

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=2.2kΩ , R2=10kΩ
- Small-sized package: SPA

( ) : 2SA1503

Absolute Maximum Ratings at Ta=25°C

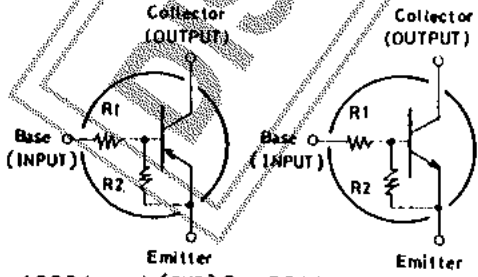
		unit
Collector to Base Voltage	$V_{CBO}$	(-)50 V
Collector to Emitter Voltage	$V_{CEO}$	(-)50 V
Emitter to Base Voltage	$V_{EBO}$	(-)6 V
Collector Current	$I_C$	(-)100 mA
Collector Current (Pulse)	$I_{CP}$	(-)200 mA
Collector Dissipation	$P_C$	300 mW
Junction Temperature	$T_J$	150 °C
Storage Temperature	$T_{stg}$	-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	μA
Collector Cutoff Current	$I_{CEO}$ $V_{CE} = (-)40V, I_B = 0$			(-)0.5	μA
Emitter Cutoff Current	$I_{EBO}$ $V_{EB} = (-)5V, I_C = 0$	(-)315	(-)410	(-)590	μA
DC Current Gain	$h_{FE}$ $V_{CE} = (-)5V, I_C = (-)10mA$	50			
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	$V_{(BR)CBO}$ $I_C = (-)10μA, I_E = 0$	(-)50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$ $I_C = (-)100μA, R_{BE} = ∞$	(-)50			V

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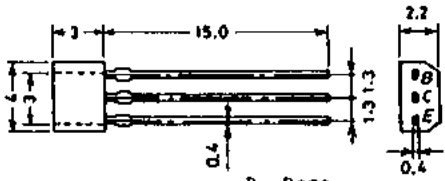
**Electrical Connection**



2SA1503 (PNP) (GND) 2SC3864 (NPN) (GND)

**Case Outline 2033**

(unit:mm)



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

Specifications and information herein are subject to change without notice.

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			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 $\Omega$
Resistance Ratio	$R1/R2$		0.198	0.22	0.242	

