



2SA1520/2SC3914

Switching Applications (with Bias Resistance)

Applications

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

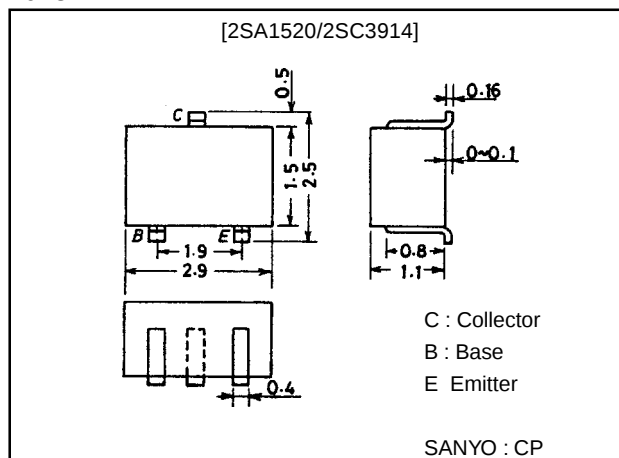
Features

- On-chip bias resistance : $R_1=2.2k\Omega$, $R_2=10k\Omega$.
- Small-sized package : CP.
- Large current capacity : $I_C=500mA$.

Package Dimensions

unit:mm

2018A



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Specifications

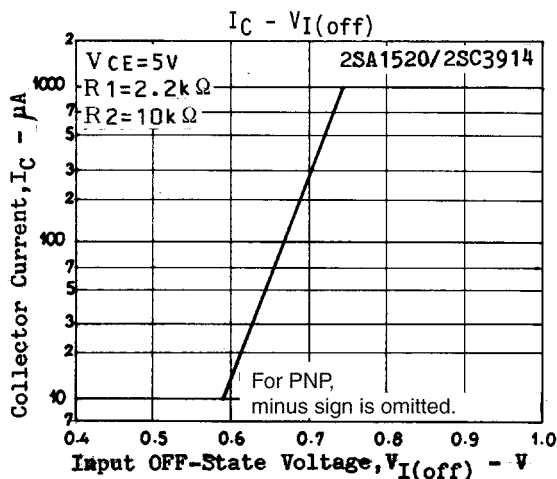
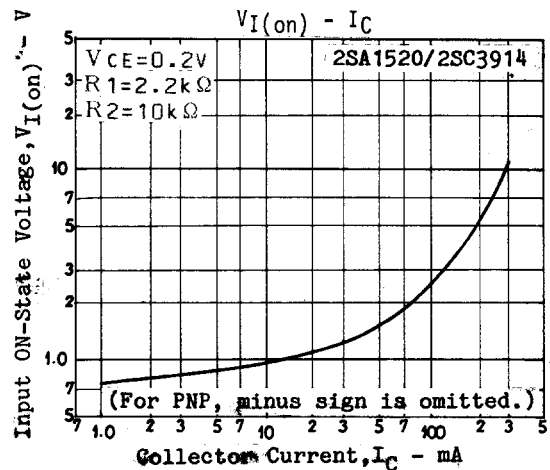
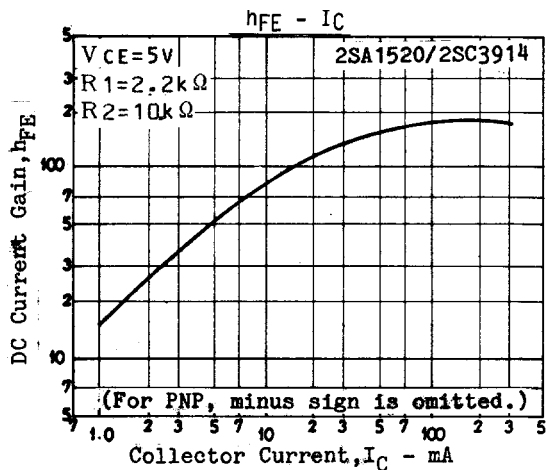
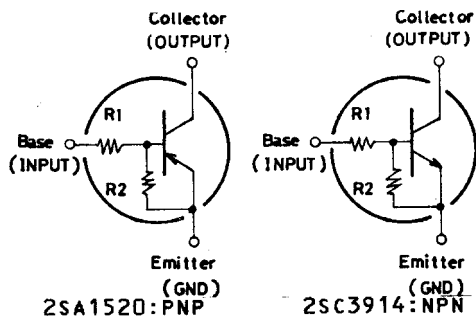
Absolute Maximum Ratings at $T_a = 25^\circ C$

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	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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}	$V_{EB}=(-)5V, I_C=0$	(-)315	(-)410	(-)590	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)5V, I_C=(-)10mA$	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	$V_{I(off)}$	$V_{CE}=(-)5V, I_C=(-)100\mu A$	(-)0.5	(-)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	R_1		1.5	2.2	2.9	$k\Omega$
Resistance Ratio	R_1/R_2		0.198	0.22	0.242	

Electrical Connection



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