2SA1563, 2SC4047

T-37-13
T-35-11

2018A

PNP/NPN Epitaxial Planar
Silicon Transistors

Switching Applications
(with Bias Resistances R1=10kΩ, R2=47kΩ)

Ⓔ2380

Applications

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

Features

- On-chip bias resistance (R1=10kohms, R2=47kohms)
- Small-sized package (CP)

( ): 2SA1563

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	(-)67	(-)88	(-)125	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		3.7 (5.5)		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

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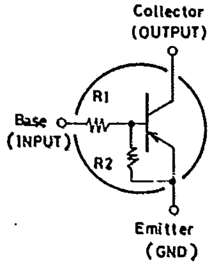
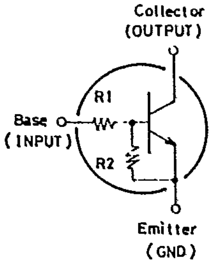
Marking 2SA1563:RL, 2SC4047:ZY

Electrical Connection

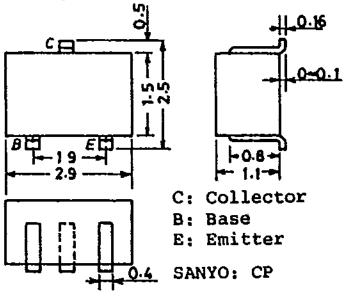


P N P



N P N

Case Outline 2018A
(unit:mm)



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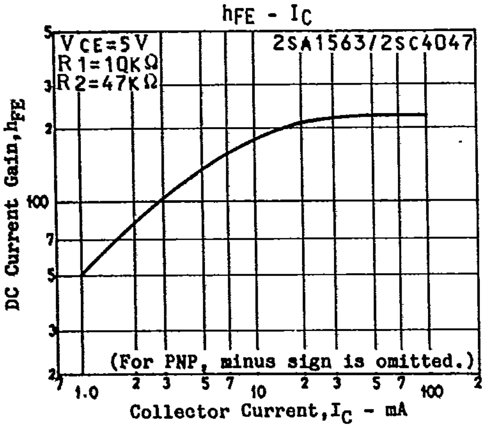
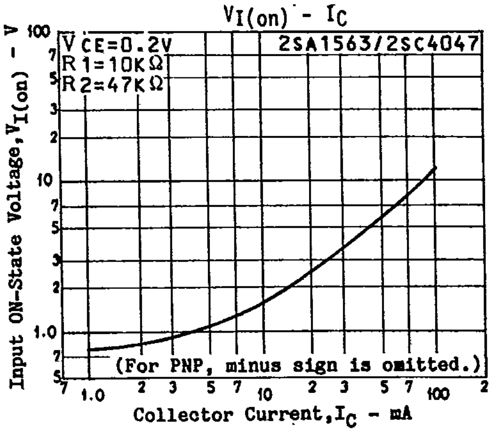
			min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=(-)5V,I_C=(-)100uA	(-)0.5	(-)0.7	(-)0.9	V
Input ON-State Voltage	$V_{I(on)}$	V_{CE}=(-)0.2V,I_C(-)5mA	(-)0.7	(-)1.0	(-)2.0	V
Input Resistance	R1		7	10	13	kohm
Resistance Ratio	R1/R2		0.193	0.213	0.234	

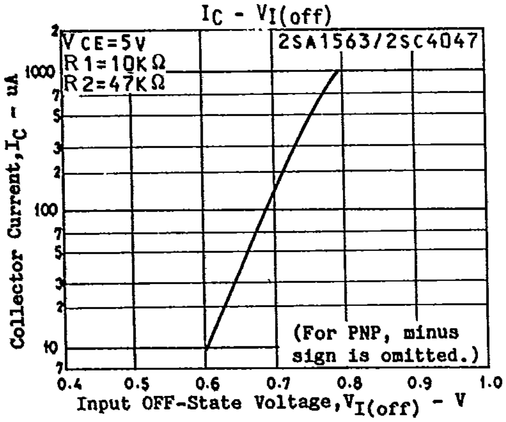
h_{FE} - I_C



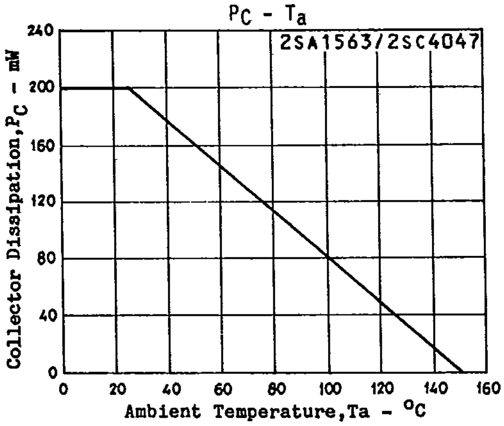
$V_{I(on)}$ - I_C



I_C - $V_{I(off)}$



P_C - Ta

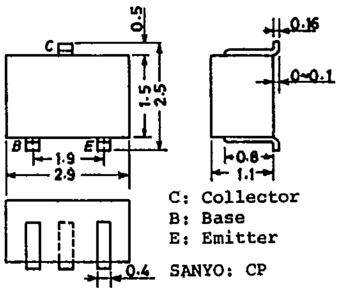


T-91-20

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.

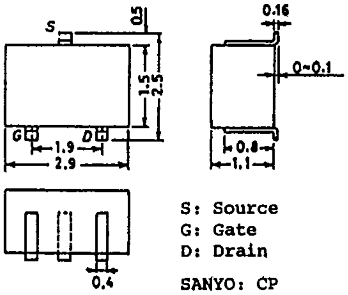
Case Outline—[2018A] unit: mm



C: Collector
B: Base
E: Emitter

SANYO: CP

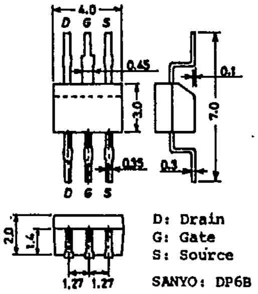
Case Outline—[2024A] unit: mm



S: Source
G: Gate
D: Drain

SANYO: CP

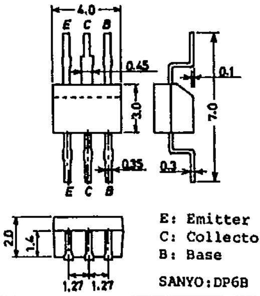
Case Outline—[2028A] unit: mm



D: Drain
G: Gate
S: Source

SANYO: DP6B

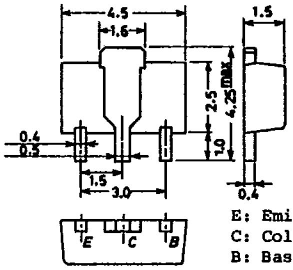
Case Outline—[2030A] unit: mm



E: Emitter
C: Collector
B: Base

SANYO: DP6B

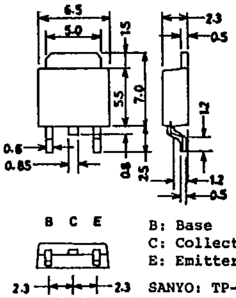
Case Outline—[2038] unit: mm



E: Emitter
C: Collector
B: Base

SANYO: PCP

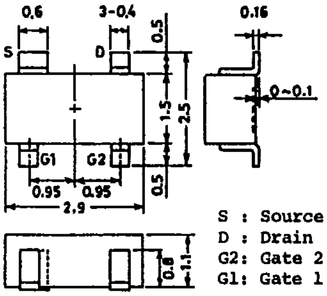
Case Outline—[2044] unit: mm



B: Base
C: Collector
E: Emitter

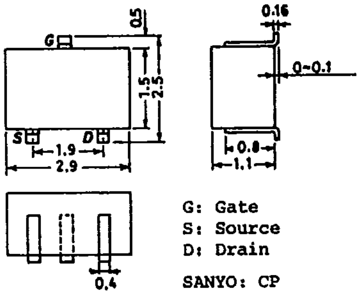
SANYO: TP-FA

Case Outline—[2046] unit: mm



S : Source
D : Drain
G2: Gate 2
G1: Gate 1

Case Outline—[2050] unit: mm



G: Gate
S: Source
D: Drain

SANYO: CP

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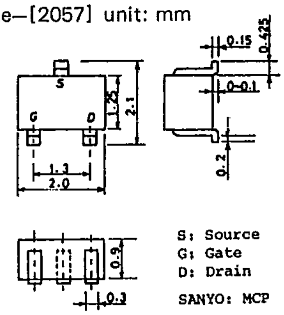
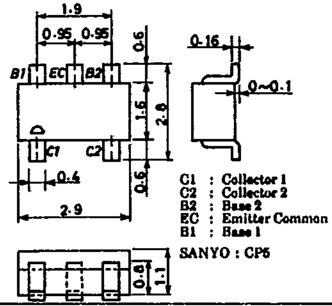
Case Outline—[2057] unit: mm



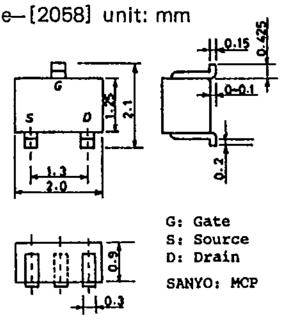
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2066] unit: mm



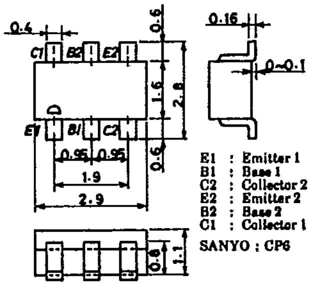
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2058] unit: mm



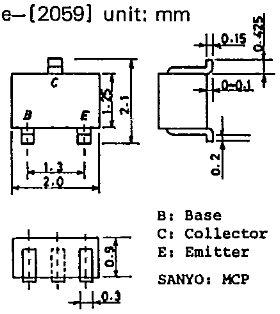
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2067] unit: mm



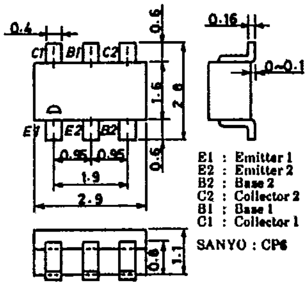
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2059] unit: mm



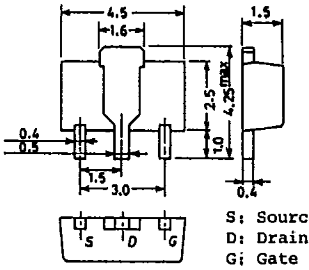
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2068] unit: mm



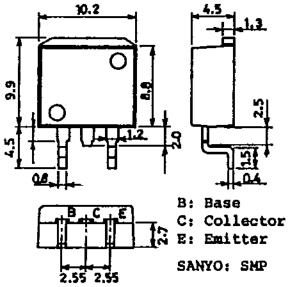
E1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2062] unit: mm



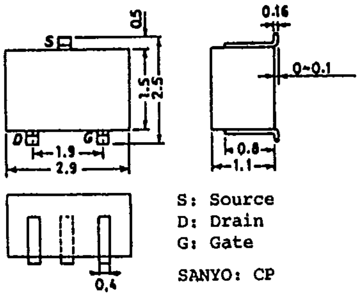
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2069] unit: mm



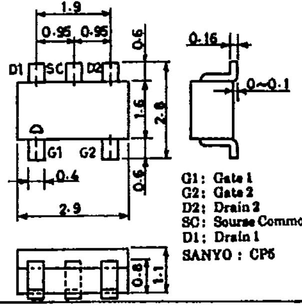
B: Base
C: Collector
E: Emitter
SANYO: SMP

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: Sourse Common
D1: Drain 1
SANYO : CP6

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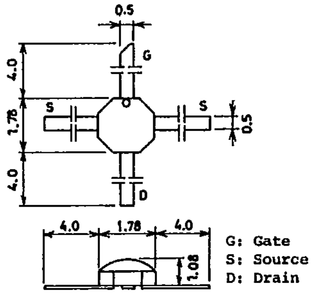
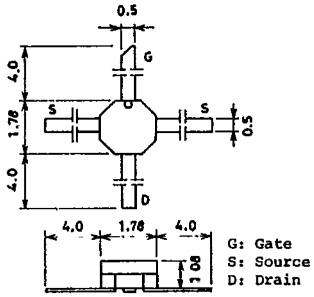
Case Outline–[2071] unit: mm



Case Outline–[2072] unit: mm



Case Outline–[2073] unit: mm