

Ordering number:ENN2161B

PNP/NPN Epitaxial Planar Silicon Transistors



# 2SA1520/2SC3914

## Switching Applications (with Bias Resistance)

### Applications

- Switching circuits, inverter circuits, interface circuits, driver circuits.

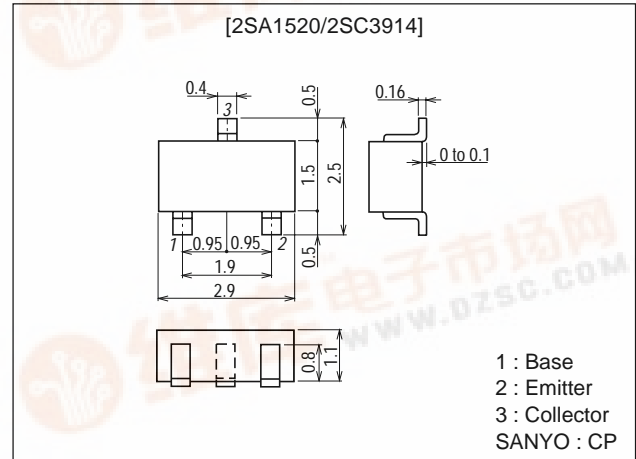
### Features

- On-chip bias resistance : R1=2.2kΩ, R2=10kΩ.
- Small-sized package : CP.
- Large current capacity : I<sub>C</sub>=500mA.

### Package Dimensions

unit:mm

2018B



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### Specifications

Absolute Maximum Ratings at T<sub>a</sub> = 25°C

Parameter	Symbol	Conditions	Ratings	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>EBO</sub>		(-6)	V
Collector Current	I <sub>C</sub>		(-500)	mA
Collector Current (Pulse)	I <sub>CP</sub>		(-800)	mA
Collector Dissipation	P <sub>C</sub>		200	mW
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Electrical Characteristics at T<sub>a</sub> = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(-0.1)	μA
	I <sub>CE0</sub>	V <sub>CE</sub> =(-)40V, I <sub>B</sub> =0			(-0.5)	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)5V, I <sub>C</sub> =0	(-315)	(-410)	(-590)	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		MHz
				(200)		MHz

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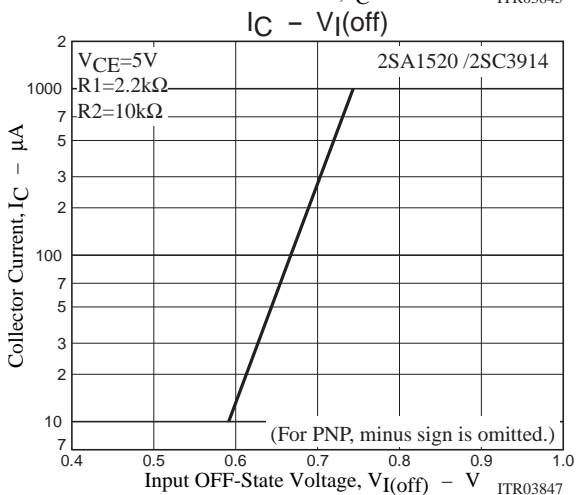
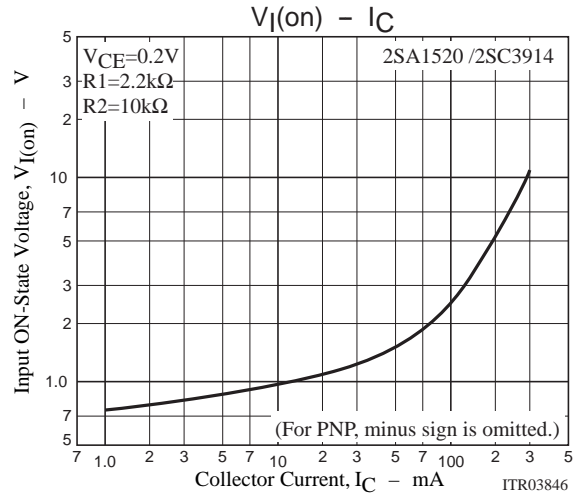
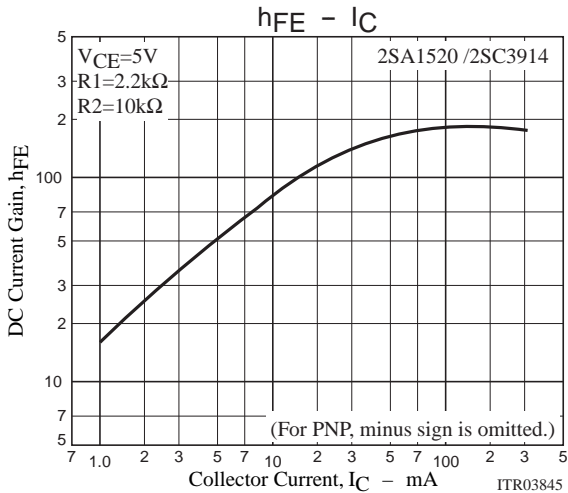
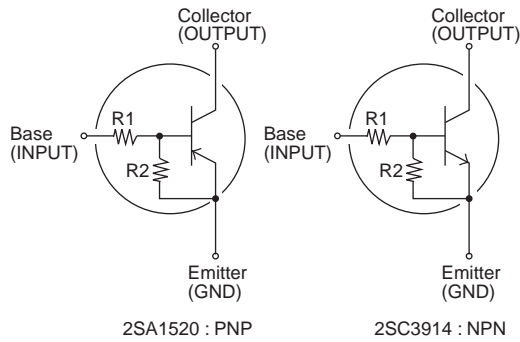
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10V, f=1MHz$		3.7		pF
				(5.5)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)50mA, I_B=(-)2.5mA$		(-)0.1	(-)0.3	V
Collector-to-Base 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-State Voltage	$V_{I(off)}$	$V_{CE}=(-)5V, I_C=(-)100\mu A$	(-)0.5	(-)0.67	(-)0.9	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)50mA$	(-)0.7	(-)1.6	(-)3.0	V
Input Resistance	R1		1.5	2.2	2.9	k $\Omega$
Resistance Ratio	R1/R2		0.198	0.22	0.242	

Marking 2SA1520 : NL, 2SC3914 : VY

## Electrical Connection



## 2SA1520/2SC3914

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