

SANYO

No.2109A

2SA1503/2SC3864

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications

(with Bias Resistance)

Applications

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

Features

- On-chip bias resistance: $R1=2.2k\Omega$, $R2=10k\Omega$
- Small-sized package: SPA

(): 2SA1503

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

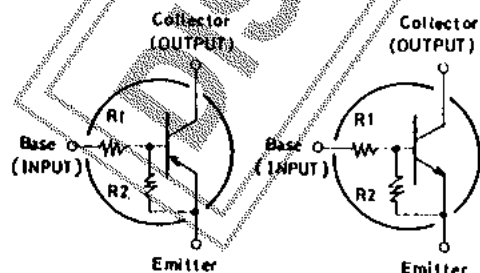
		unit
Collector to Base Voltage	V_{CB0}	(-)50 V
Collector to Emitter Voltage	V_{CE0}	(-)50 V
Emitter to Base Voltage	V_{EBO}	(-)6 V
Collector Current	I_C	(-)100 mA
Collector Current (Pulse)	I_{CP}	(-)200 mA
Collector Dissipation	P_C	300 mW
Junction Temperature	T_J	150 $^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150 $^\circ\text{C}$

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

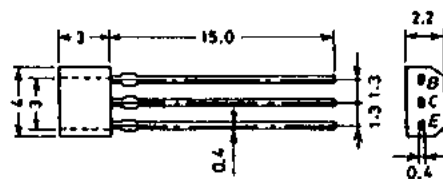
		min	typ	max	unit
Collector Cutoff Current	I_{CBO} $V_{CB}=(-)40\text{V}, I_E=0$			(-)0.1	μA
Collector Cutoff Current	I_{CEO} $V_{CE}=(-)40\text{V}, I_E=0$			(-)0.5	μA
Emitter Cutoff Current	I_{EBO} $V_{EB}=(-)5\text{V}, I_C=0$	(-)315	(-)410	(-)590	μA
DC Current Gain	h_{FE} $V_{CE}=(-)5\text{V}, I_C=(-)10\text{mA}$	50			
Gain-Bandwidth Product	f_T $V_{CE}=(-)10\text{V}, I_C=(-)5\text{mA}$		250		MHz
			(200)		MHz
Output Capacitance	c_{ob} $V_{CB}=(-)10\text{V}, f=1\text{MHz}$		3.7		pF
			(5.5)		pF
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

Continued on next page.

Electrical Connection



Case Outline 2033 (unit:mm)



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

Specifications and information herein are subject to change without notice.

SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

Continued from preceding page.

			min	typ	max	unit
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	R_I		1.5	2.2	2.9	k Ω
Resistance Ratio	R_1/R_2		0.198	0.22	0.242	

