



## Switching Applications (with Bias Resistance)

### Applications

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

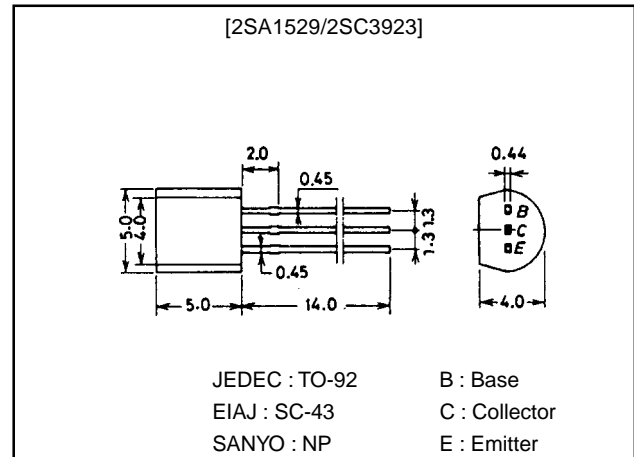
### Features

- 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 $T_a = 25^\circ C$

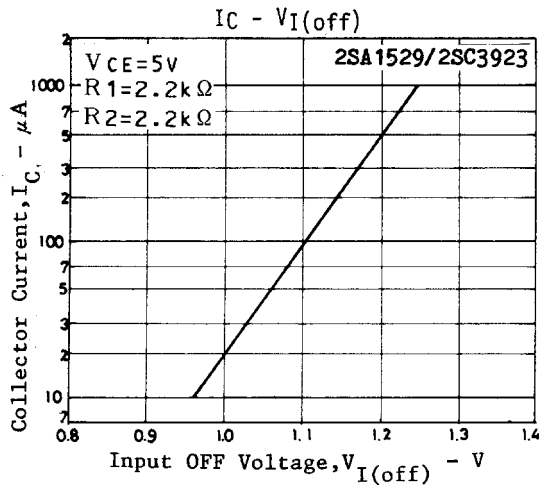
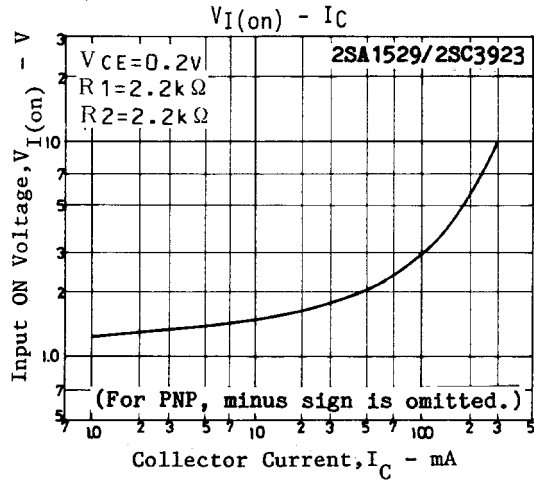
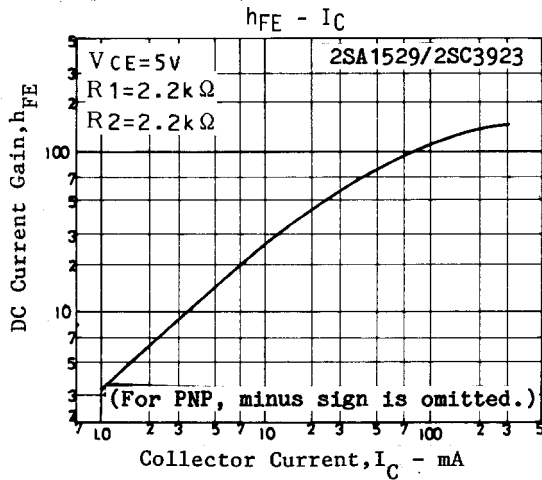
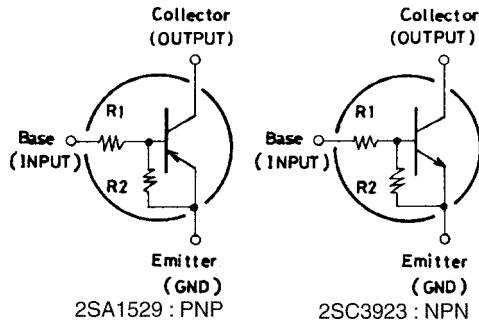
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)50	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)50	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)6	V
Collector Current	$I_C$		(-)500	mA
Collector Current (Pulse)	$I_{CP}$		(-)800	mA
Collector Dissipation	$P_C$		600	mW
Junction 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	$\mu A$
	$I_{CEO}$	$V_{CE}=(-)40V$ , $I_B=0$			(-)0.5	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)5V$ , $I_C=0$	(-)860	(-)1140	(-)1670	$\mu A$
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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