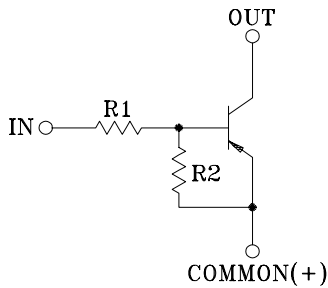


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION

### FEATURES

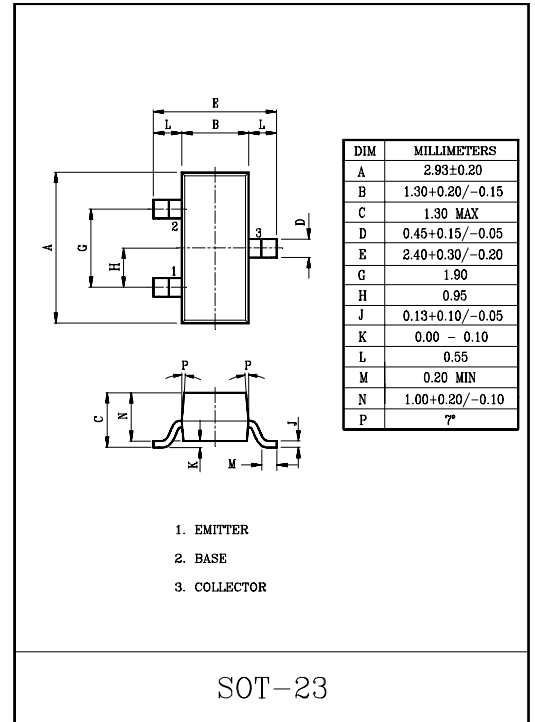
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

### EQUIVALENT CIRCUIT



### BIAS RESISTOR VALUES

TYPE NO.	R1(k $\Omega$ )	R2(k $\Omega$ )
KRA116S	1	10
KRA117S	2.2	2.2
KRA118S	2.2	10
KRA119S	4.7	10
KRA120S	10	4.7
KRA121S	47	10
KRA122S	100	100



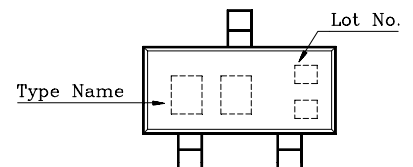
### MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA116S ~ 122S	V <sub>O</sub>	-50	V
	KRA116S		-10, 5	
	KRA117S		-12, 10	
	KRA118S		-12, 5	
	KRA119S		-20, 7	
	KRA120S		-30, 10	
	KRA121S		-40, 15	
Input Voltage	KRA122S	V <sub>I</sub>	-40, 10	V
Output Current		I <sub>O</sub>	-100	mA
Power Dissipation		P <sub>D</sub>	200	mW
Junction Temperature		T <sub>i</sub>	150	°C
Storage Temperature Range	KRA116S ~ 122S	T <sub>stg</sub>	-55 ~ 150	°C

### MARK SPEC

TYPE	KRA116S	KRA117S	KRA118S	KRA119S	KRA120S	KRA121S	KRA122S
MARK	P2	P4	P5	P6	P7	P8	P9

### Marking



# KRA116S ~ KRA122S

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRA116S ~ 122S	$I_{O(OFF)}$	$V_O = -50V, V_I = 0$	-	-	-500	nA
DC Current Gain	KRA116S	$G_I$	$V_O = -5V, I_O = -5mA$	33	-	-	
	KRA117S		$V_O = -5V, I_O = -20mA$	20	-	-	
	KRA118S		$V_O = -5V, I_O = -10mA$	33	-	-	
	KRA119S		$V_O = -5V, I_O = -10mA$	30	-	-	
	KRA120S		$V_O = -5V, I_O = -10mA$	24	-	-	
	KRA121S		$V_O = -5V, I_O = -5mA$	33	-	-	
	KRA122S		$V_O = -5V, I_O = -5mA$	62	-	-	
Output Voltage	KRA116S	$V_{O(ON)}$	$I_O = -10mA, I_I = -0.5mA$	-	-	-0.3	V
	KRA117S		$I_O = -10mA, I_I = -0.5mA$	-	-0.1	-0.3	
	KRA118S		$I_O = -10mA, I_I = -0.5mA$	-	-	-0.3	
	KRA119S		$I_O = -10mA, I_I = -0.5mA$	-	-0.1	-0.3	
	KRA120S		$I_O = -10mA, I_I = -0.5mA$	-	-0.1	-0.3	
	KRA121S		$I_O = -10mA, I_I = -0.5mA$	-	-0.1	-0.3	
	KRA122S		$I_O = -5mA, I_I = -0.25mA$	-	-0.1	-0.3	
Input Voltage (ON)	KRA116S	$V_{I(ON)}$	$V_O = -0.3V, I_O = -20mA$	-	-0.98	-3	V
	KRA117S		$V_O = -0.3V, I_O = -20mA$	-	-1.83	-3	
	KRA118S		$V_O = -0.3V, I_O = -20mA$	-	-1.22	-3	
	KRA119S		$V_O = -0.3V, I_O = -20mA$	-	-1.76	-2.5	
	KRA120S		$V_O = -0.3V, I_O = -2mA$	-	-2	-3	
	KRA121S		$V_O = -0.3V, I_O = -2mA$	-	-3.9	-5	
	KRA122S		$V_O = -0.3V, I_O = -1mA$	-	-1.64	-3	
Input Voltage (OFF)	KRA116S	$V_{I(OFF)}$	$V_{CC} = -5V, I_O = -100\mu A$	-0.3	-0.63	-	V
	KRA117S			-0.5	-1.15	-	
	KRA118S			-0.3	-0.67	-	
	KRA119S			-0.3	-0.82	-	
	KRA120S			-0.8	-1.68	-	
	KRA121S			-1	-3.09	-	
	KRA122S			-0.5	-1.17	-	
Transition Frequency	KRA116S ~ 122S	$f_T^*$	$V_O = -10V, I_O = -5mA$	-	250	-	MHz
Input Current	KRA116S	$I_I$	$V_I = -5V$	-	-	-7.2	mA
	KRA117S			-	-	-3.8	
	KRA118S			-	-	-3.8	
	KRA119S			-	-	-1.8	
	KRA120S			-	-	-0.88	
	KRA121S			-	-	-0.16	
	KRA122S			-	-	-0.15	

Note : \*Characteristic of Transistor Only