

2SA1565, 2SC4049



2051

PNP/NPN Epitaxial Planar
Silicon Transistors

Switching Applications (with Bias Resistances $R_1=10k\Omega$, $R_2=47k\Omega$)

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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
- Special pin assignment (Emitter center)

(): 2SA1565

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

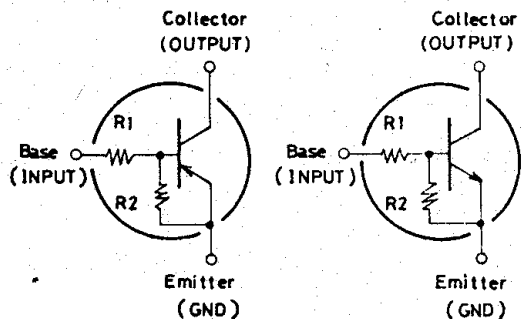
			unit
Collector to Base Voltage	V_{CB0}	(-)50	V
Collector to Emitter Voltage	V_{CE0}	(-)50	V
Emitter to Base Voltage	V_{EB0}	(-)6	V
Collector Current	I_C	(-)100	mA
Peak Collector Current	i_{cp}	(-)200	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	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_{CB0}	$V_{CB}=(-)40\text{V}, I_E=0$			(-)0.1	μA
Collector Cutoff Current	I_{CE0}	$V_{CE}=(-)40\text{V}, I_B=0$			(-)0.5	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=(-)5\text{V}, I_C=0$	(-)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	$V_{(BR)CB0}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)50			V
C-E Breakdown Voltage	$V_{(BR)CE0}$	$I_C=(-)100\mu\text{A}, R_{BE}=\infty$	(-)50			V

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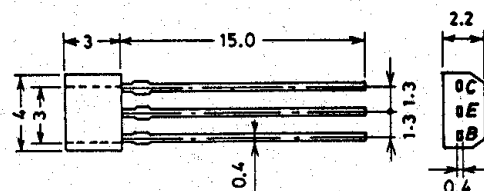
Electrical Connection



2SA1565(PNP)

2SC4049(NPN)

Case Outline 2051 (unit:mm)



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

2SA1565/2SC4049

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		min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE}=(-)5V, I_C=(-)100\mu A$	$(-)0.5(-)0.7(-)0.9$		V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)5mA$	$(-)0.7(-)1.0(-)2.0$		V
Input Resistance	R_1		7	10	kohm
Resistance Ratio	R_1/R_2		0.193	0.213	0.234

