

SANYO

No.2381

2SA1564/2SC4048

PNP/ NPN Epitaxial Planar Silicon Transistors

Switching Applications
(with Bias Resistance)**Applications**

. Switching circuit, inverter circuit, interface circuit, driver circuit.

Features

- . On-chip bias resistance: $R_1=10k\Omega$, $R_2=47k\Omega$
- . Small-sized package: SPA

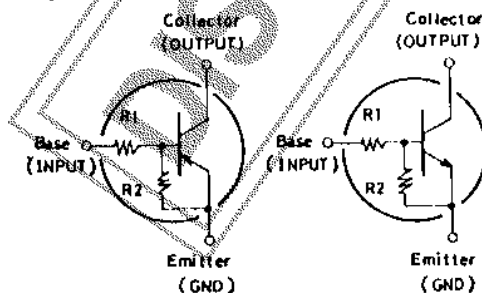
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Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

		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 $^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150 $^\circ\text{C}$

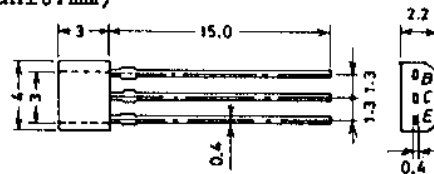
Electrical Characteristics at $T_a=25^\circ\text{C}$

		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} $V_{EB}=(-)5\text{V}, I_C=0$	(-)67	(-)88	(-)125	μA
DC Current Gain	h_{FE} $V_{CE}=(-)5\text{V}, I_C=(-)5\text{mA}$	70			
Gain-Bandwidth Product	f_T $V_{CE}=(-)10\text{V}, I_C=(-)5\text{mA}$		250 (200)		MHz
Output Capacitance	C_{ob} $V_{CB}=(-)10\text{V}, f=1\text{MHz}$		3.7 (5.5)		pF
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=(-)10\text{mA}, I_B=(-)0.5\text{mA}$		(-)0.1	(-)0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$ $I_C=(-)10\mu\text{A}, I_E=0$		(-)50		V
C-E Breakdown Voltage	$V_{(BR)CEO}$ $I_C=(-)100\mu\text{A}, R_{BE}=\infty$		(-)50		V
Input OFF-State Voltage	$V_{I(off)}$ $V_{CE}=(-)5\text{V}, I_C=(-)100\mu\text{A}$	(-)0.5	(-)0.7	(-)0.9	V
Input ON-State Voltage	$V_{I(on)}$ $V_{CE}=(-)0.2\text{V}, I_C=(-)5\text{mA}$	(-)0.7	(-)1.0	(-)2.0	V
Input Resistance	R_1	7	10	13	k Ω
Resistance Ratio	R_1/R_2	0.193	0.213	0.234	

Electrical Connection

P N P

N P N

Case Outline 2033
(unit:mm)

B: Base
C: Collector
E: Emitter

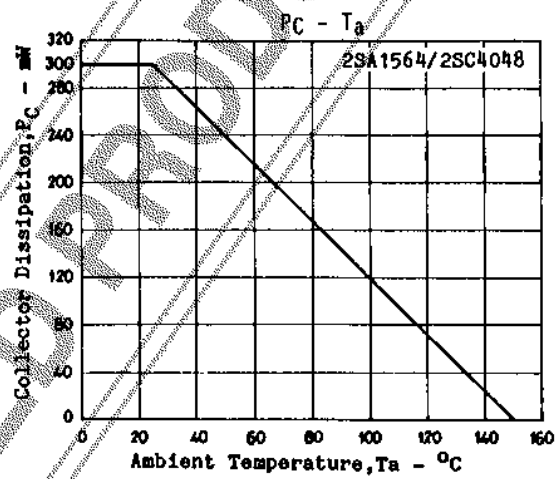
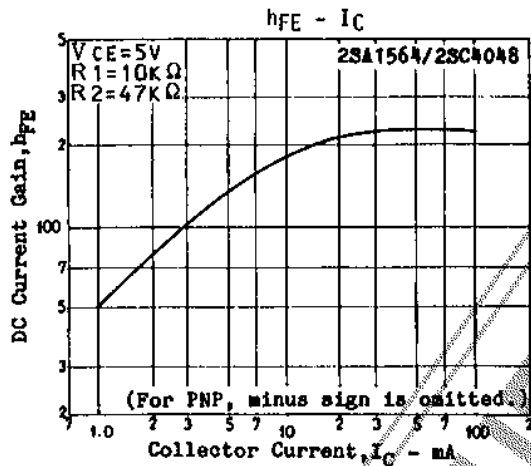
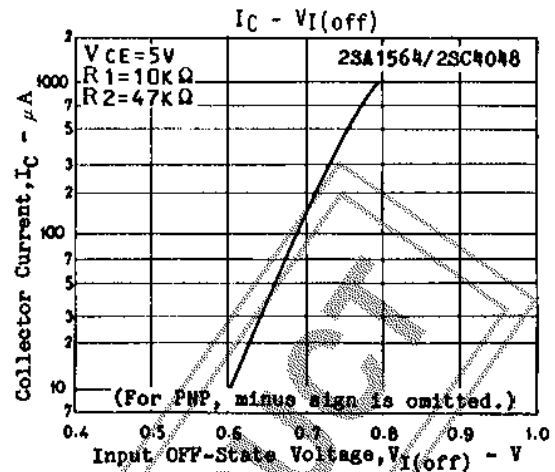
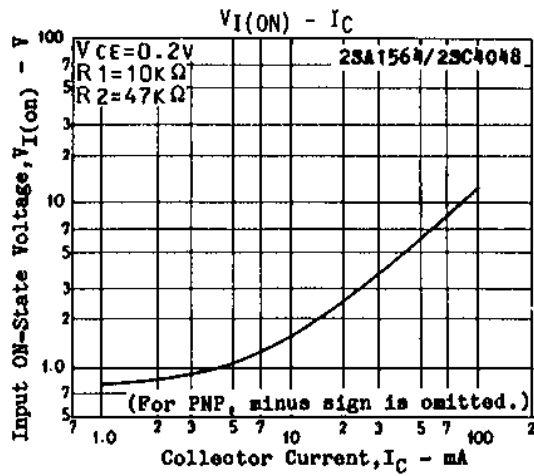
SANYO: SPA

Specifications and information herein are subject to change without notice.

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