PNP/NPN Epitaxial Planar Silicon Transistors



2SA1523/2SC3917

Switching Applications (with Bias Resistance)

Applications

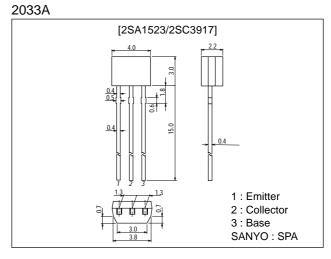
• Switching circuits, inverter circuits, interface circuits, driver circuits.

Features

- · On-chip bias resistance : R1=4.7k Ω , R2=4.7k Ω .
- · Small-sized package : SPA.
- \cdot Large current capacity : I_C=500mA.

Package Dimensions

unit:mm



():2SA1523

Specifications

Absolute Maximum Ratings at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		(–)50	V
Collector-to-Emitter Voltage	VCEO		(–)50	V
Emitter-to-Base Voltage	VEBO		()6	V
Collector Current	IC		(–)500	mA
Collector Current (Pulse)	ICP		(–)800	mA
Collector Dissipation	PC		300	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at $Ta = 25^{\circ}C$

Symbol	Conditions	Ratings			Unit
		min	typ	max	Unit
ICBO	$V_{CB}=(-)40V, I_{E}=0$			(–)0.1	μA
ICEO	V _{CE} =(-)40V, I _B =0			(–)0.5	μA
IEBO	V _{EB} =(-)5V, I _C =0	(–)410	(–)532	(–)760	μA
h _{FE}	V _{CE} =(-)5V, I _C =(-)20mA	50			
fT	V _{CE} =(-)10V, I _C =(-)5mA		250		MHz
			(200)		MHz
	I _{CBO} I _{CEO} I _{EBO} hFE	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Symbol Conditions min typ ICBO VCB=(-)40V, IE=0 ICEO VCE=(-)40V, IE=0 <	Symbol Conditions ICBO VCB=(-)40V, IE=0 (-)0.1 ICBO VCE=(-)40V, IB=0 (-)0.5 IEBO VEB=(-)5V, IC=0 (-)410 (-)532 hFE VCE=(-)5V, IC=(-)20mA 50 1 fr VCE=(-)10V, IC=(-)5mA 250 1

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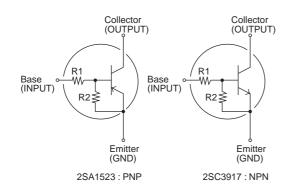
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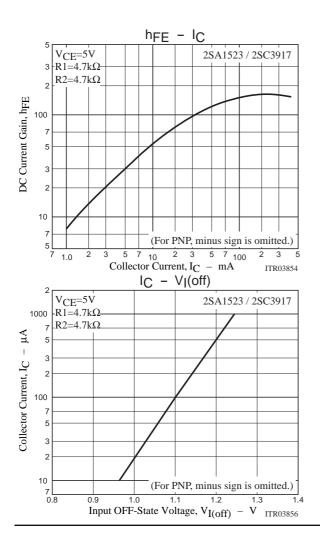
SANYO Electric Co., Ltd. Semiconductor Company TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

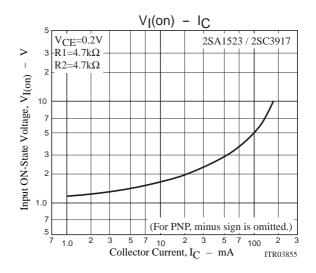
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		3.7		pF
				(5.5)		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)40mA, I _B =(-)2mA		(–)0.1	(–)0.3	V
Collector-to-Base Breakdown Voltage	V _(BR) CBO	I _C =(-)10μΑ, I _E =0	(–)50			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =(−)100μA, R _{BE} =∞	(–)50			V
Input OFF-State Voltage	V _{I(off)}	V _{CE} =(-)5V, I _C =(-)100µA	(–)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	kΩ
Resistance Ratio	R1/R2		0.9	1.0	1.1	

Electrical Connection







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