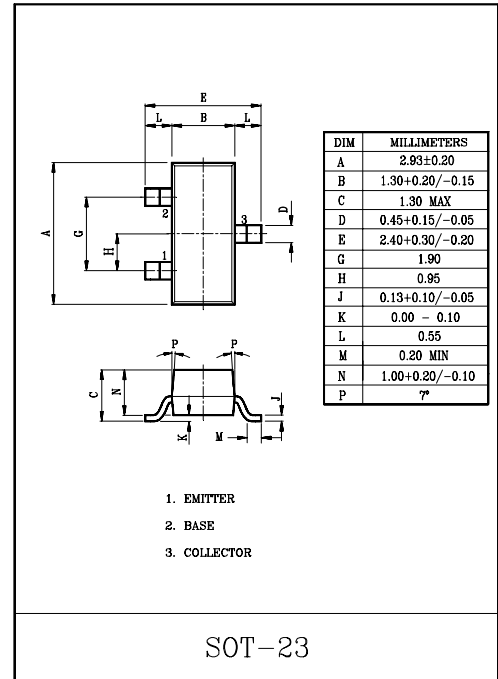
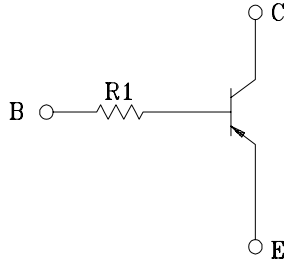


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

**FEATURES**

- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

**EQUIVALENT CIRCUIT**



**MAXIMUM RATINGS (Ta=25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	-50	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-50	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-100	mA

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

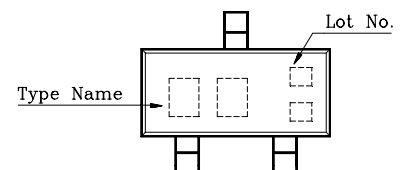
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0	-	-	-100	nA	
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0	-	-	-100	nA	
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	120	-	-		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-0.5mA	-	-0.1	-0.3	V	
Transition Frequency	f <sub>T</sub> *	V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA	-	250	-	MHz	
Input Resistor	KRA110S	R <sub>i</sub>		-	4.7	-	kΩ
	KRA111S			-	10	-	
	KRA112S			-	100	-	
	KRA113S			-	22	-	
	KRA114S			-	47	-	

Note : \*Characteristic of Transistor Only

**MARK SPEC**

TYPE	KRA110S	KRA111S	KRA112S	KRA113S	KRA114S
MARK	PK	PM	PN	PO	PP

**Marking**



# KRA110S ~ KRA114S

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRA110S	V <sub>O</sub> =-5V V <sub>IN</sub> =-5V R <sub>L</sub> =1kΩ	-	0.2	-	μS
		KRA111S		-	0.065	-	
		KRA112S		-	0.4	-	
		KRA113S		-	0.1	-	
		KRA114S		-	0.15	-	
	Storage Time	KRA110S		-	2.0	-	
		KRA111S		-	1.7	-	
		KRA112S		-	3.0	-	
		KRA113S		-	2.0	-	
		KRA114S		-	1.5	-	
	Fall Time	KRA110S		-	0.3	-	
		KRA111S		-	0.3	-	
		KRA112S		-	1.7	-	
		KRA113S		-	0.8	-	
		KRA114S		-	1.5	-	