



2SA1523/2SC3917

Switching Applications (with Bias Resistance)

Applications

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

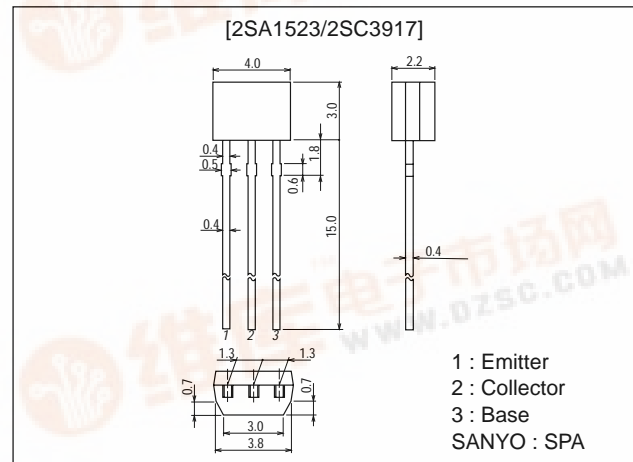
Features

- On-chip bias resistance : R1=4.7kΩ, R2=4.7kΩ.
- Small-sized package : SPA.
- Large current capacity : I_C=500mA.

Package Dimensions

unit:mm

2033A



() : 2SA1523

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-)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		300	mW
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	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	(-)410	(-)532	(-)760	μA
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

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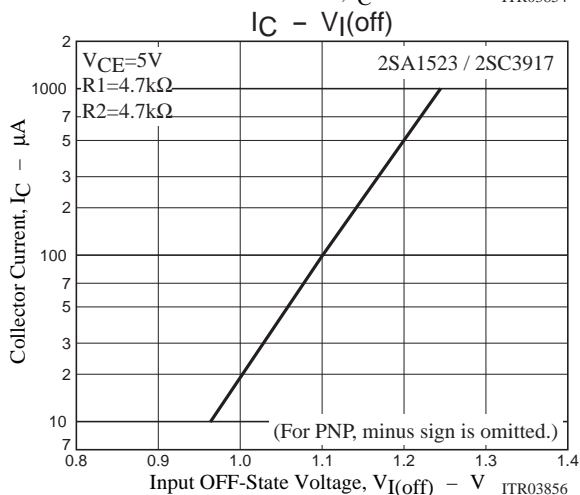
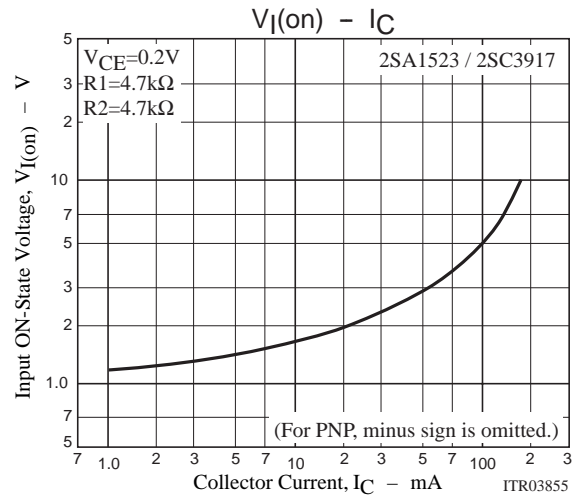
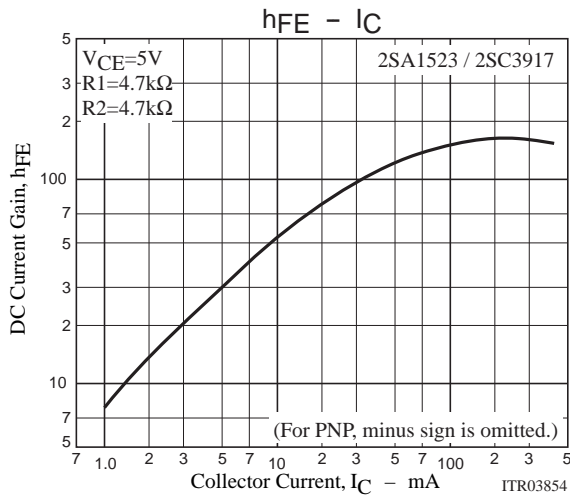
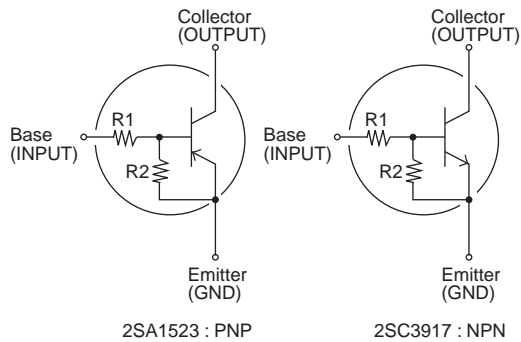


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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		3.7		pF
				(5.5)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)40mA, I_B=(-)2mA$		(-)0.1	(-)0.3	V
Collector-to-Base Breakdown 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	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)20mA$	(-)1.0	(-)1.9	(-)4.0	V
Input Resistance	R1		3.3	4.7	6.1	k Ω
Resistance Ratio	R1/R2		0.9	1.0	1.1	

Electrical Connection



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