

# 2SA1502, 2SC3863



2018A

PNP/NPN Epitaxial Planar  
Silicon Transistors

T-37-13  
T-35-11

## Switching Applications (with Bias Resistances R1=2.2kΩ, R2=10kΩ)

©2108A

### Applications

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

### Features

- On-chip bias resistance: R1=2.2kohms, R2=10kohms
- Small-sized package: CP

( ): 2SA1502.

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V <sub>CB0</sub>	(-)50	V
Collector to Emitter Voltage	V <sub>CE0</sub>	(-)50	V
Emitter to Base Voltage	V <sub>EBO</sub>	(-)6	V
Collector Current	I <sub>C</sub>	(-)100	mA
Peak Collector Current	i <sub>C</sub>	(-)200	mA
Collector Dissipation	P <sub>CP</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

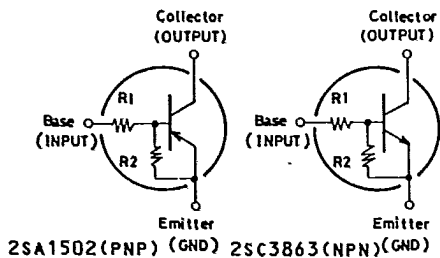
Electrical Characteristics at Ta=25°C

		min	typ	max	unit	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = (-)40V, I <sub>E</sub> = 0		(-)0.1	uA	
Collector Cutoff Current	I <sub>CE0</sub>	V <sub>CE</sub> = (-)40V, I <sub>B</sub> = 0		(-)0.5	uA	
Emitter Cutoff Current	I <sub>ERO</sub>	V <sub>EB</sub> = (-)5V, I <sub>C</sub> = 0	(-)315	(-)410	(-)590	uA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)10mA	50			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = (-)10V, I <sub>C</sub> = (-)5mA	250		MHz	
			(200)		MHz	
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> = (-)10V, f = 1MHz	3.5		pF	
			(5.3)		pF	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = (-)10mA, I <sub>B</sub> = (-)0.5mA	(-)0.1	(-)0.3	V	

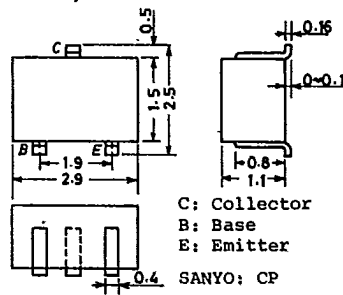
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Marking: 2SA1502: HL, 2SC3863: QY

### Electrical Connection



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



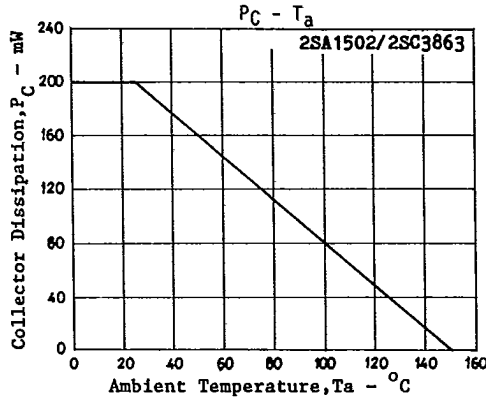
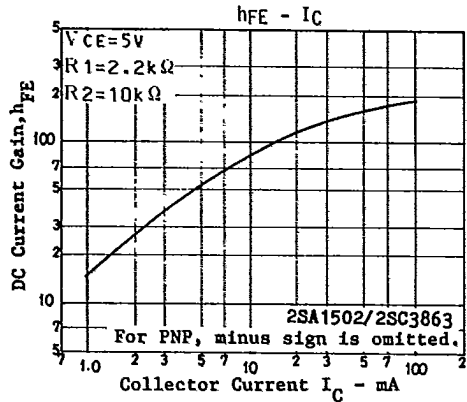
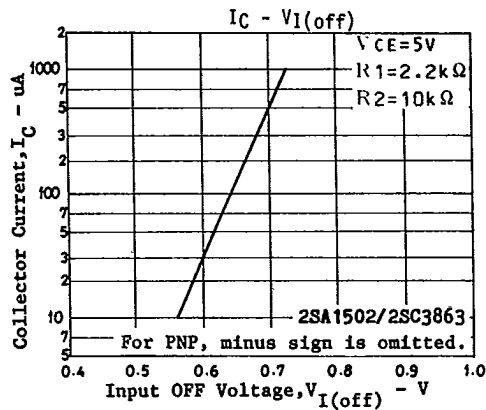
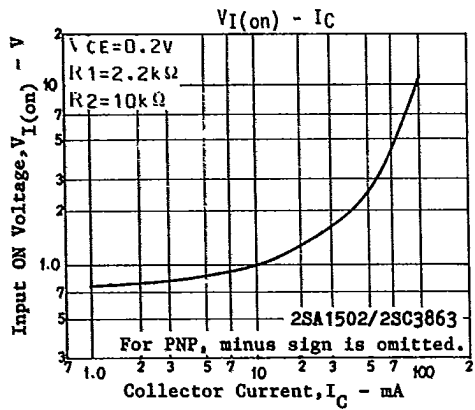
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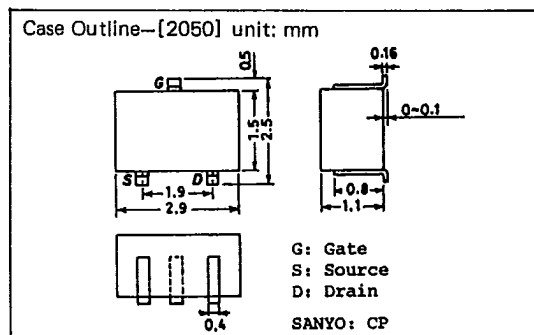
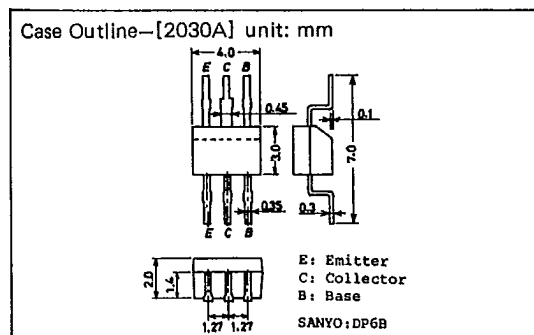
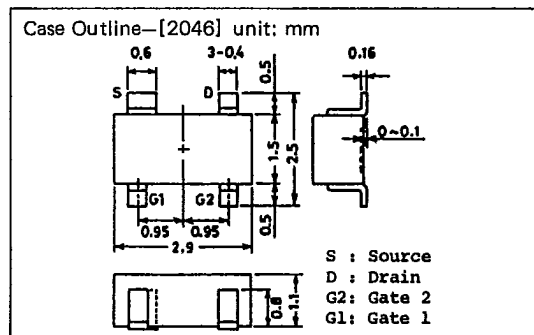
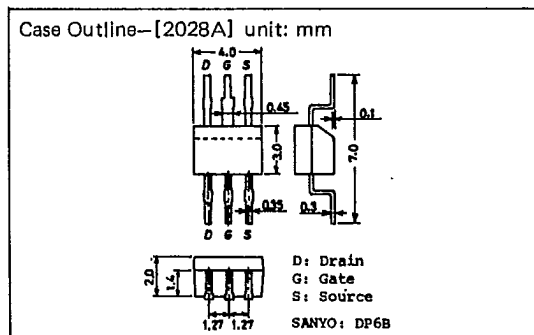
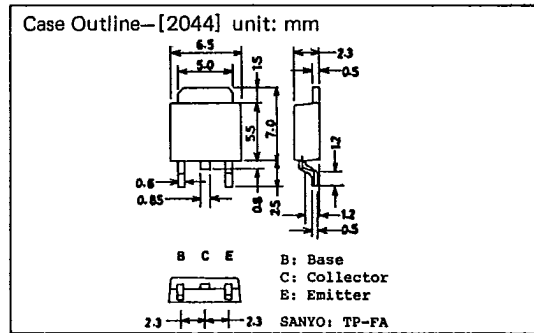
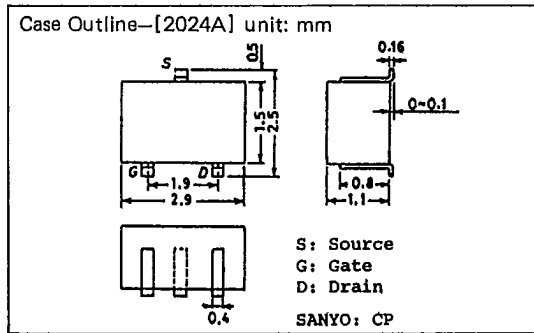
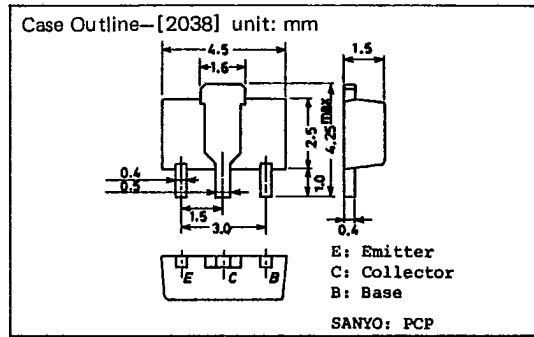
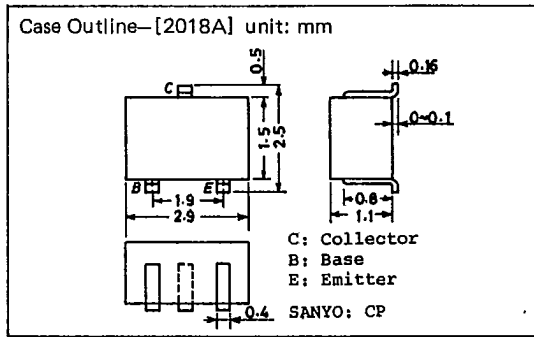
			min	typ	max	unit
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-) 10\mu A, I_E = 0$	(-) 50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-) 100\mu A, R_{BE} = \infty$	(-) 50			V
Input OFF Voltage	$V_{I(off)}$	$V_{CE} = (-) 5V, I_C = 100\mu A$	(-) 0.5	(-) 0.7	(-) 0.9	V
Input ON Voltage	$V_{I(on)}$	$V_{CE} = (-) 0.2V, I_C = (-) 10mA$	(-) 0.7	(-) 1.0	(-) 1.8	V
Input Resistance	R1		1.5	2.2	2.9	kohm
Resistance Ratio	R1/R2		0.198	0.22	0.242	



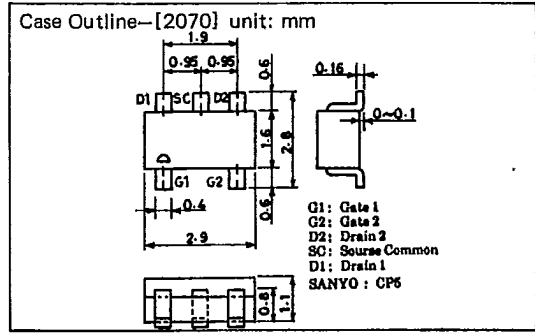
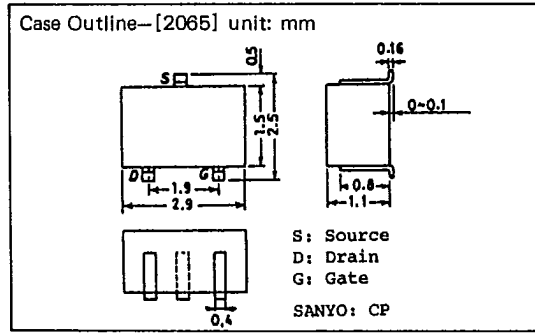
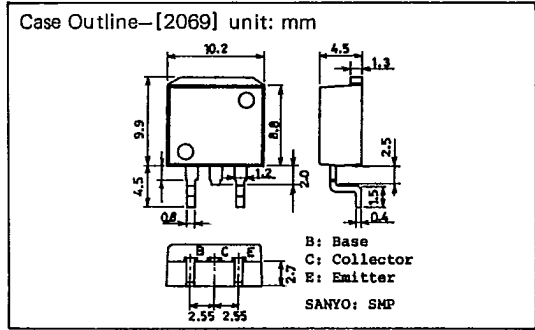
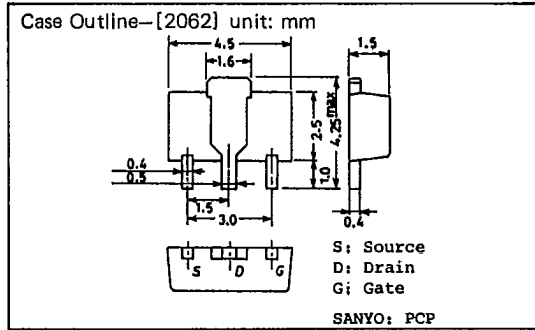
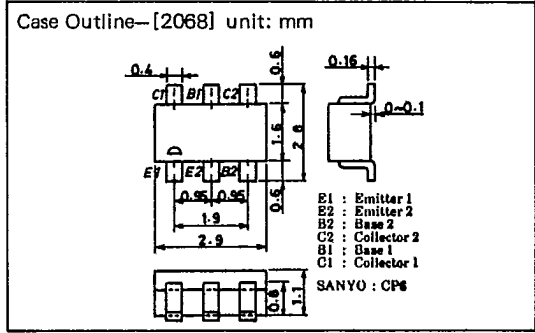
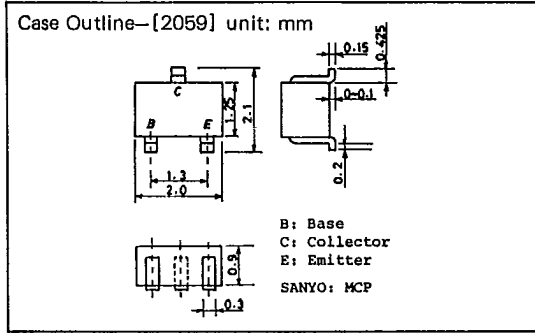
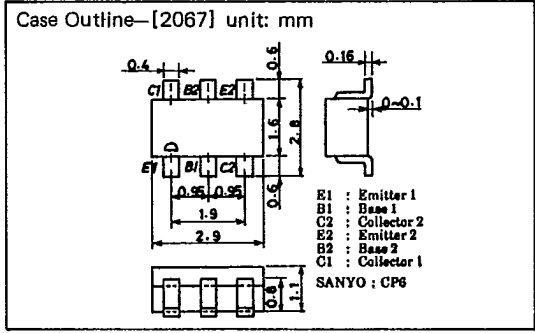
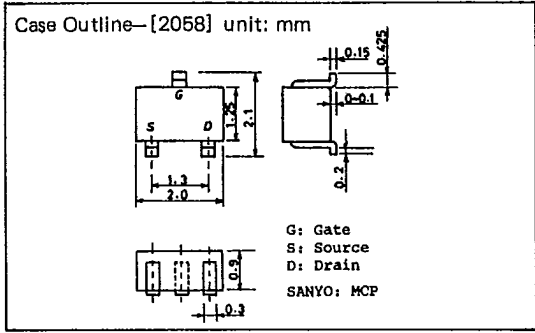
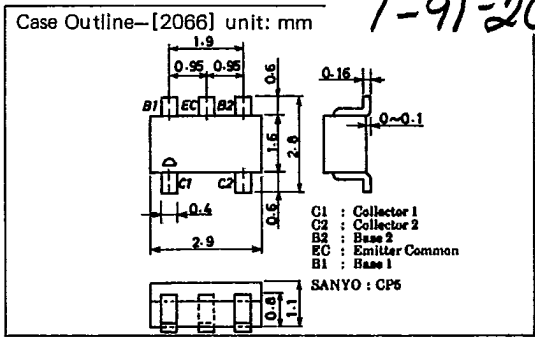
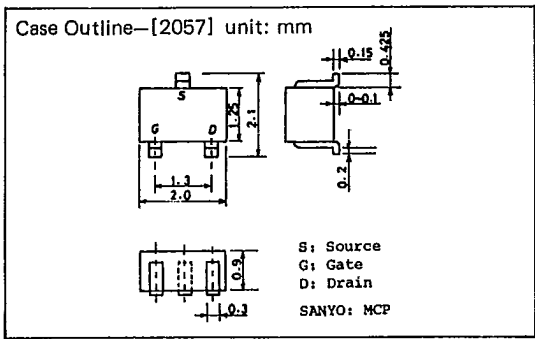
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# CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.



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