2SA1597, 2SC4146

T-37-13
T-35-11

2018A

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications
(with Bias Resistances R1=4.7kΩ, R2=47kΩ)

Applications

- Switching circuit, inverter circuit, interface circuit, driver circuit

Features

- On-chip bias resistance (R1=4.7kohms, R2=47kohms)
- Small-sized package (CP)

( ): 2SA1597

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	(-)50	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)100	mA
Peak Collector Current	i_{cp}	(-)200	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

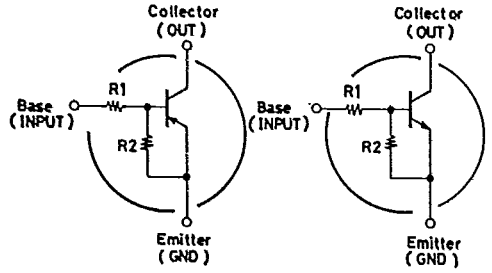
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)40V, I_E=0			(-)0.1	uA
Collector Cutoff Current	I_{CEO}	V_{CE}=(-)40V, I_B=0			(-)0.5	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0	(-)74	(-)97	(-)138	uA
DC Current Gain	h_{FE}	V_{CE}=(-)5V, I_C=(-)5mA	70			
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)5mA		250 (200)		MHz
Output Capacitance	c_{ob}	V_{CB}=(-)10V, f=1MHz		3.5 (5.3)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)10mA, I_B=(-)0.5mA		(-)0.1	(-)0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10uA, I_E=0	(-)50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)100uA, R_{BE}=∞	(-)50			V

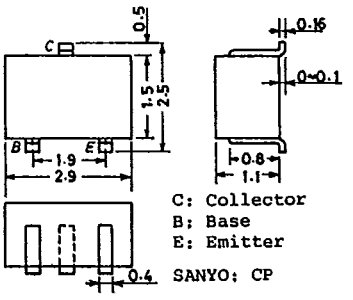
Continued on next page.

Marking 2SA1597:XL, 2SC4146:FT

Electrical Connection

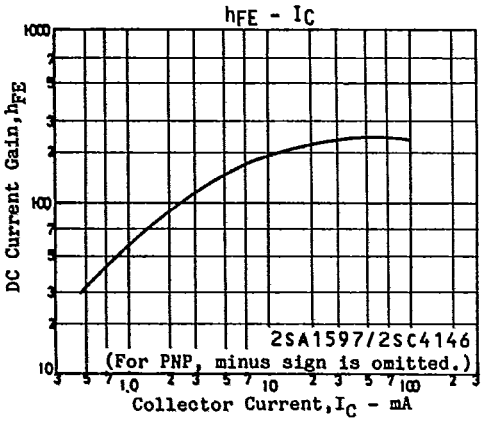


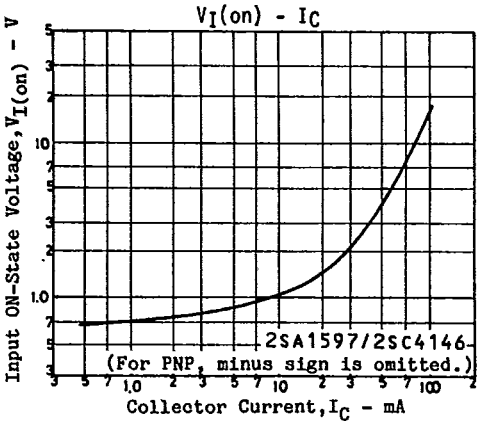
Case Outline 2018A
(unit:mm)

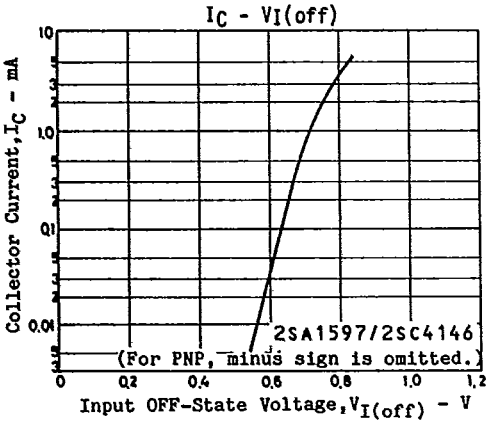


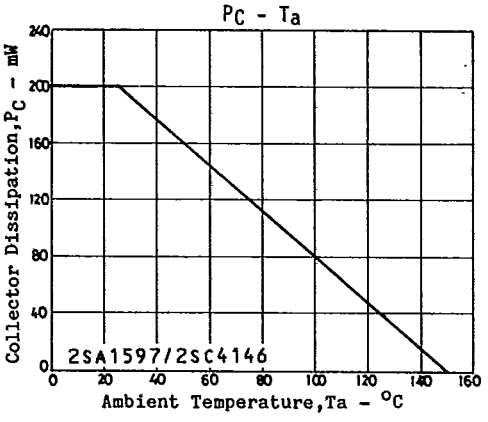
Continued from preceding page.

			min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=(-)5V, I_C=(-)100uA	(-)0.5	(-)0.6	(-)0.8	V
Input ON-State Voltage	$V_{I(on)}$	V_{CE}=(-)0.2V, I_C(-)5mA	(-)0.7	(-)0.85	(-)1.3	V
Input Resistance	R1		3.3	4.7	6.1	kohm
Resistance Ratio	R1/R2		0.09	0.1	0.11	







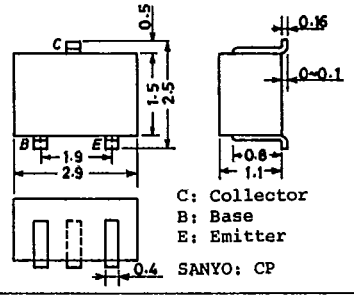


T-91-20

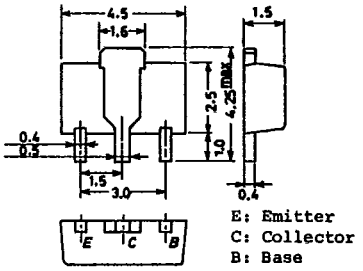
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

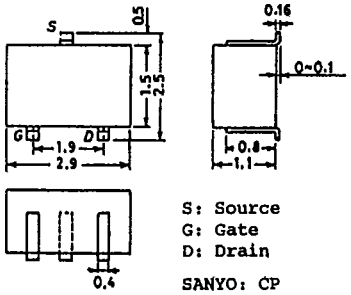
Case Outline—[2018A] unit: mm



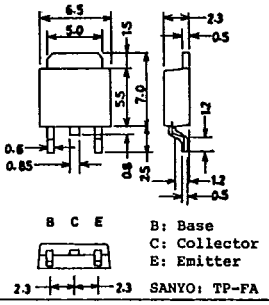
Case Outline—[2038] unit: mm



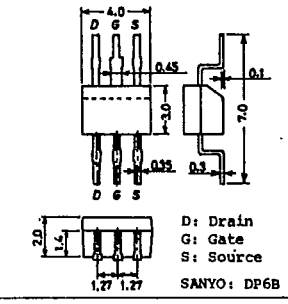
Case Outline—[2024A] unit: mm



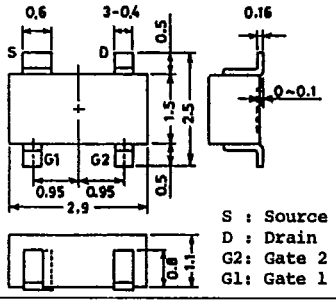
Case Outline—[2044] unit: mm



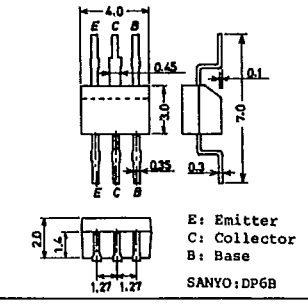
Case Outline—[2028A] unit: mm



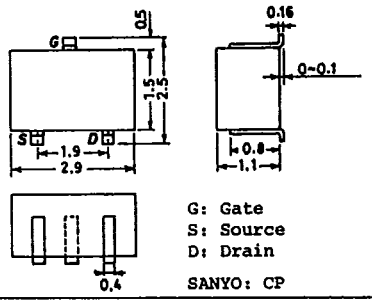
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm

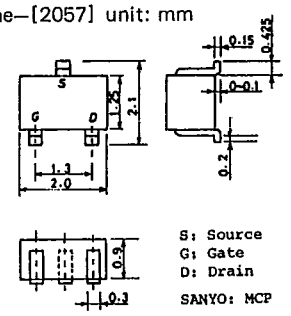


Case Outline—[2050] unit: mm

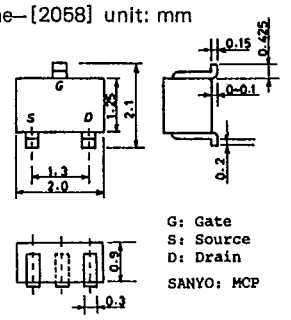


T-91-20

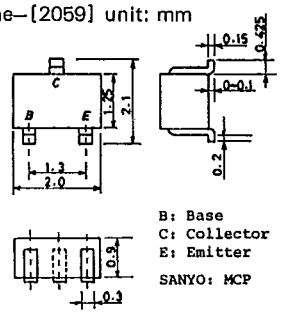
Case Outline—[2057] unit: mm



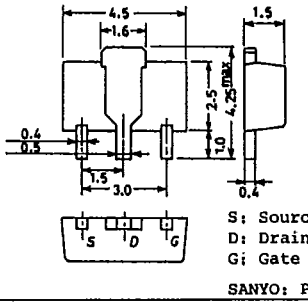
Case Outline—[2058] unit: mm



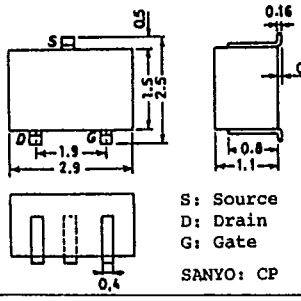
Case Outline—[2059] unit: mm



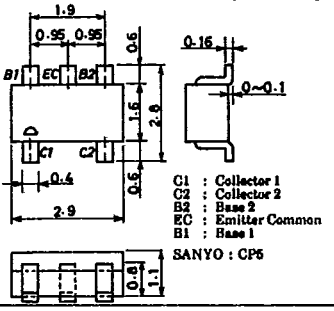
Case Outline—[2062] unit: mm



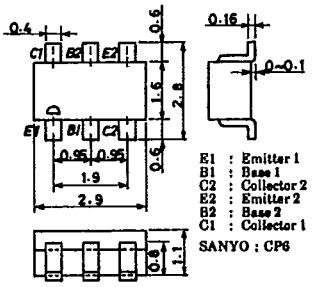
Case Outline—[2065] unit: mm



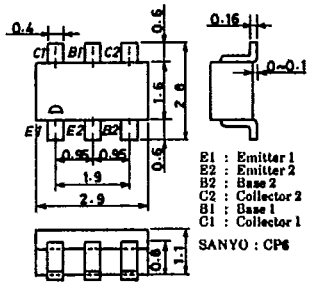
Case Outline—[2066] unit: mm



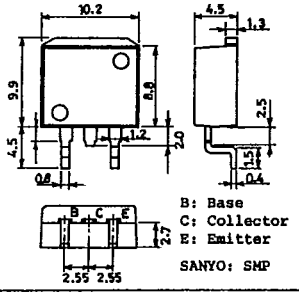
Case Outline—[2067] unit: mm



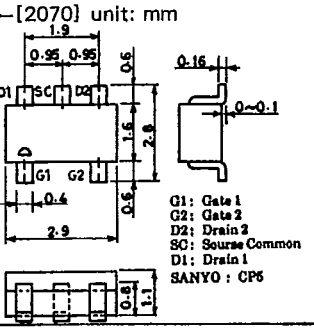
Case Outline—[2068] unit: mm



Case Outline—[2069] unit: mm

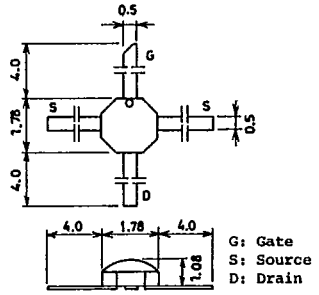


Case Outline—[2070] unit: mm

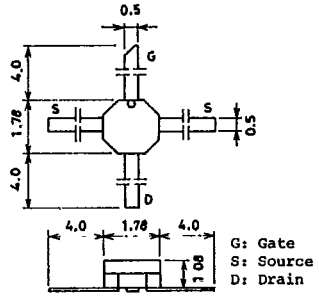


T-91-20

Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm