

<b>SANYO</b>	No.2163A	<b>2SA1523/2SC3917</b>
		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 ( $R_1=4.7k\Omega, R_2=4.7k\Omega$ )
- Small-sized package (SPA)
- Large current capacity ( $I_C=500mA$ )

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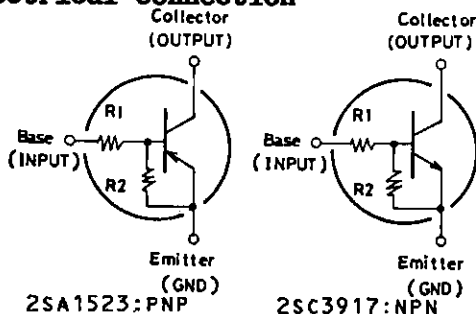
**Absolute Maximum Ratings at  $T_a=25^\circ C$**

			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	$I_C$	(-)500	mA
Collector Current (Pulse)	$I_{CP}$	(-)800	mA
Collector Dissipation	$P_C$	300	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

**Electrical Characteristics at  $T_a=25^\circ C$**

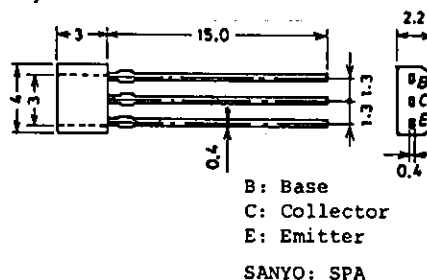
		min	typ	max	unit
Collector Cutoff Current	$I_{CB0}$ $V_{CB}=(-)40V, I_E=0$			(-)0.1	$\mu A$
	$I_{CE0}$ $V_{CE}=(-)40V, I_B=0$			(-)0.5	$\mu A$
Emitter Cutoff Current	$I_{EB0}$ $V_{EB}=(-)5V, I_C=0$	(-)410	(-)532	(-)760	$\mu A$
DC Current Gain	$h_{FE}$ $V_{CE}=(-)5V, I_C=(-)20mA$	50			
Gain-Bandwidth 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
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=(-)40mA, I_B=(-)2mA$	(-)0.1	(-)0.3		V
C-B Breakdown Voltage	$V_{(BR)CB0}$ $I_C=(-)10\mu A, I_E=0$	(-)50			V
C-E Breakdown Voltage	$V_{(BR)CE0}$ $I_C=(-)100\mu A, R_{BE}=\infty$	(-)50			V
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	$V_{I(on)}$ $V_{CE}=(-)0.2V, I_C=(-)20mA$	(-)1.0	(-)1.9	(-)4.0	V
Input Resistance	$R_1$	3.3	4.7	6.1	k $\Omega$
Resistance Ratio	$R_1/R_2$	0.9	1.0	1.1	

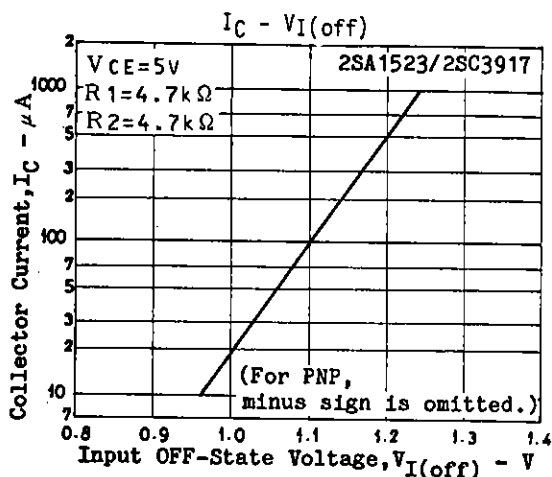
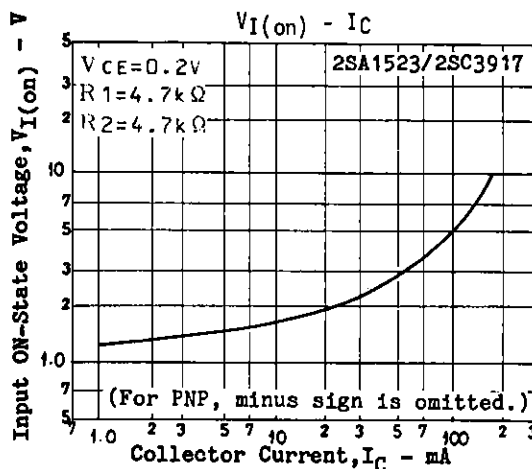
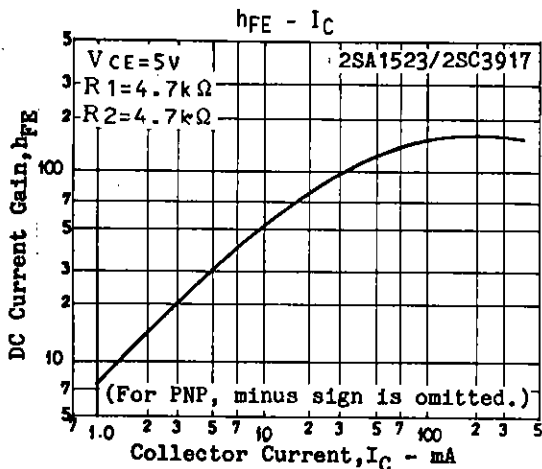
**Electrical Connection**



**Package Dimensions 2033**

(unit: mm)





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