2SA1510, 2SC3900

T-37-13
T-35-11

2018A

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications
(with Bias Resistance R1=4.7kΩ)

Applications
- Switching circuits, inverter circuits, interface circuits, driver circuits

Features
- On-chip bias resistance: R1=4.7kohms
- Small-sized package: CP

( ):2SA1510

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}	(-)5	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
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0			(-)0.1	uA
DC Current Gain	h_{FE}	V_{CE}=(-)5V, I_C=(-)10mA	100			
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)5mA		250		MHz
				(200)		MHz
Output Capacitance	c_{ob}	V_{CB}=(-)10V, f=1MHz		3.7		pF
				(5.5)		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(-)10mA, I_B=(-)0.5mA		(-)0.1	(-)0.3	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10uA, I_E=0	(-)50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)100uA, R_{BE}=∞	(-)50			V

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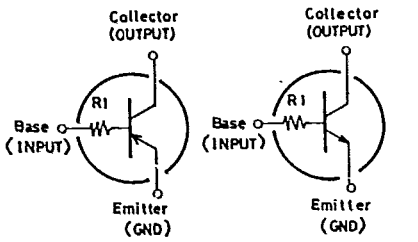
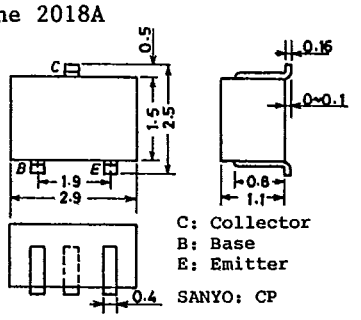
Marking: 2SA1510: KL, 2SC3900: SY

Electrical Connection



Case Outline 2018A
(unit:mm)



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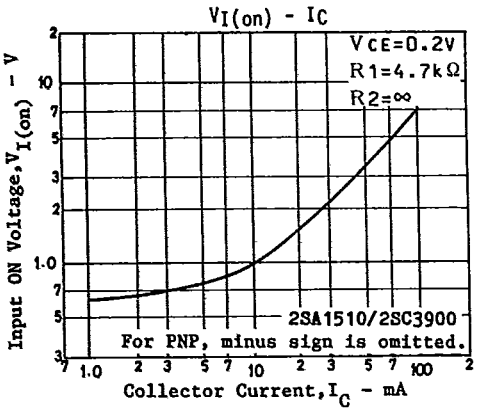
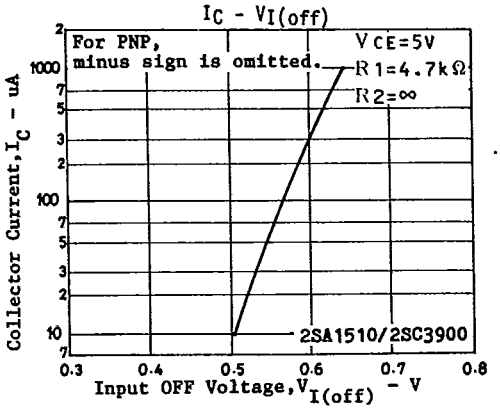
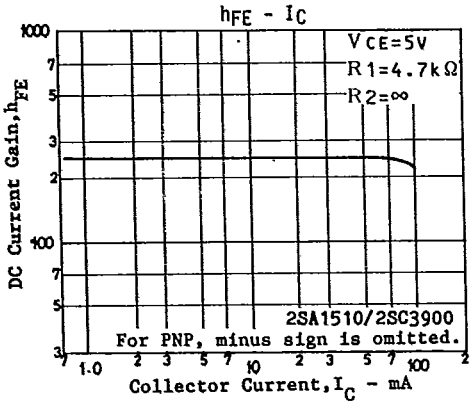
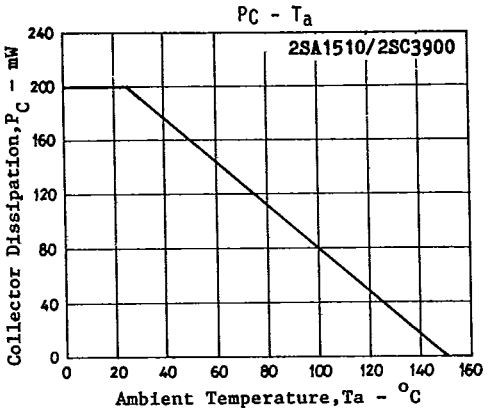
			min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=(-)5V, I_C=(-)100uA	(-)0.4	(-)0.55	(-)0.8	V
Input ON-State Voltage	$V_{I(on)}$	V_{CE}=(-)0.2V, I_C=(-)10mA	(-)0.6	(-)1.0	(-)2.0	V
Input Resistance	R1		3.3	4.7	6.1	kohm









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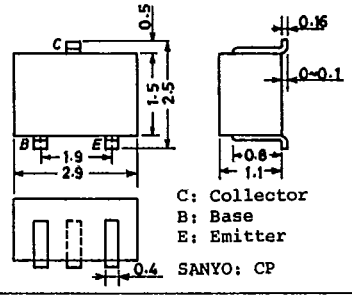
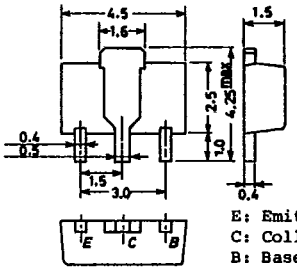
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

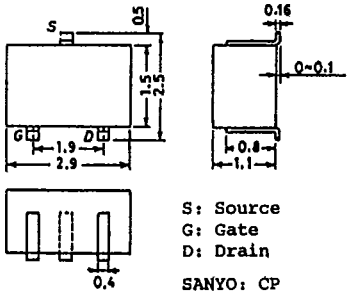
Case Outline—[2018A] unit: mm



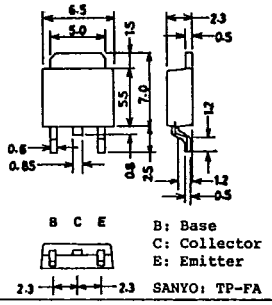
Case Outline—[2038] unit: mm



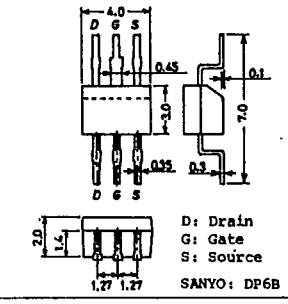
Case Outline—[2024A] unit: mm



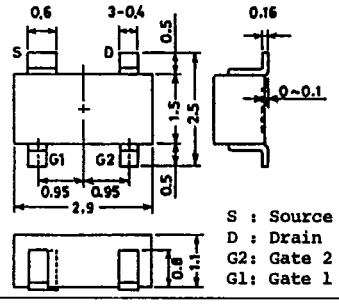
Case Outline—[2044] unit: mm



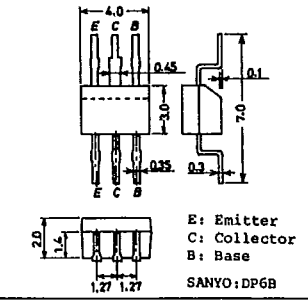
Case Outline—[2028A] unit: mm



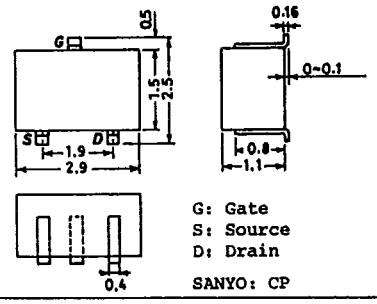
Case Outline—[2046] unit: mm



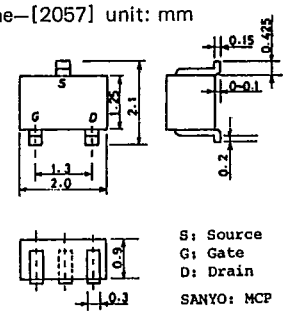
Case Outline—[2030A] unit: mm



Case Outline—[2050] unit: mm

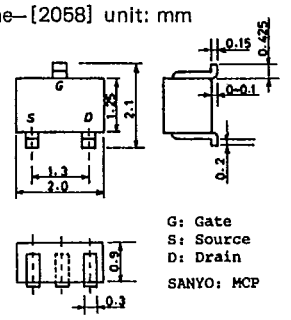


Case Outline—[2057] unit: mm



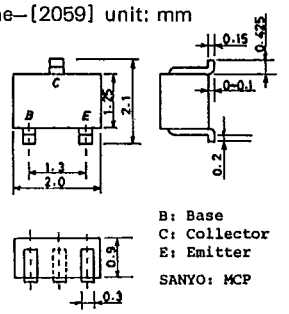
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2058] unit: mm



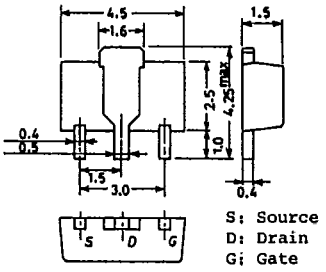
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2059] unit: mm



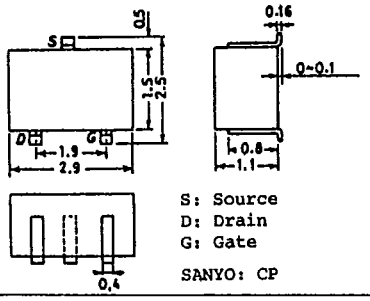
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2062] unit: mm



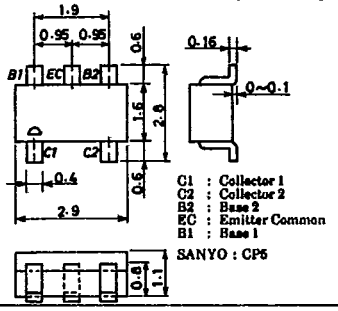
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2065] unit: mm



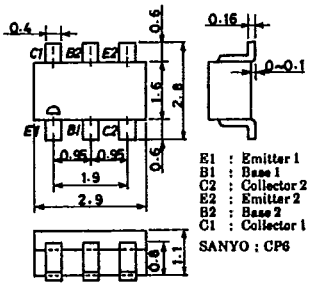
S: Source
D: Drain
G: Gate
SANYO: CP

Case Outline—[2066] unit: mm



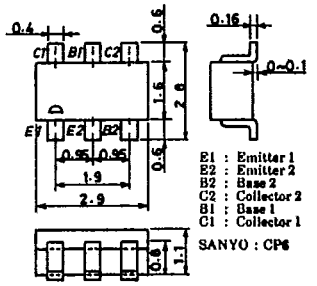
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2067] unit: mm



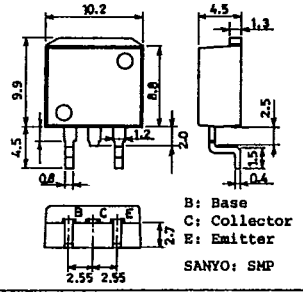
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2068] unit: mm



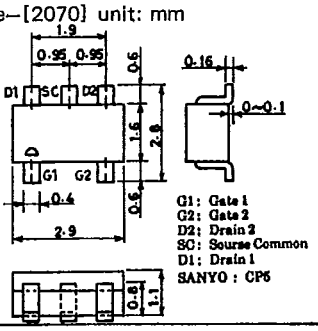
E1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2069] unit: mm



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

Case Outline—[2070] unit: mm



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

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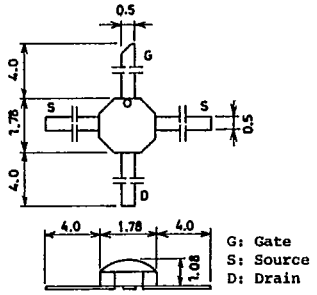
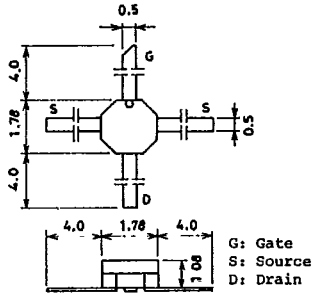
Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm