PNP/NPN Epitaxial Planar Silicon Transistors



2SA1525/2SC3919

Switching Applications (with Bias Resistance)

Applications

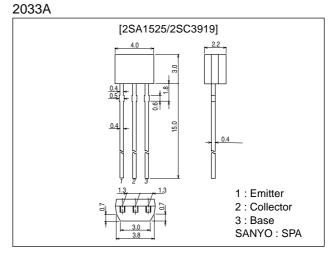
• Switching circuits, inverter circuits, interface circuits, driver circuits.

Features

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

Package Dimensions

unit:mm



():2SA1525

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		(–)50	V
Collector-to-Emitter Voltage	VCEO		(–)50	V
Emitter-to-Base Voltage	V _{EBO}		(–)6	V
Collector Current	IC		(–)500	mA
Collector Current (Pulse)	I _{CP}		(–)800	mA
Collector Dissipation	PC		300	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)40V, I _E =0			(–)0.1	μA
	ICEO	V _{CE} =(-)40V, I _B =0			(–)0.5	μΑ
Emitter Cutoff Current	IEBO	V _{EB} =(-)5V, I _C =0	(–)860	(–) 1140	(–) 1670	μA
DC Current Gain	hFE	V _{CE} =(-)5V, I _C =(-)50mA	50			
Gain-Bandwidth Product	fT	V _{CE} =(-)10V, I _C =(-)5mA		250		MHz
				(200)		MHz

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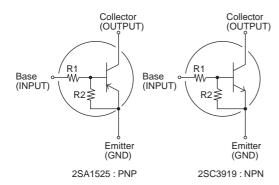
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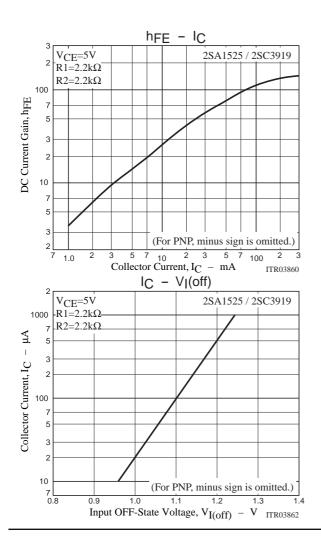
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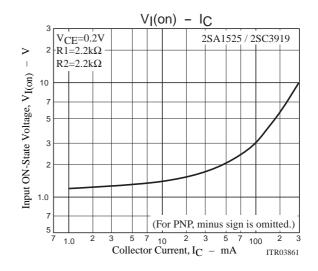
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		3.7		pF
				(5.5)		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)50mA, I _B =(-)2.5mA		(–)0.1	(–)0.3	V
Collector-to-Base 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 =(-)50mA	(–)1.0	(–)1.9	(–)4.0	V
Input Resistance	R1		1.5	2.2	2.9	kΩ
Resistance Ratio	R1/R2		0.9	1.0	1.1	

Electrical Connection







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