

**SANYO**

No.1290C

**2SA1348/2SC3402**

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications  
(with Bias Resistance)

**Applications**

Switching circuit, inverter, interface circuit, driver

**Features**

- Built-in bias resistor ( $R_1=10k\Omega$ ,  $R_2=10k\Omega$ ).
- Small-sized package (SPA).

( ): 2SA1348

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

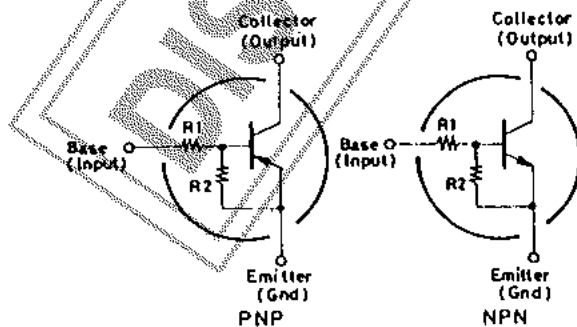
			unit
Collector to Base Voltage	V <sub>CB0</sub>	(-)50	V
Collector to Emitter Voltage	V <sub>CE0</sub>	(-)50	V
Emitter to Base Voltage	V <sub>EB0</sub>	(-)10	V
Collector Current	I <sub>C</sub>	(-)100	mA
Collector Current(Pulse)	I <sub>CP</sub>	(-)200	mA
Collector Dissipation	P <sub>C</sub>	300	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

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

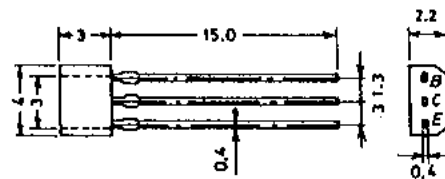
			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(-)0.1	μA
Collector Cutoff Current	I <sub>CE0</sub>	V <sub>CE</sub> =(-)40V, I <sub>B</sub> =0			(-)0.5	μA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> =(-)5V, I <sub>C</sub> =0	(-)170	(-)250	(-)330	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)10mA	50			
Gain-bandwidth product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)5mA		250 (200)		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		3.7 (5.5)		pF
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)10mA, I <sub>B</sub> =(-)0.5mA	(-)0.1	(-)0.3		V

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**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.

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			min	typ	max	unit
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)100\mu A, R_{BE} = \infty$	(-)50			V
Input Off Voltage	$V_{I(off)}$	$V_{CE} = (-)5V, I_C = (-)100\mu A$	(-)0.8	(-)1.1	(-)1.5	V
Input On Voltage	$V_{I(on)}$	$V_{CE} = (-)0.2V, I_C = (-)10mA$	(-)1.0	(-)2.0	(-)4.0	V
Input Resistance	$R_1$		7.0	10	13	k $\Omega$
Input Resistance Ratio	$R_1/R_2$		0.9	1.0	1.1	

■ Sample Application Circuit

