



No.1682A

2SA1420/2SC3653

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications
(with Bias Resistor)

Use

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

Features

. With bias resistor ($R1=47k\Omega$, $R2=47k\Omega$).

(): 2SA1420

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

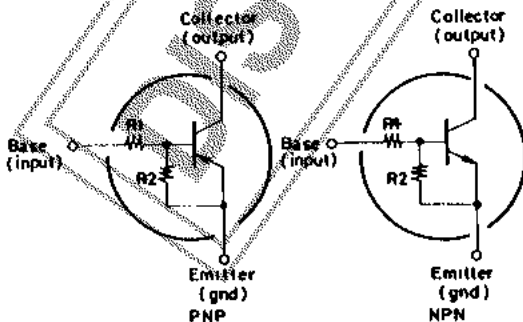
			unit
Collector to Base Voltage	V_{CB0}	(-)50	V
Collector to Emitter Voltage	V_{CE0}	(-)50	V
Emitter to Base Voltage	V_{EB0}	(-)10	V
Collector Current	I_C	(-)100	mA
Collector Current(Pulse)	I_{CP}	(-)200	mA
Collector Dissipation	P_C	400	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

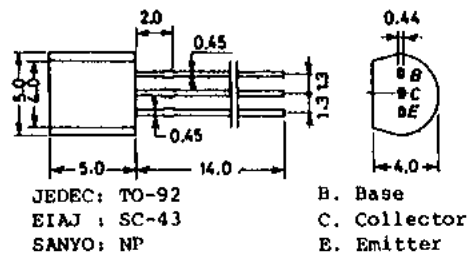
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40\text{V}, I_E=0$		(-)0.1		μA
Collector Cutoff Current	I_{CEO}	$V_{CE}=(-)40\text{V}, I_B=0$		(-)0.5		μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)5\text{V}, I_C=0$	(-)30	(-)53	(-)80	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)5\text{V}, I_C=(-)5\text{mA}$	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	$V_{CE(sat)}$	$I_C=(-)5\text{mA}, I_B=(-)0.25\text{mA}$	(-)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	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C(-)5mA$	(-)1.0	(-)2.5	(-)5.0	V
Input Resistance	R_1		32	47	62	k Ω
Resistance Ratio	R_1/R_2		0.9	1.0	1.1	-

Sample Application Circuit

