

2SC4400

T-31-15

2059

NPN Epitaxial Planar Silicon Transistor

High-Frequency General-Purpose Amp Applications

©3195

Features

- High power gain
- High cutoff frequency
- Small c_{ob} , c_{re}
- Very small-sized package permitting the 2SC4400-applied sets to be made small and slim

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

			unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	18	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Collector Dissipation	P_C	150	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

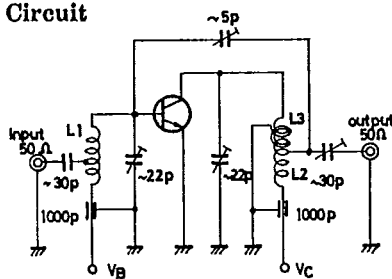
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 18\text{V}, I_E = 0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 2\text{V}, I_C = 0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 5\text{mA}$	60*		270*	
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 5\text{mA}$		750		MHz
Output Capacitance	c_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		0.7	1.2	pF
Reverse Transfer Capacitance	c_{re}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	0.45			pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.2	V
B-C Time Constant	$r_{bb}'c_c$	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 31.9\text{MHz}$			23	ps
Power Gain	PG	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$		28		dB

*: The 2SC4400 is classified by 5mA h_{FE} as follows.

60	3	120	90	4	180	135	5	270
----	---	-----	----	---	-----	-----	---	-----

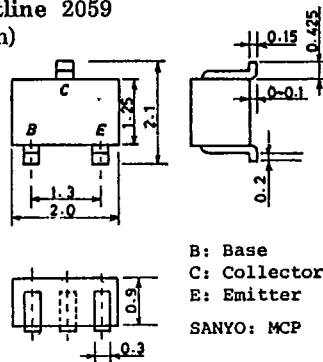
Marking: RT
 h_{FE} rank: 3,4,5

PG Test Circuit



- L_1 : 1mm ϕ plated wire, 10mm ϕ 5T, pitch 15mm, tap: 2T from base side
- L_2 : 1mm ϕ plated wire, 10mm ϕ 7T, pitch 10mm, tap: 2T from V_C side
- L_3 : 1mm ϕ enamel wire, 10mm ϕ 3T, pitch 10mm

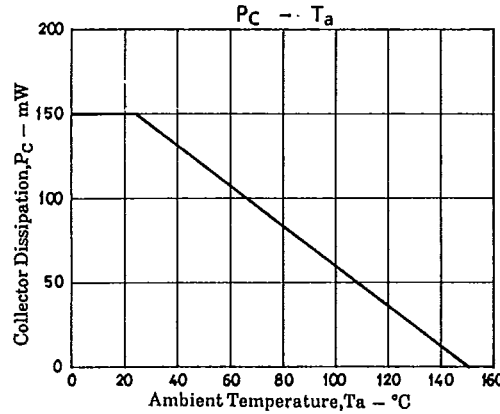
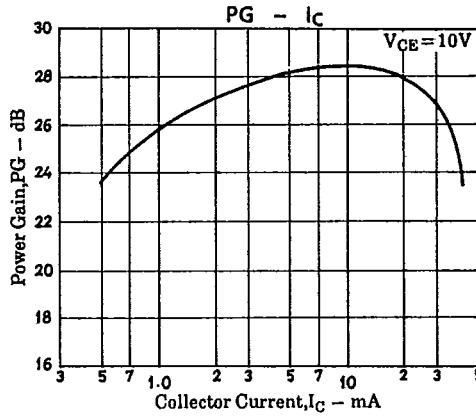
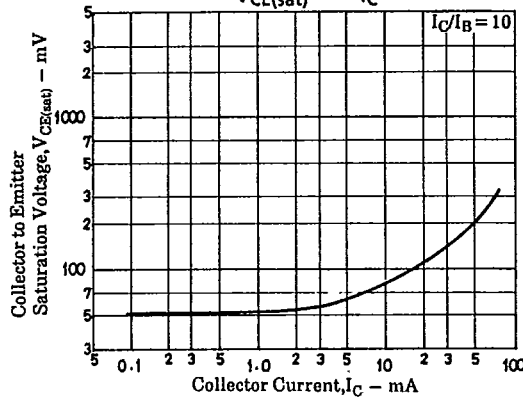
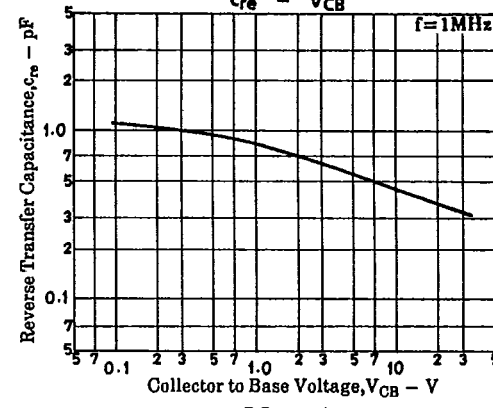
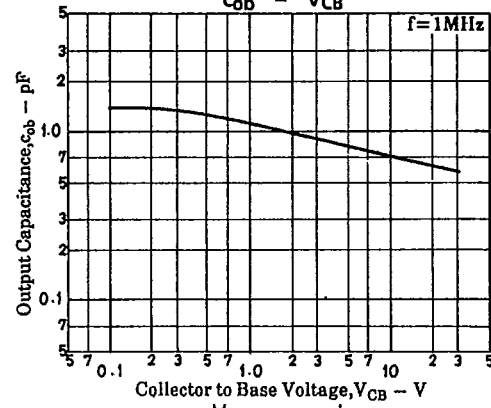
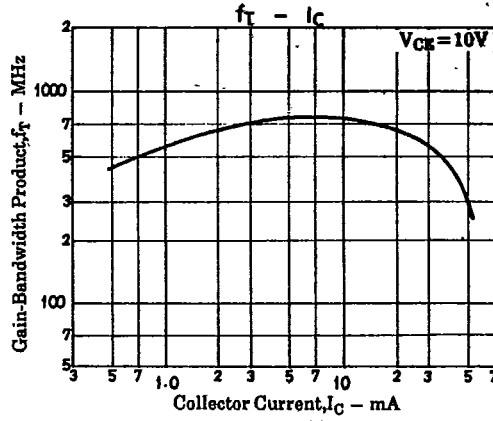
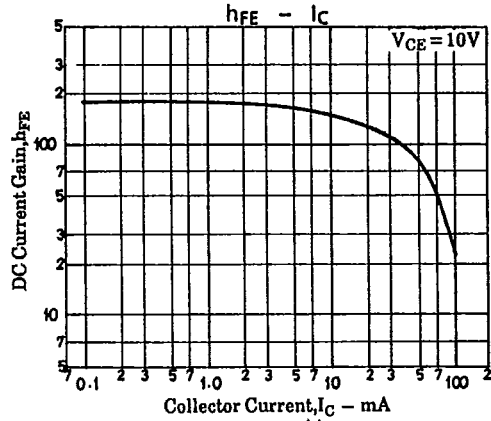
Case Outline 2059 (unit: mm)



B: Base
 C: Collector
 E: Emitter
 SANYO: MCP

2SC4400

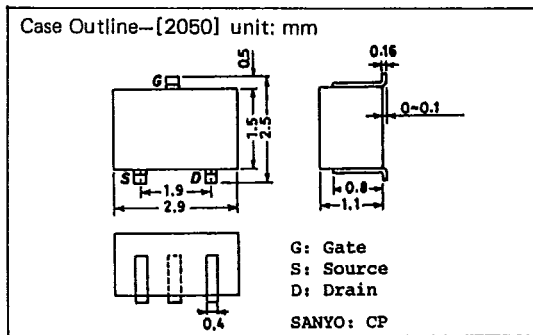
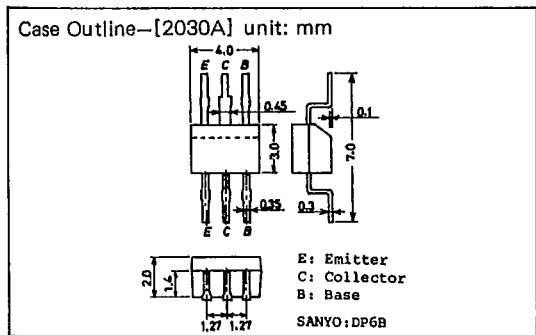
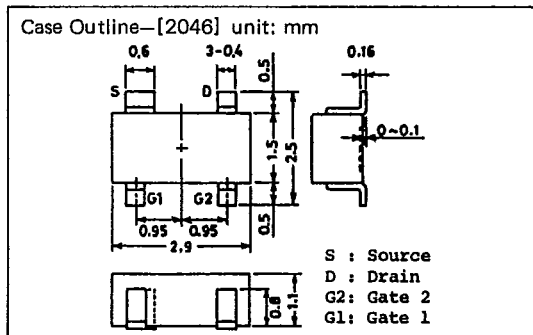
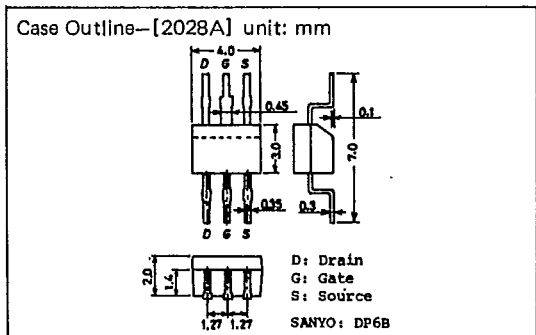
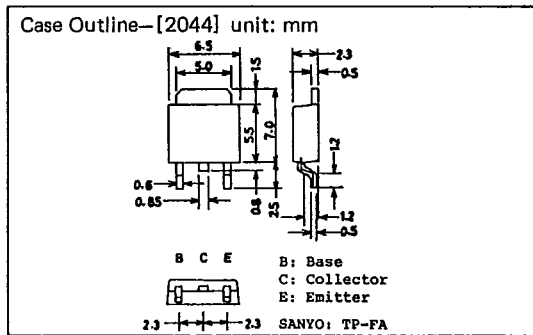
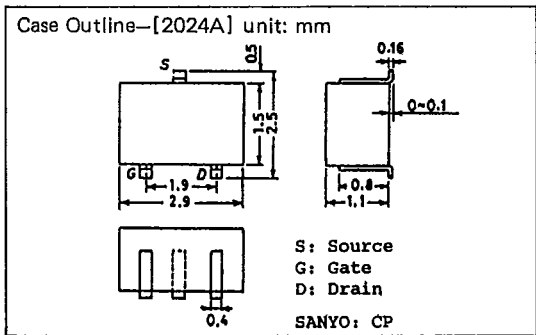
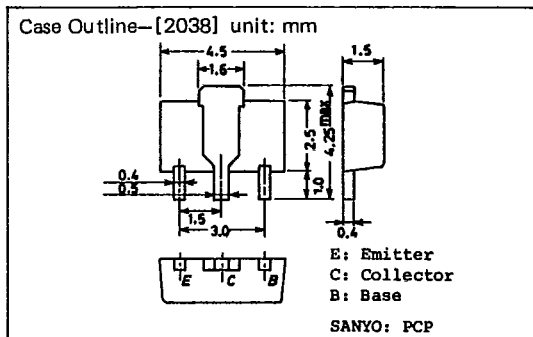
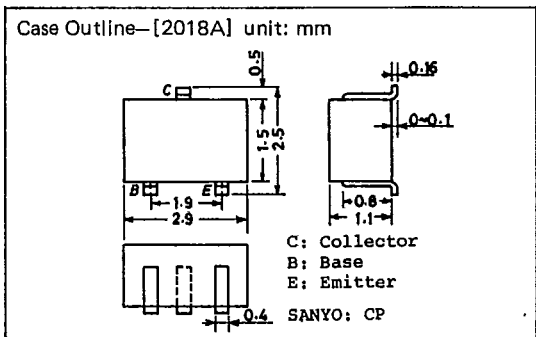
T-31-15



T-91-20

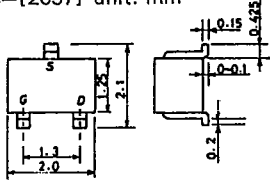
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.



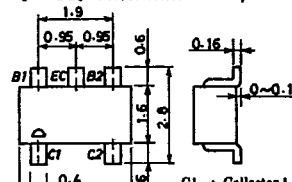
T-91-20

Case Outline—[2057] unit: mm



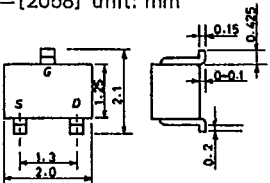
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2066] unit: mm



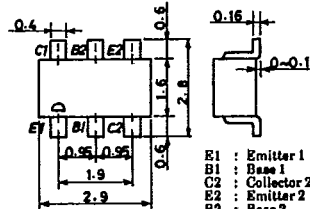
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2058] unit: mm



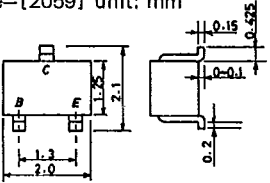
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2067] unit: mm



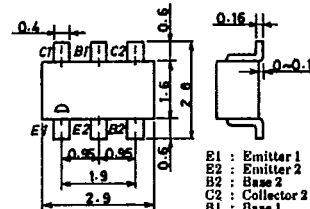
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2059] unit: mm



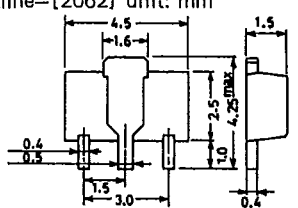
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2068] unit: mm



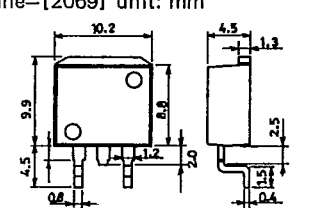
B1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2062] unit: mm



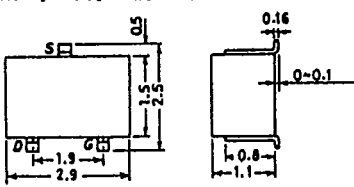
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2069] unit: mm



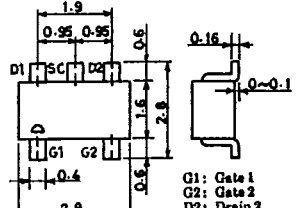
B: Base
C: Collector
E: Emitter
SANYO: SMP

Case Outline—[2065] unit: mm



S: Source
D: Drain
G: Gate
SANYO: CP

Case Outline—[2070] unit: mm



G1 : Gate 1
G2 : Gate 2
D2 : Drain 2
SC : Source Common
D1 : Drain 1
SANYO : CP6

T-9120

