



RA104S/RC104S

Switching Applications (with Bias Resistances)

Applications

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

Features

- On-chip bias resistances ($R_1=10k\Omega$, $R_2=47k\Omega$).
- Compact package (SPA).

() : RA104S

Specifications

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

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
Input Voltage	V_{IN}		(-)30	V
Collector Current	I_C		(-)100	mA
Collector Current (Pulse)	I_{CP}		(-)200	mA
Collector Dissipation	P_C		300	mW
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40\text{V}$, $I_E=0$			(-)0.1	μA
	I_{CEO}	$V_{CE}=(-)40\text{V}$, $I_B=0$			(-)0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)5\text{V}$, $I_C=0$	(-)67	(-)88	(-)125	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)5\text{V}$, $I_C=(-)5\text{mA}$	70			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}$, $I_C=(-)5\text{mA}$		250		MHz
				(200)		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}$, $f=1\text{MHz}$		3.5		pF
				(5.3)		pF

Marking : RA104S : A104, RC104S : C104

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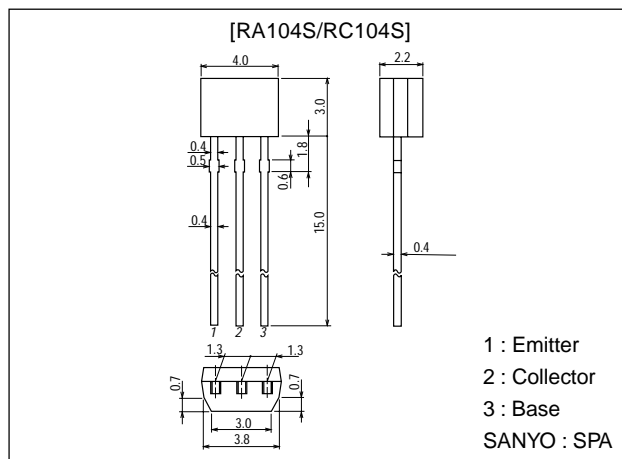
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Package Dimensions

unit:mm

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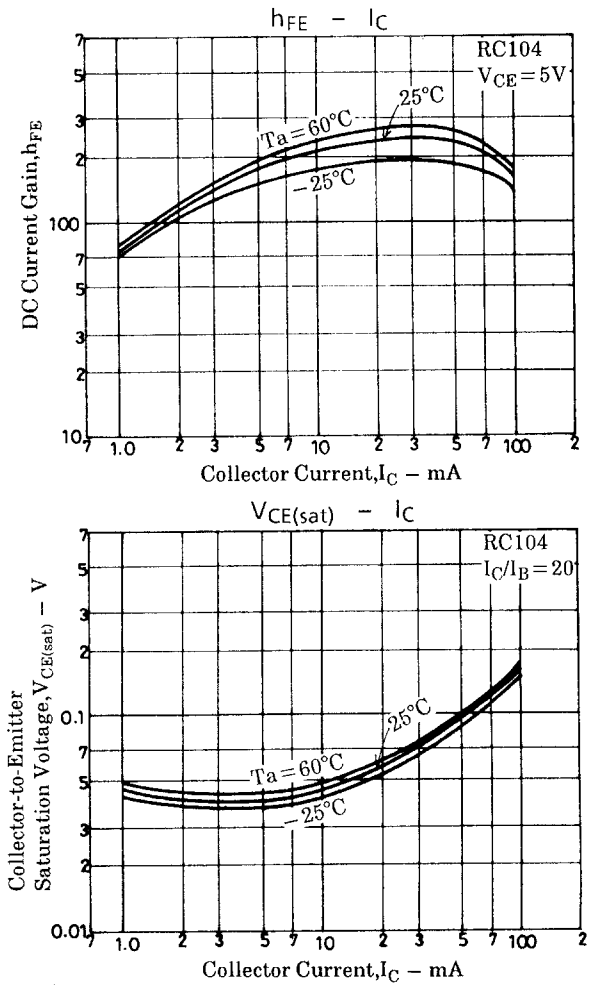
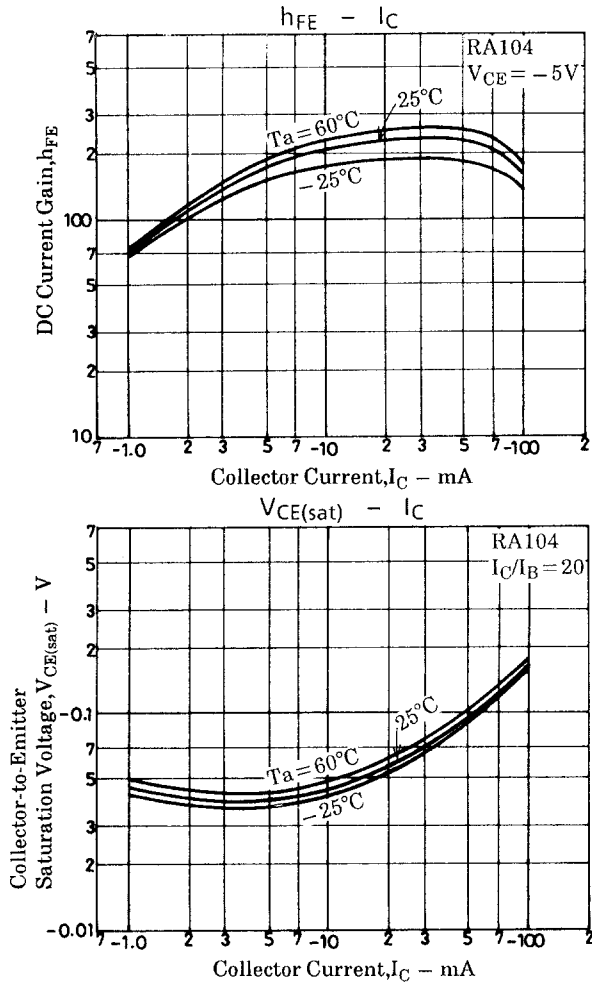
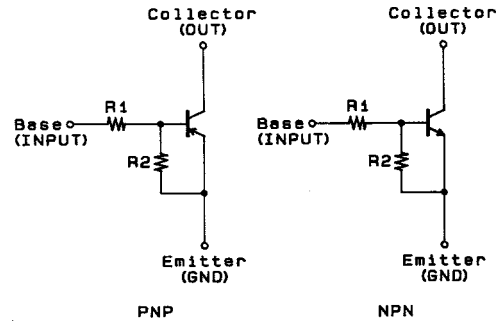


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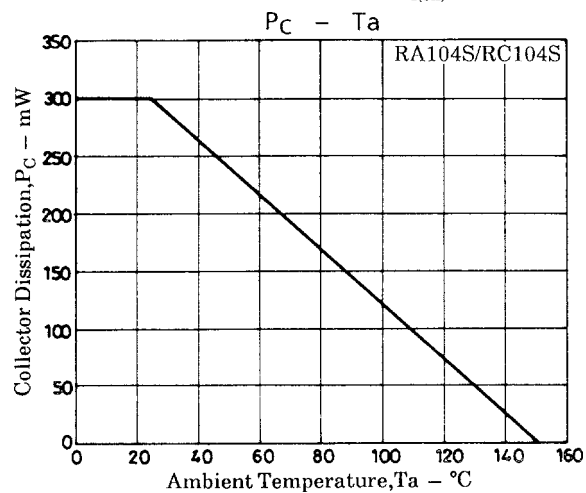
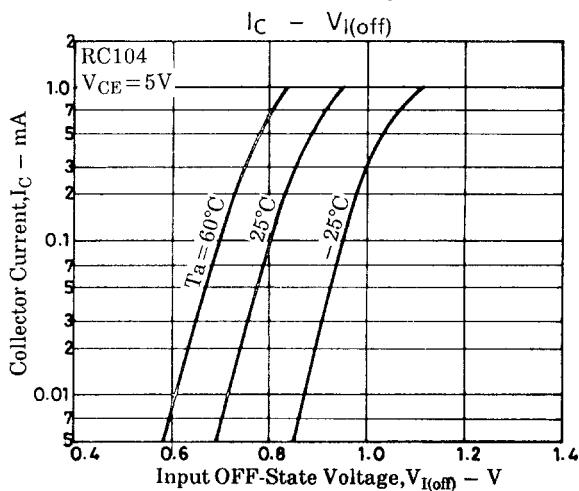
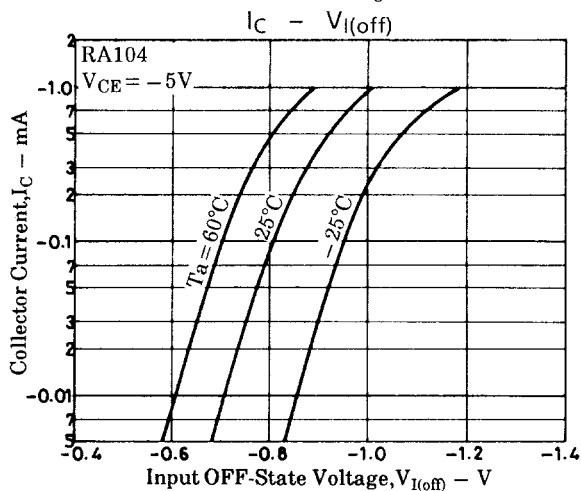
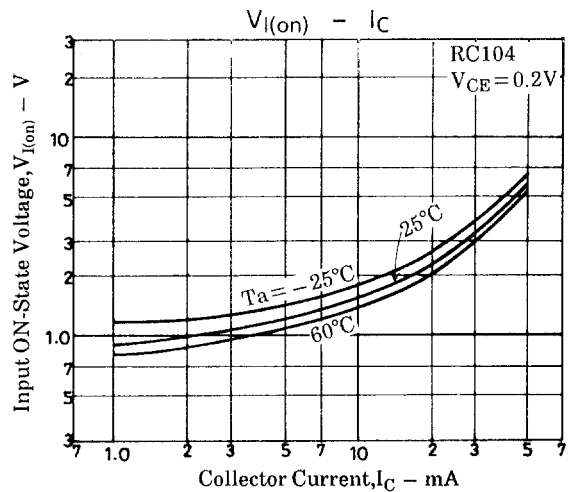
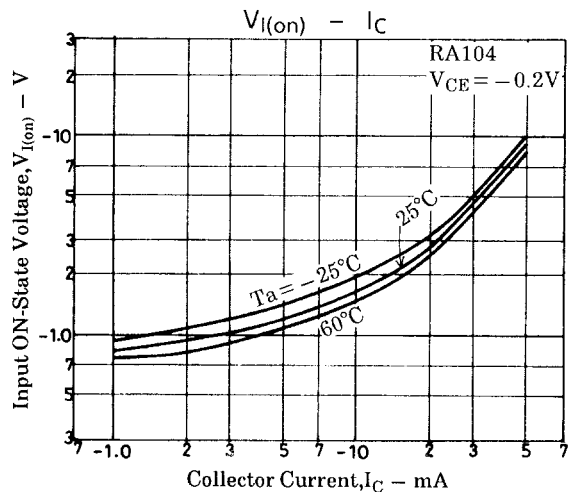
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)10\text{mA}$, $I_B=(-)0.5\text{mA}$		(-)0.1	(-)0.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}$, $I_E=0$	(-)50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)100\mu\text{A}$, $R_{BE}=\infty$	(-)50			V
Input OFF-State Voltage	$V_{IN(off)}$	$V_{CE}=(-)5\text{V}$, $I_C=(-)100\mu\text{A}$	(-)0.6	(-)0.8	(-)1.0	V
Input ON-State Voltage	$V_{IN(on)}$	$V_{CE}=(-)0.2\text{V}$, $I_C=(-)5\text{mA}$	(-)0.7	(-)1.0	(-)2.0	V
Input Resistance	R1		7	10	13	k Ω
Resistance Ratio	R1/R2			0.213		

Electrical Connection



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