

SANYO

No.1685A

2SA1423/2SC3656

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications
(with Bias Resistor)**Use**

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

Features

- With bias resistor ($R_1=10k\Omega$, $R_2=10k\Omega$).

(): 2SA1423

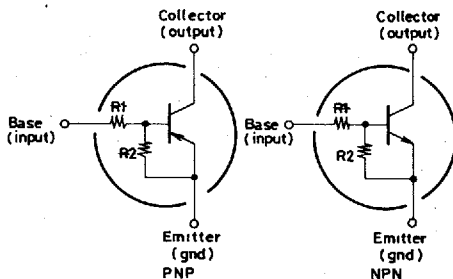
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	(-)50	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)10	V
Collector Current	I_C	(-)100	mA
Collector Current(Pulse)	I_{CP}	(-)200	mA
Collector Dissipation	P_C	400	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

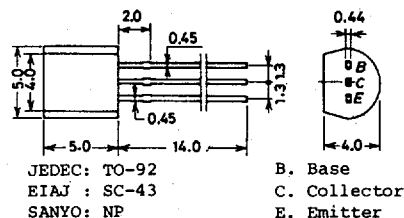
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40\text{V}, I_E=0$		(-)0.1		μA
Collector Cutoff Current	I_{CEO}	$V_{CE}=(-)40\text{V}, I_B=0$		(-)0.5		μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)5\text{V}, I_C=0$	(-)170	(-)250	(-)330	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)5\text{V}, I_C=(-)10\text{mA}$	50			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)5\text{mA}$		250		MHz
				(200)		
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		3.7		pF
				(5.5)		
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)10\text{mA}, I_B=(-)0.5\text{mA}$	(-)0.1	(-)0.3		V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)100\mu\text{A}, R_{BE}=\infty$	(-)50			V

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Electrical Connection**Case Outline 2003A**

(unit:mm)



Specifications and information herein are subject to change without notice.

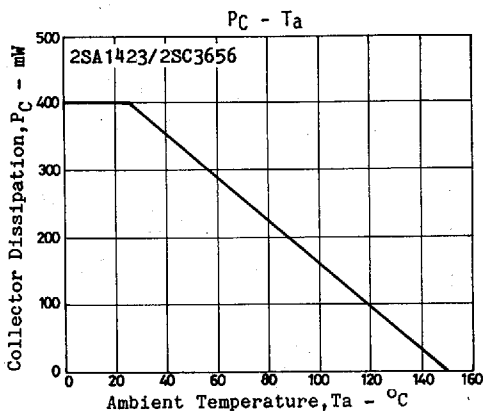
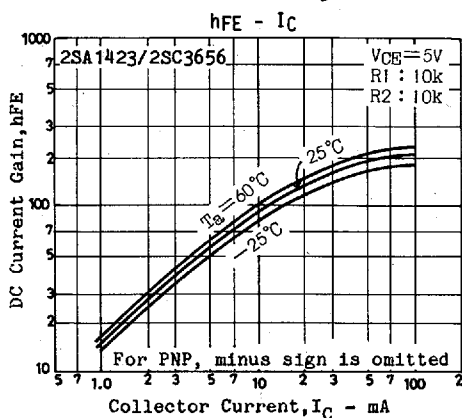
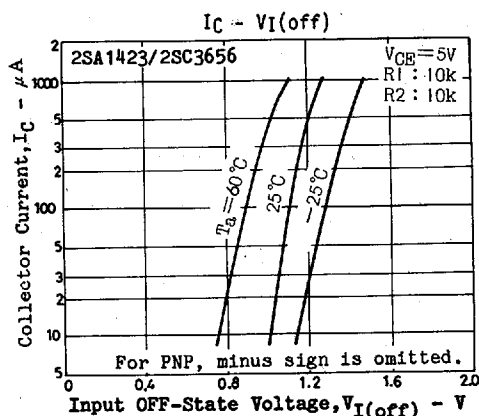
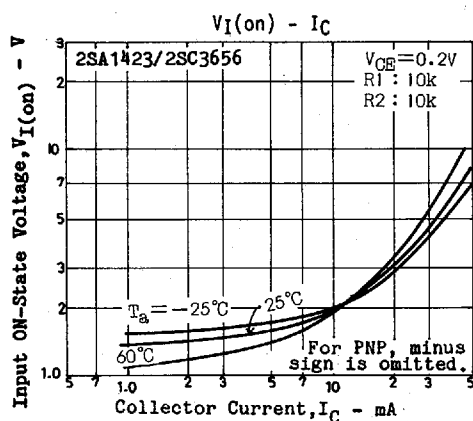
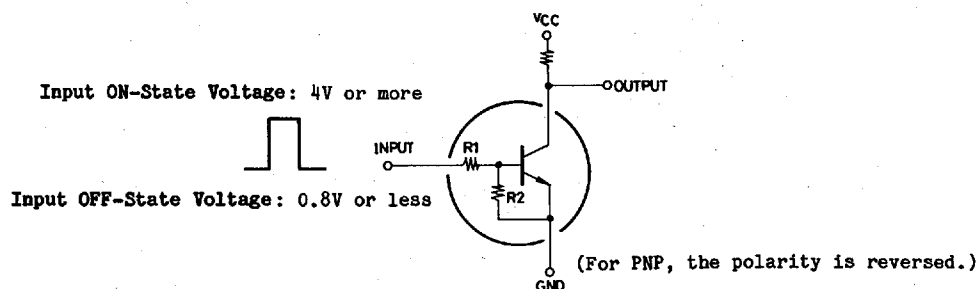
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			min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE}=(-)5V, I_C=(-)100\mu A$	(-)0.8	(-)1.1	(-)1.5	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)10mA$	-1.0	(-)2.0	(-)4.0	V
Input Resistance	R_1		7.0	10	13	k Ω
Resistance Ratio	R_1/R_2		0.9	1.0	1.1	-

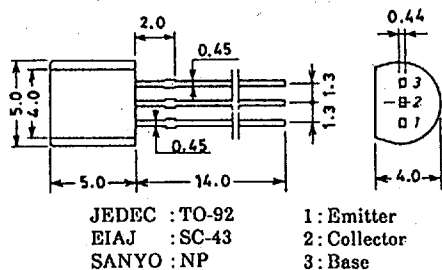
Sample Application Circuit



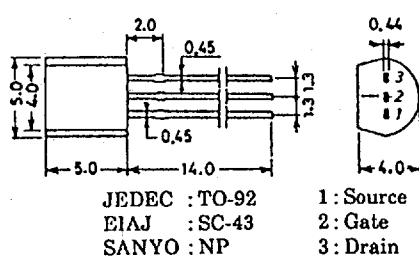
CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- All of Sanyo lead formed small signal 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.

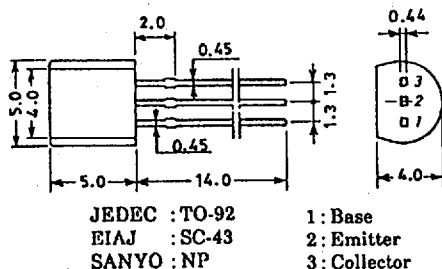
Case Outline 2003A/2003B (unit : mm)



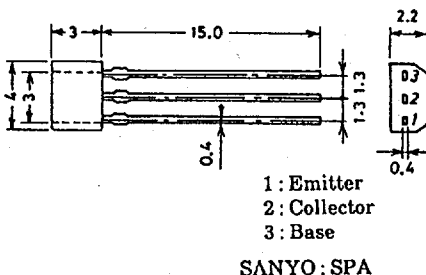
Case Outline 2019A/2019B (unit : mm)



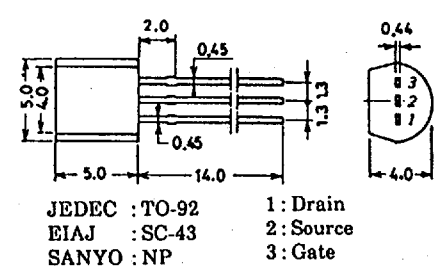
Case Outline 2004A (unit : mm)



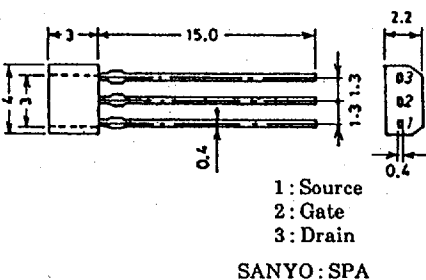
Case Outline 2033 (unit : mm)



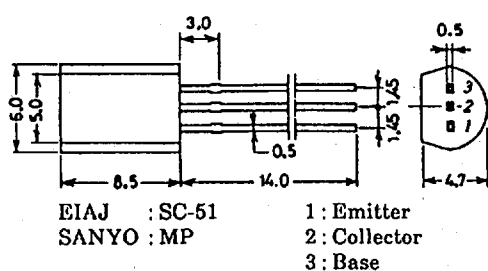
Case Outline 2005A (unit : mm)



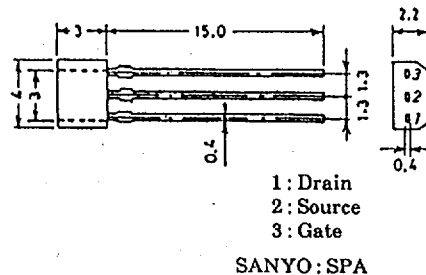
Case Outline 2034/2034A (unit : mm)



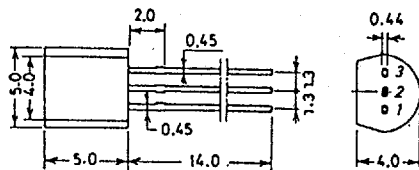
Case Outline 2006A (unit : mm)



Case Outline 2040 (unit : mm)



Case Outline 2061 (unit : mm)



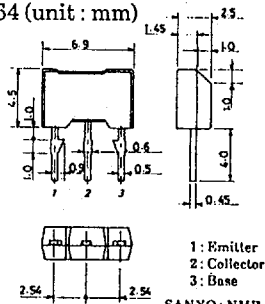
JEDEC : TO-92

EIAJ : SC-43

SANYO : NP

- 1: Emitter
- 2: Base
- 3: Collector

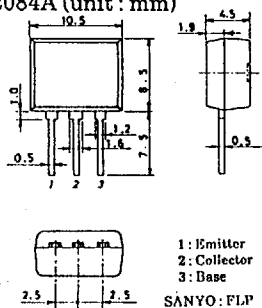
Case Outline 2064 (unit : mm)



- 1: Emitter
- 2: Collector
- 3: Base

SANYO : NMP

Case Outline 2084A (unit : mm)



- 1: Emitter
- 2: Collector
- 3: Base

SANYO : FLIP