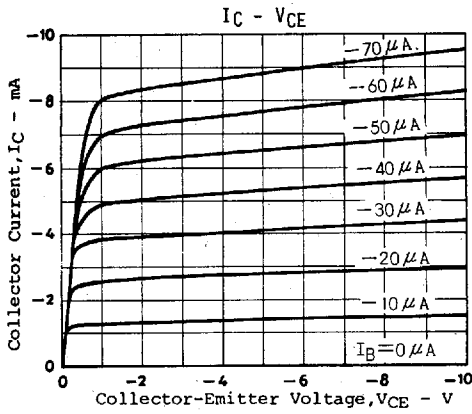
SANYO: SPA

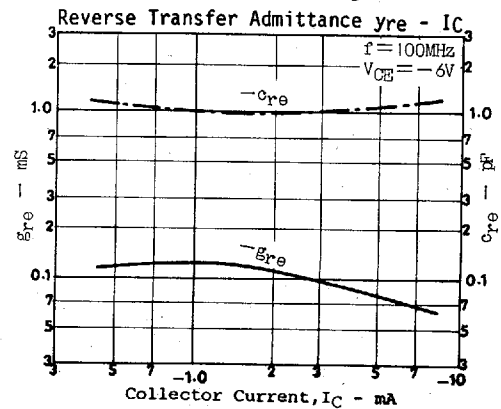
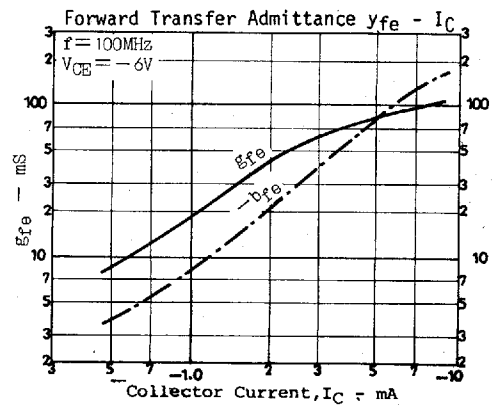
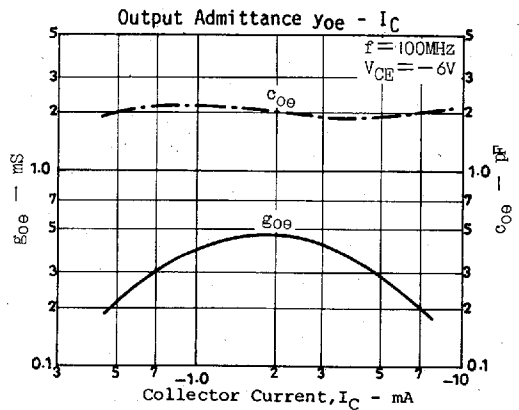
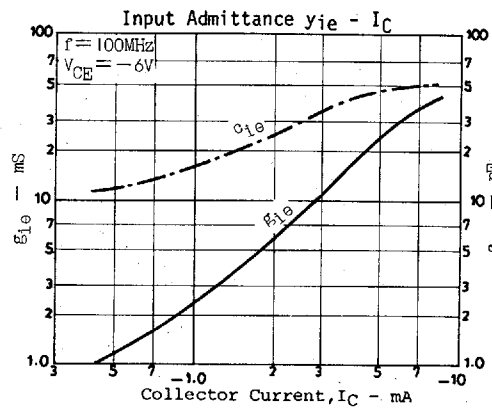
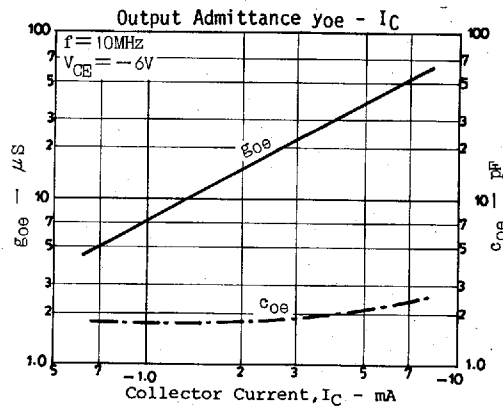
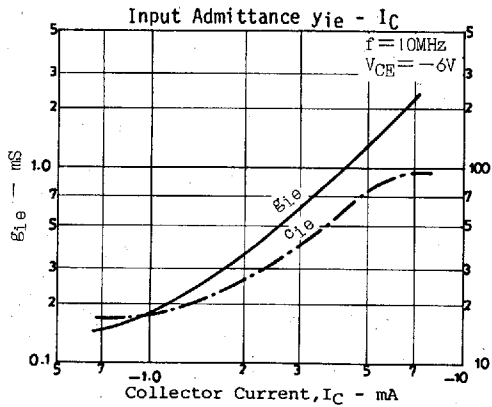
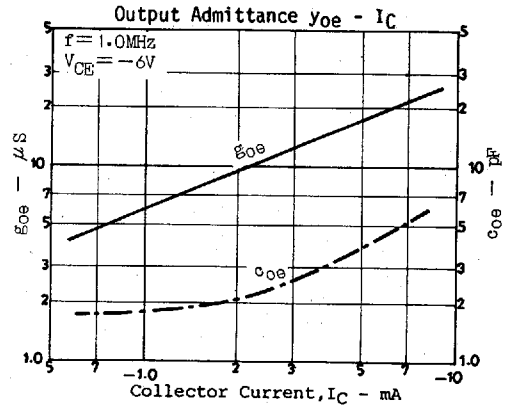
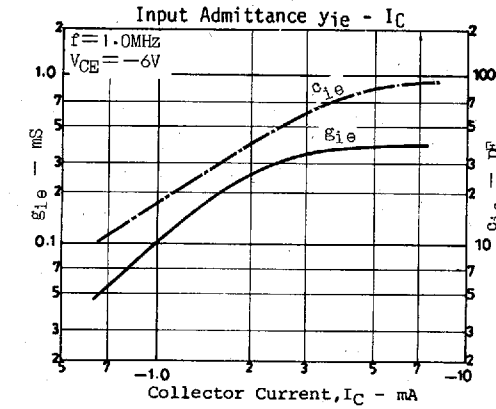
Specifications and information herein are subject to change without notice.

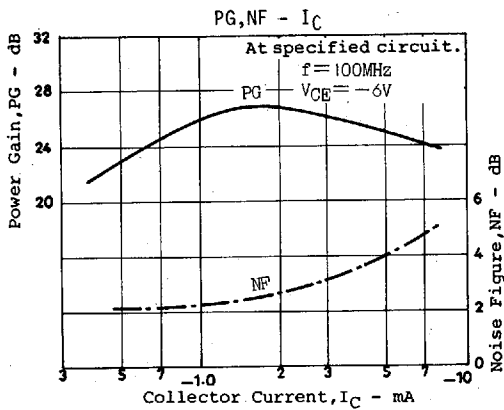
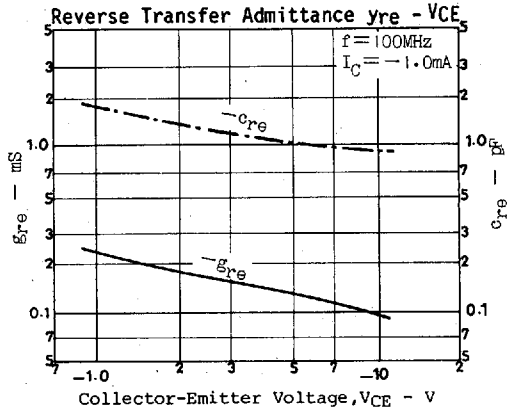
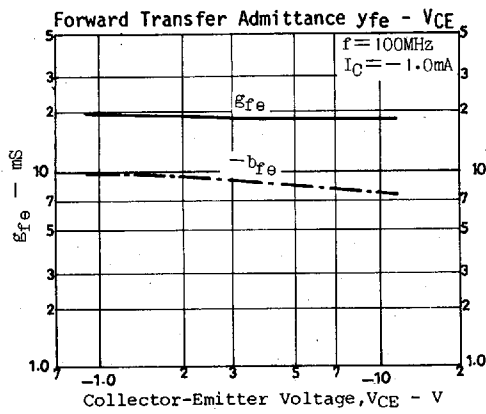
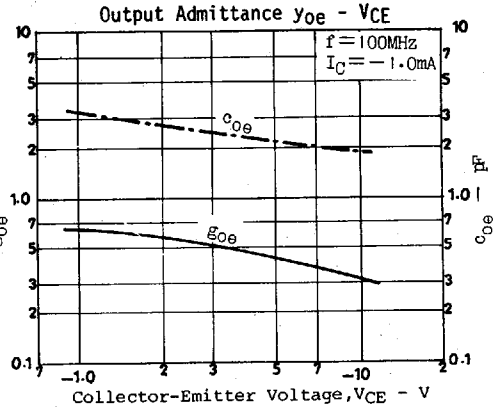
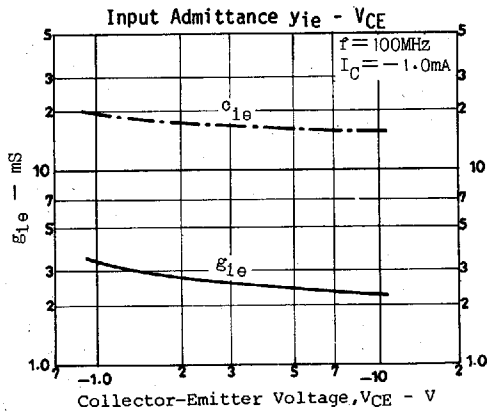
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3187AT/3075KI/1313/8182/2172KI/TS No.851-1/4



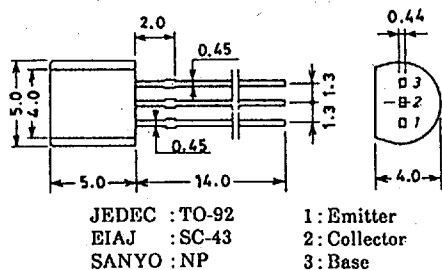




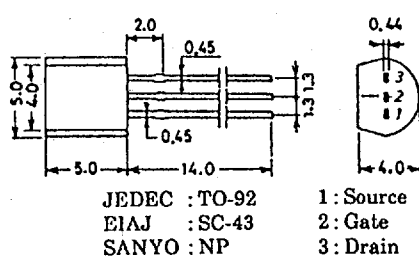
CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- All of Sanyo lead formed small signal transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

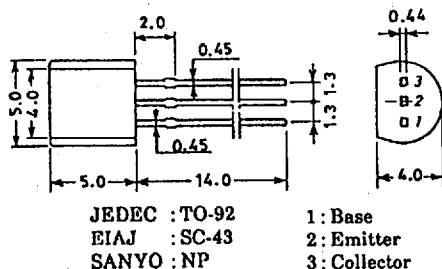
Case Outline 2003A/2003B (unit : mm)



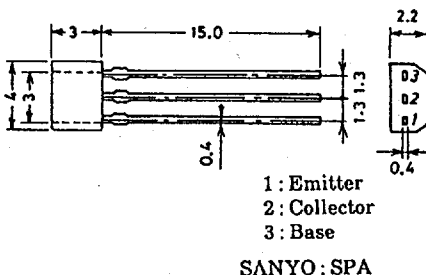
Case Outline 2019A/2019B (unit : mm)



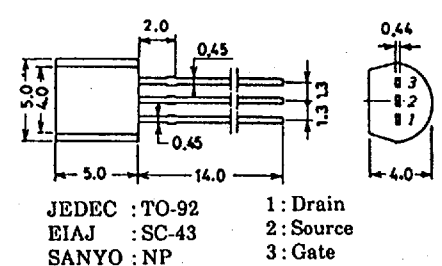
Case Outline 2004A (unit : mm)



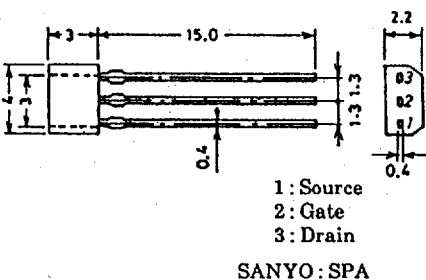
Case Outline 2033 (unit : mm)



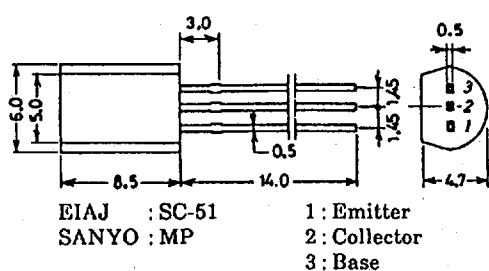
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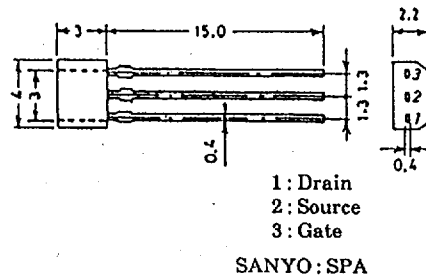
Case Outline 2034/2034A (unit : mm)



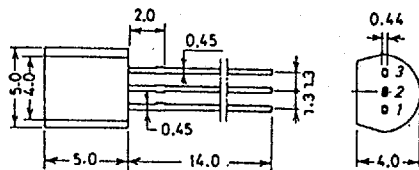
Case Outline 2006A (unit : mm)



Case Outline 2040 (unit : mm)



Case Outline 2061 (unit : mm)



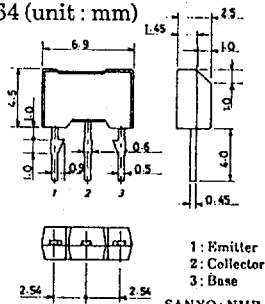
JEDEC : TO-92

EIAJ : SC-43

SANYO : NP

- 1: Emitter
- 2: Base
- 3: Collector

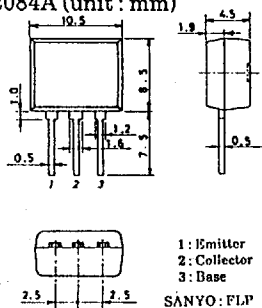
Case Outline 2064 (unit : mm)



SANYO : NMP

- 1: Emitter
- 2: Collector
- 3: Base

Case Outline 2084A (unit : mm)



SANYO : FLIP

- 1: Emitter
- 2: Collector
- 3: Base