



Switching Applications (with Bias Resistance)

Applications

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

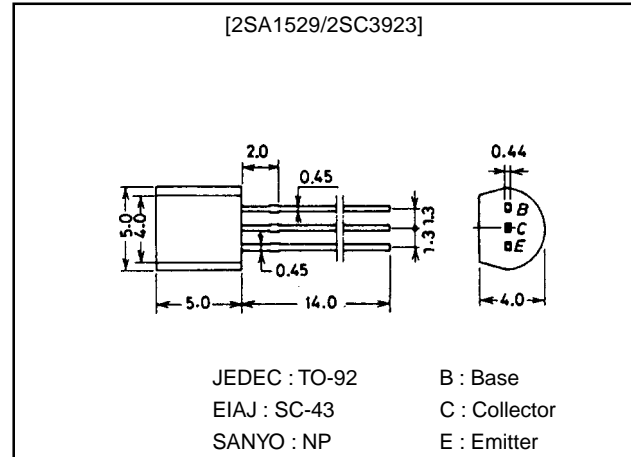
Features

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

Package Dimensions

unit:mm

2003A



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Specifications

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

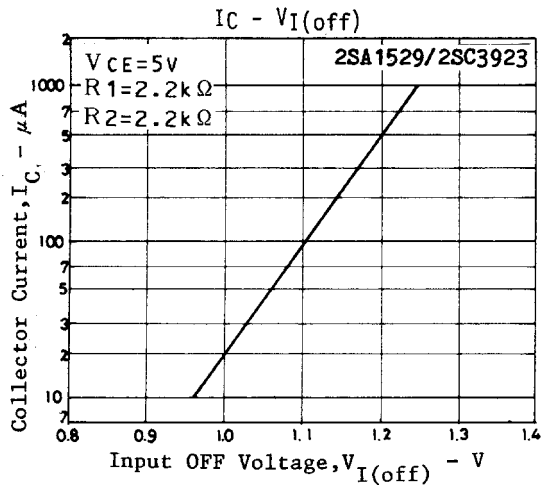
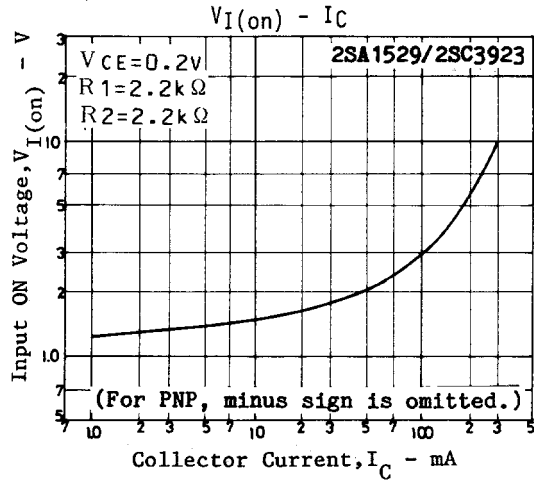
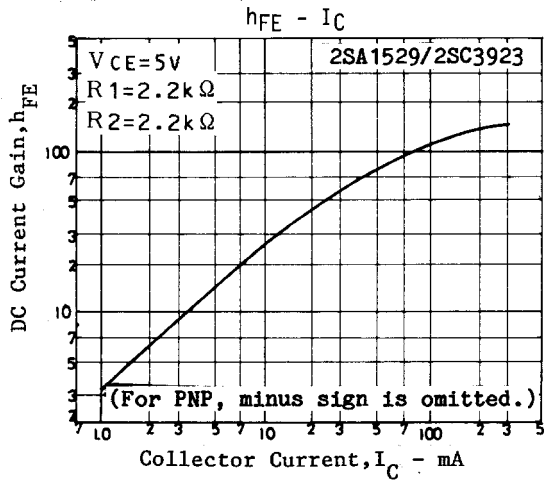
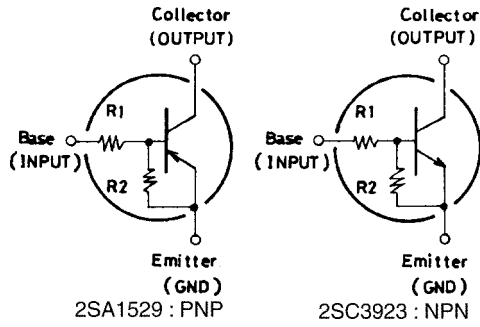
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)50	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)500	mA
Collector Current (Pulse)	I_{CP}		(-)800	mA
Collector Dissipation	P_C		600	mW
Junction Temperature	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}	$V_{EB}=(-)5V, I_C=0$	(-)860	(-)1140	(-)1670	μA
DC Current Gain	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	R1		1.5	2.2	2.9	$k\Omega$
Resistance Ratio	R1/R2		0.9	1.0	1.1	

2SA1529/2SC3923

Electrical Connection



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