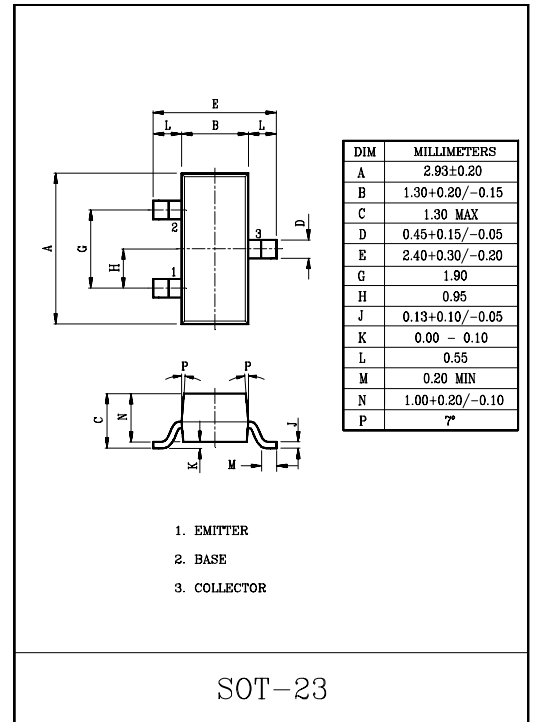
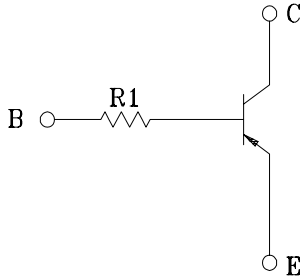


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

### 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>EB0</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)

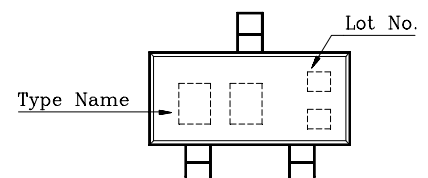
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0	-	-	-100	nA
Emitter Cut-off Current	I <sub>EB0</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0	-	-	-100	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <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	$V_O = -5V$ $V_{IN} = -5V$ $R_L = 1k\Omega$	-	0.2	-	$\mu S$	
		KRA111S		-	0.065	-		
		KRA112S		-	0.4	-		
		KRA113S		-	0.1	-		
		KRA114S		-	0.15	-		
	Storage Time	KRA110S		$t_{stg}$	-	2.0		-
		KRA111S			-	1.7		-
		KRA112S			-	3.0		-
		KRA113S			-	2.0		-
		KRA114S			-	1.5		-
	Fall Time	KRA110S		$t_f$	-	0.3		-
		KRA111S			-	0.3		-
		KRA112S			-	1.7		-
		KRA113S			-	0.8		-
		KRA114S			-	1.5		-