

2SC2814

2018A

NPN Epitaxial Planar Silicon Transistor

T-31-15

**High-Frequency General-Purpose
Amp Applications**

©693F

Features

- . Very small package enabling compactness and slimness of sets.
- . High f_T and small c_{re} . ($f_T=320\text{MHz}$ typ, $c_{re}=0.95\text{pF}$ 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	$^\circ\text{C}$

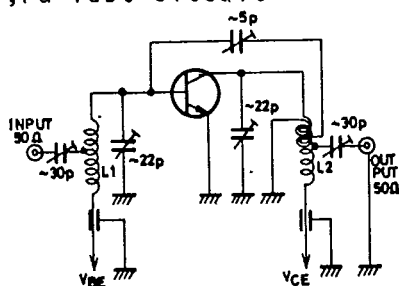
Electrical Characteristics at $T_a=25^\circ\text{C}$

			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}	$V_{CE}=6\text{V}, I_C=1\text{mA}$	40*		270*	
Gain-Bandwidth Product	f_T	$V_{CE}=6\text{V}, I_C=1\text{mA}$	200	320		MHz
Reverse Transfer Capacitance	c_{re}	$V_{CB}=6\text{V}, f=1\text{MHz}$	0.7	0.95	1.2	pF
Base to Collector Time Constant	$r_{bb}'C_C$	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=31.9\text{MHz}$		12	20	ps
Noise Figure	NF	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$		3.0		dB
Power Gain	PG	$V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$		25		dB

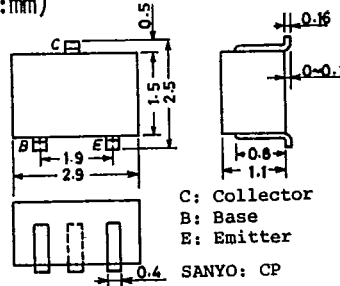
* : The 2SC2814 is classified as follows by h_{FE} at 1mA:

40	2	80	60	3	120	90	4	180	135	5	270
----	---	----	----	---	-----	----	---	-----	-----	---	-----

(Note) Marking : F

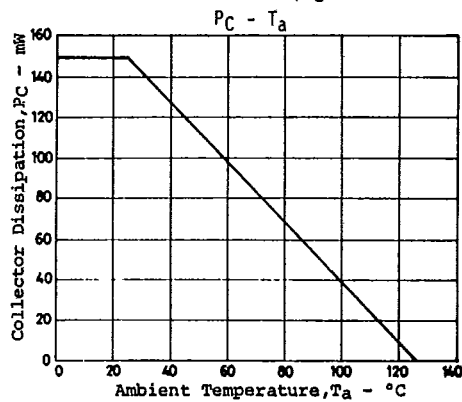
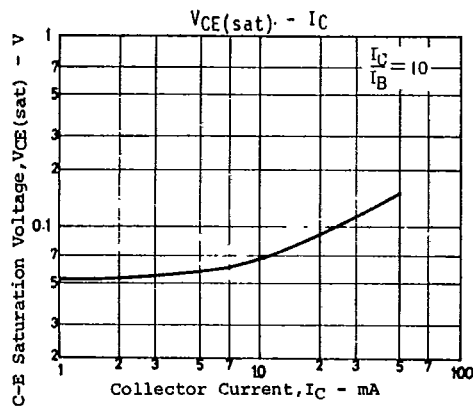
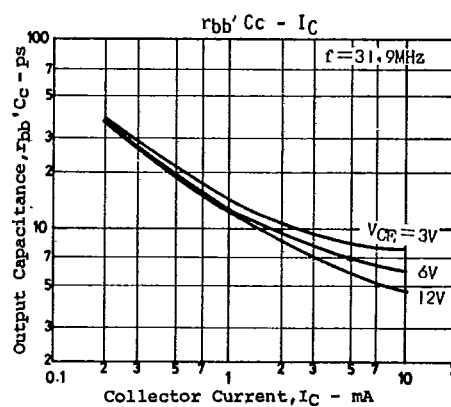
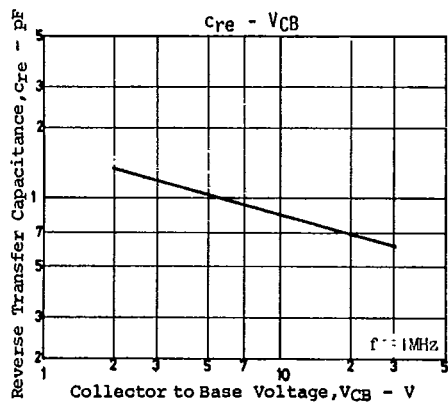
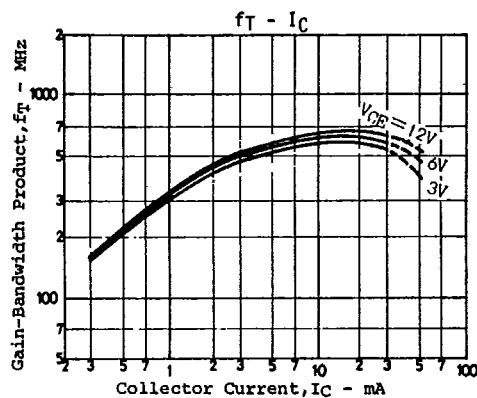
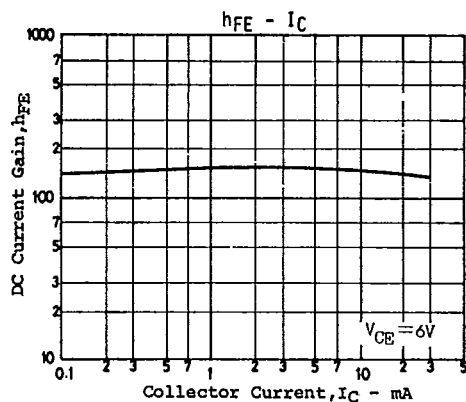
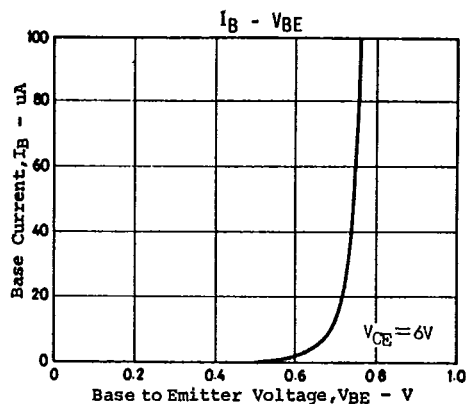
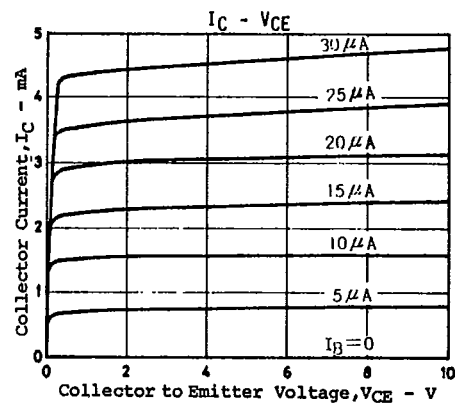
 h_{FE} rank: 2,3,4,5**NF, PG Test Circuit**

- L1: 1mm ϕ plated wire 10mm ϕ 4T, tap: 2T from V_{BE} side.
 L2: 1mm ϕ plated wire 10mm ϕ 7T, tap: 1T from V_{CE} side.
 L3: 1mm ϕ enameled wire 10mm ϕ 3T.

**Case Outline 2018A
(unit:mm)**

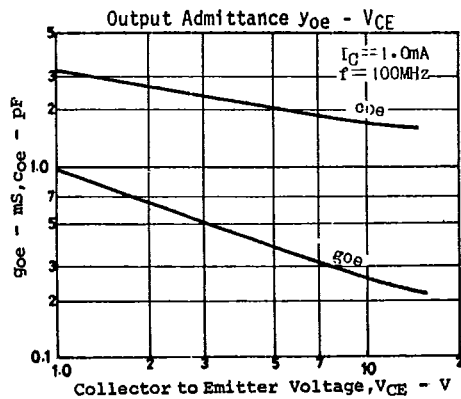
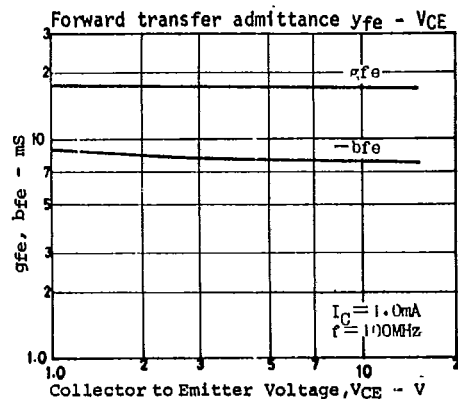
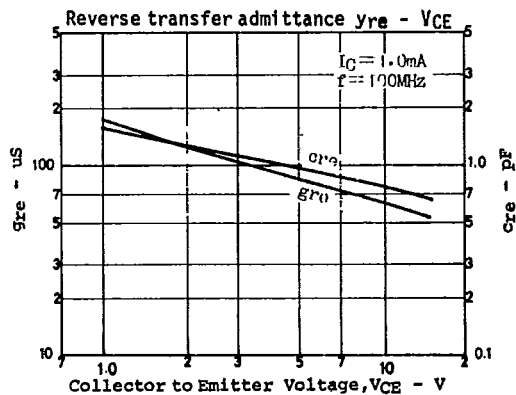
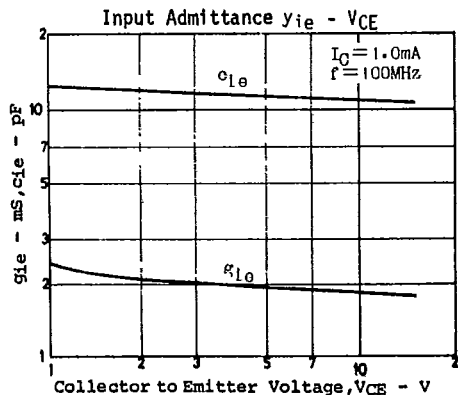
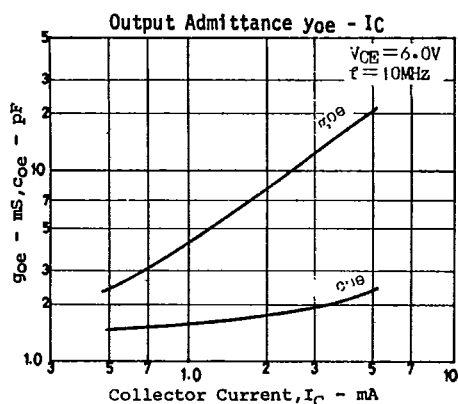
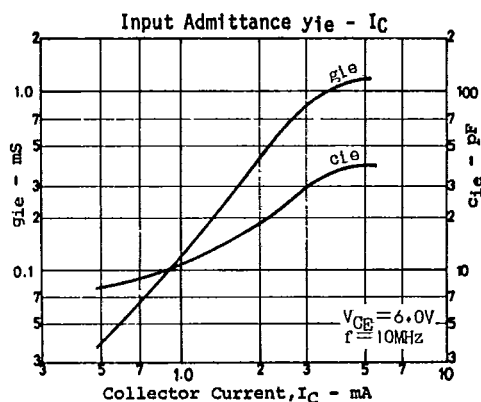
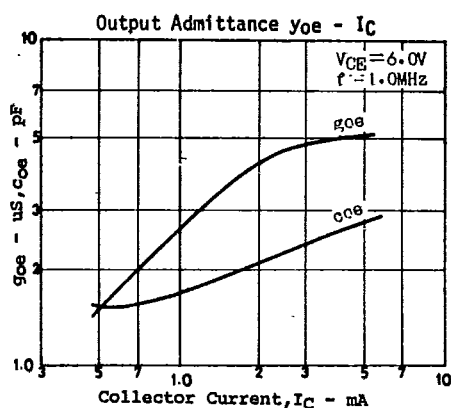
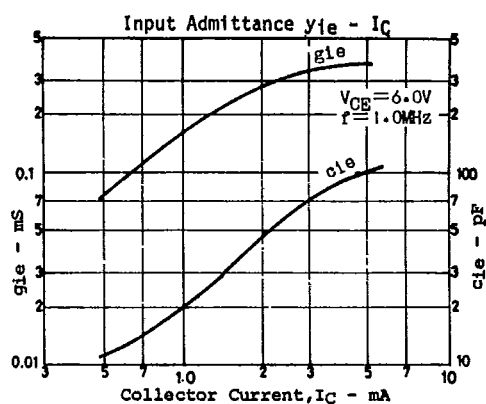
2SC2814

T-31-15



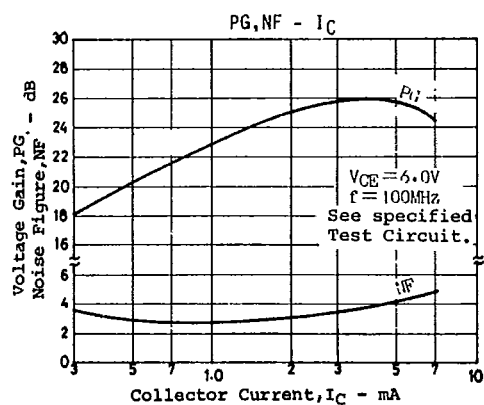
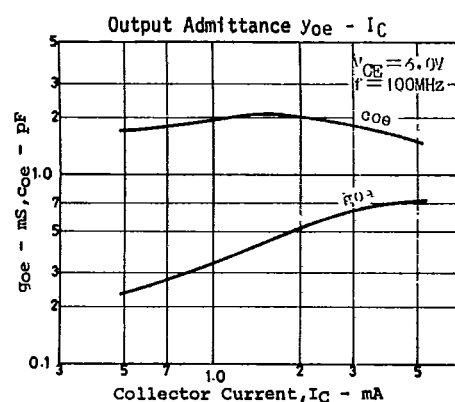
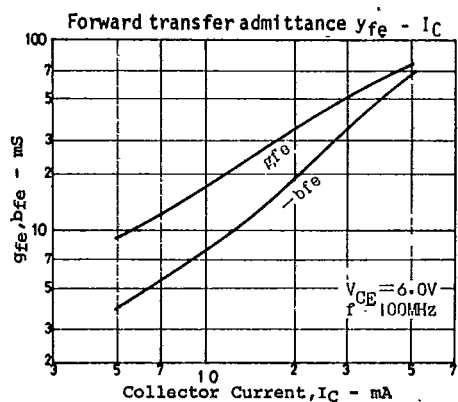
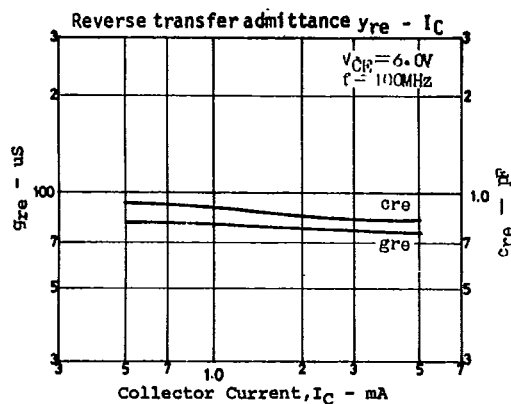
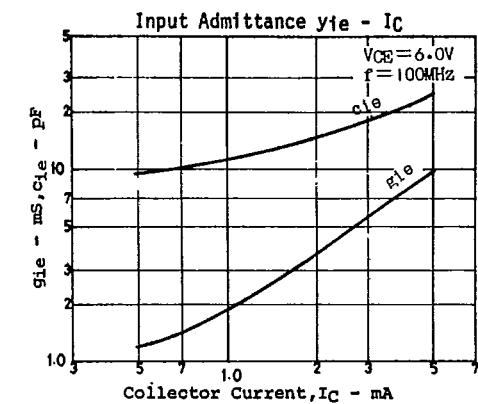
2SC2814

T-31-15



2SC2814

T-31-15

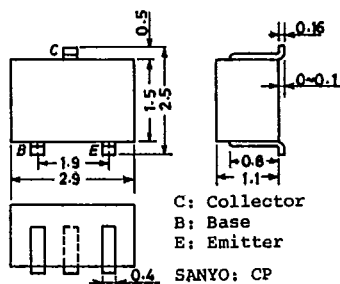


T-91-20

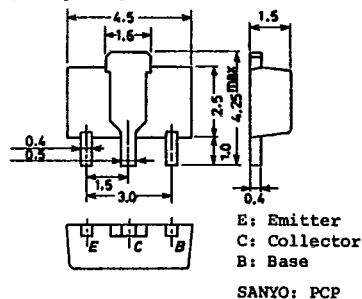
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- All of Sanyo surface mount 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.

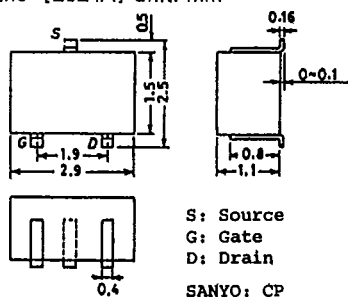
Case Outline—[2018A] unit: mm



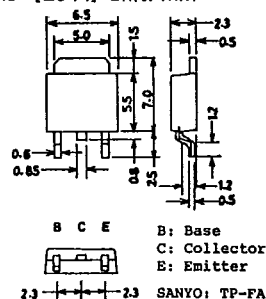
Case Outline—[2038] unit: mm



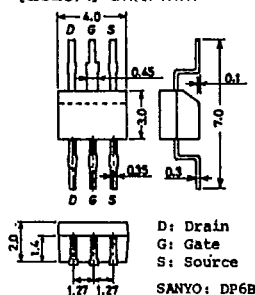
Case Outline—[2024A] unit: mm



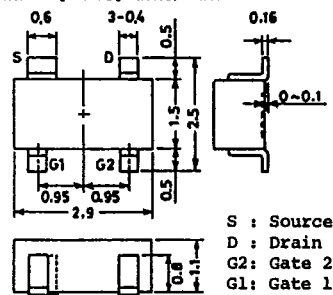
Case Outline—[2044] unit: mm



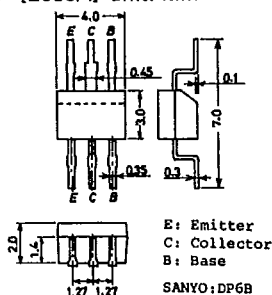
Case Outline—[2028A] unit: mm



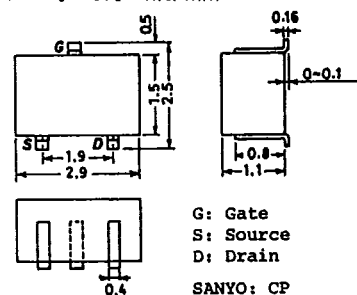
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm

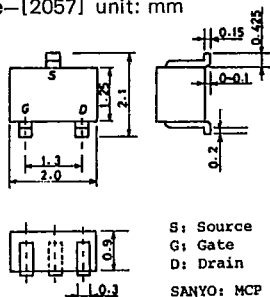


Case Outline—[2050] unit: mm

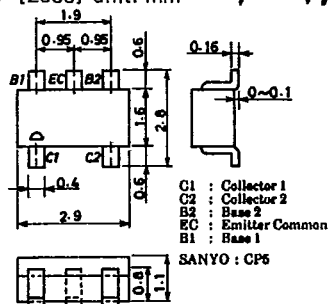


T-91-20

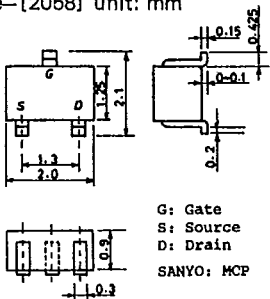
Case Outline—[2057] unit: mm



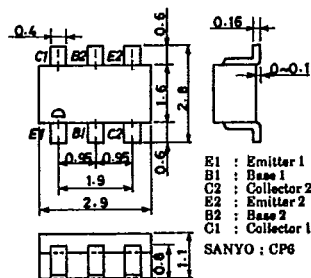
Case Outline—[2066] unit: mm



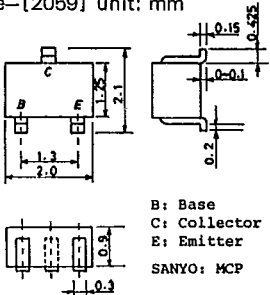
Case Outline—[2058] unit: mm



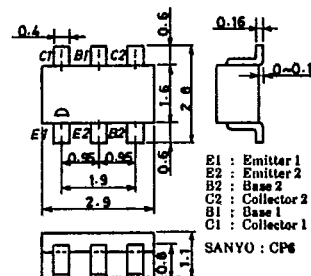
Case Outline—[2067] unit: mm



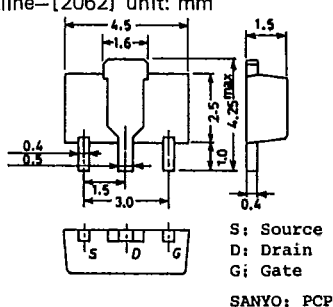
Case Outline—[2059] unit: mm



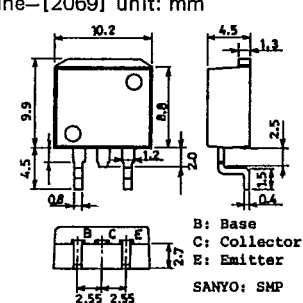
Case Outline—[2068] unit: mm



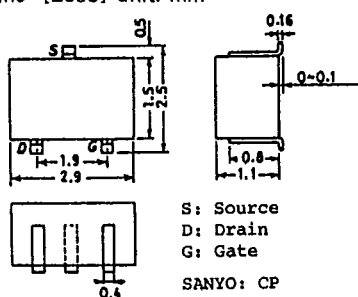
Case Outline—[2062] unit: mm



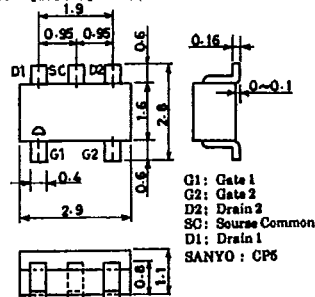
Case Outline—[2069] unit: mm



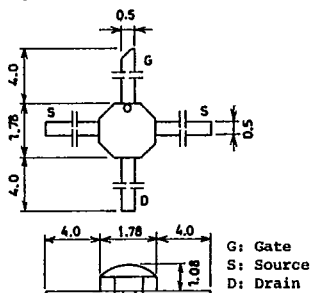
Case Outline—[2065] unit: mm



Case Outline—[2070] unit: mm

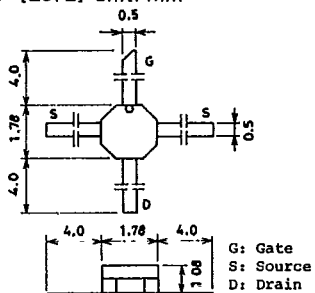


Case Outline—[2071] unit: mm



T-9120

Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm

