



## Switching Applications (with Bias Resistance)

### Applications

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

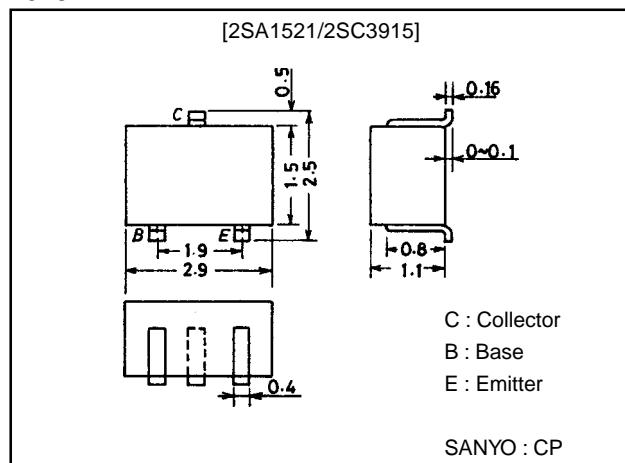
### Features

- On-chip bias resistance :  $R1=2.2k\Omega$ ,  $R2=2.2k\Omega$ .
- Small-sized package : CP.
- Large current capacity :  $I_C=500mA$ .

### Package Dimensions

unit:mm

2018A



( ) : 2SA1521

### Specifications

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

Parameter	Symbol	Conditions	Ratings		Unit
Collector-to-Base Voltage	$V_{CBO}$			(-50)	V
Collector-to-Emitter Voltage	$V_{CEO}$			(-50)	V
Emitter-to-Base Voltage	$V_{EBO}$			(-6)	V
Collector Current	$I_C$			(-500)	mA
Collector Current (Pulse)	$I_{CP}$			(-800)	mA
Collector Dissipation	$P_C$			200	mW
Junction Temperature	$T_j$			150	°C
Storage Temperature	$T_{stg}$			-55 to +150	°C

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

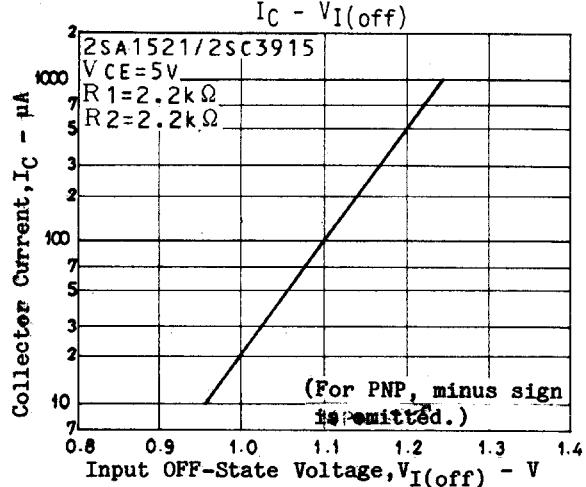
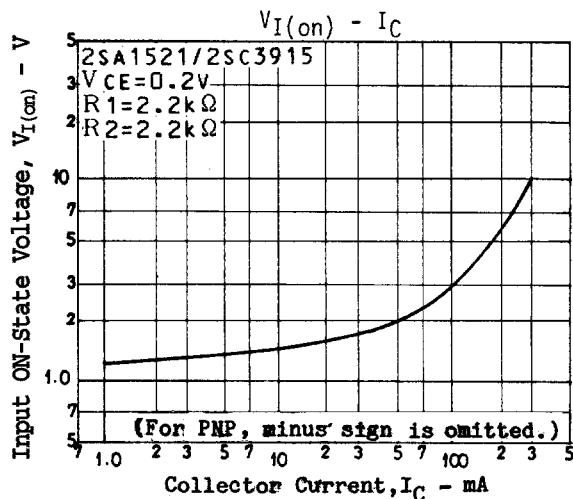
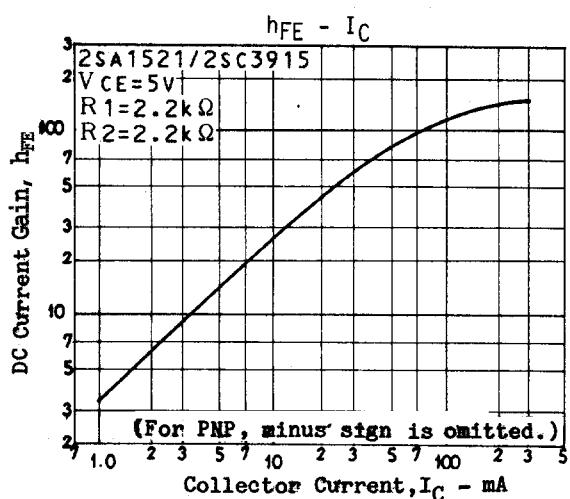
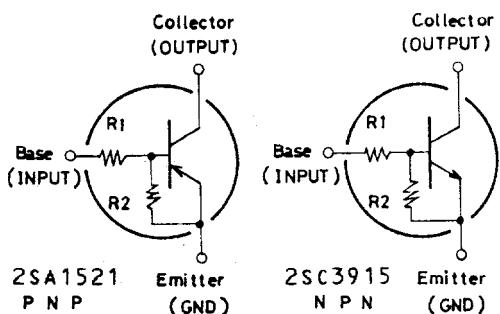
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)40V, I_E=0$			(-)0.1	µA
	$I_{CEO}$	$V_{CE}=(-)40V, I_B=0$			(-)0.5	µA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)5V, I_C=0$	(-)860	(-) 1140	(-) 1670	µA
	$h_{FE}$	$V_{CE}=(-)5V, I_C=(-)50mA$	50			
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
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	$V_{I(off)}$	$V_{CE}=(-)5V, I_C=(-)100\mu A$	(-)0.8	(-)1.1	(-)1.5	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)50mA$	(-)1.0	(-)1.9	(-)4.0	V
Input Resistance	$R_1$		1.5	2.2	(-)2.9	kΩ
Resistance Ratio	$R_1/R_2$		0.9	1.0	(-)1.1	

Marking 2SA1521 : OL, 2SC3915 ; WY

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