



## 2SA1518/2SC3912

### Switching Applications (With Bias Resistance)

#### Application

- Switching circuits, inverters circuits, interface circuits, driver circuits.

#### Features

- On-chip bias resistance :  $R_1=10k\Omega$ ,  $R_2=10k\Omega$ .
- Small-sized package : CP.
- Large current capacity :  $I_C=500mA$ .

( ) : 2SA1518

#### Specifications

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

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	$V_{EBO}$		(-)-10	V
Collector Current	$I_C$		(-)-500	mA
Peak Collector Current	$I_{CP}$		(-)-800	mA
Collector Dissipation	$P_C$		200	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	$I_{CB0}$	$V_{CB}=-40V, I_E=0$			(-)-0.1	$\mu A$
	$I_{CEO}$	$V_{CE}=-40V, I_B=0$			(-)-0.5	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5V, I_C=0$	(-)-195	(-)-250	(-)-360	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=-5V, I_C=-10mA$	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

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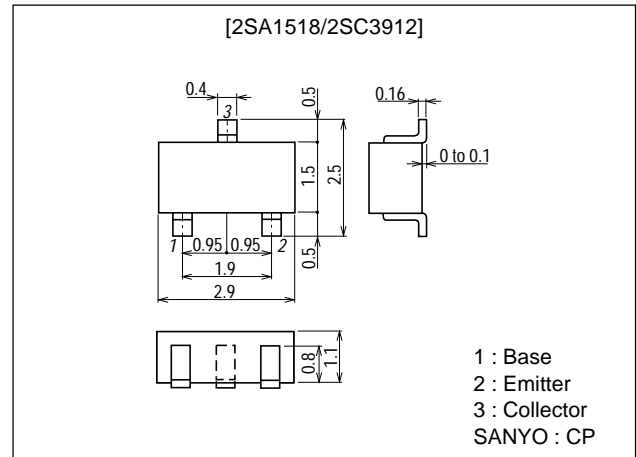
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#### Package Dimensions

unit:mm

2018B



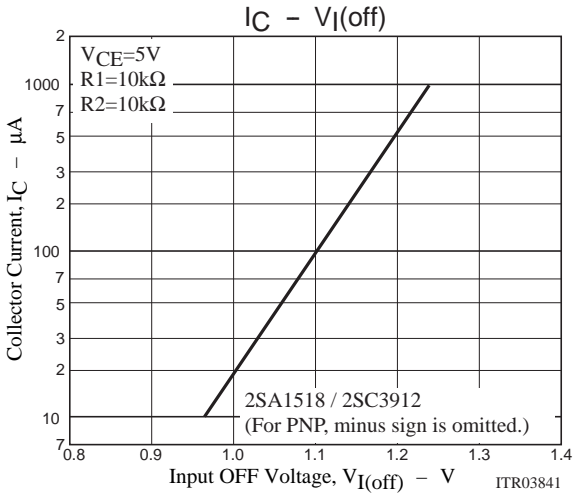
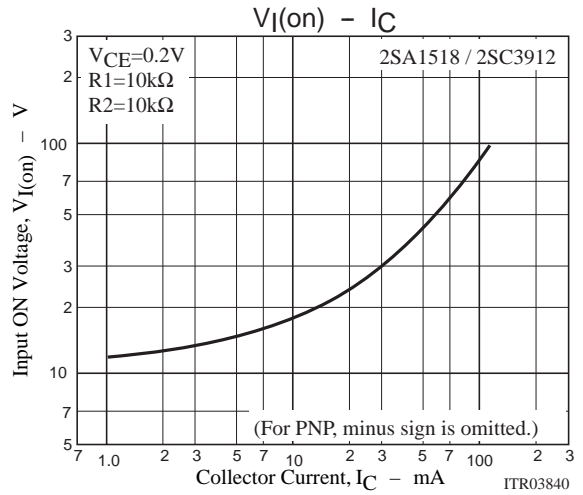
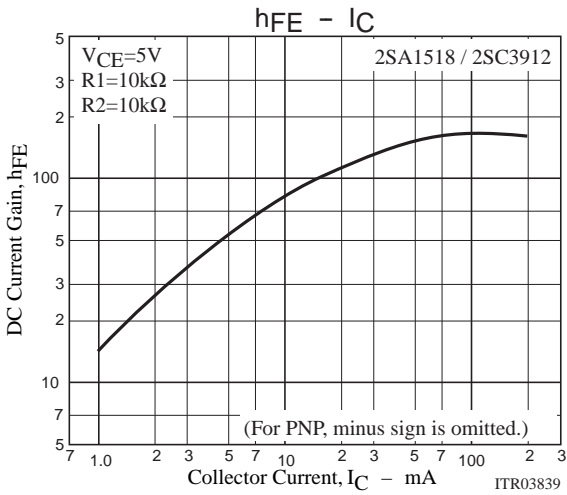
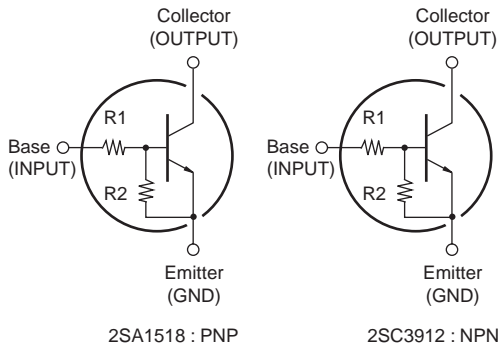
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)20mA, I_B=(-)1mA$		(-)0.1	(-)0.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)50			V
Collector-to-Emitter 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	$V_{I(on)}$	$V_{CE}=(-)0.2V, I_C=(-)10mA$	(-)1.0	(-)2.0	(-)4.0	V
Input Resistance	R1		7	10	13	k $\Omega$
Resistance Ratio	R1/R2		0.9	1.0	1.1	

Marking 2SA1518 : LL, 2SC3912 : TY

## Electrical Connection



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