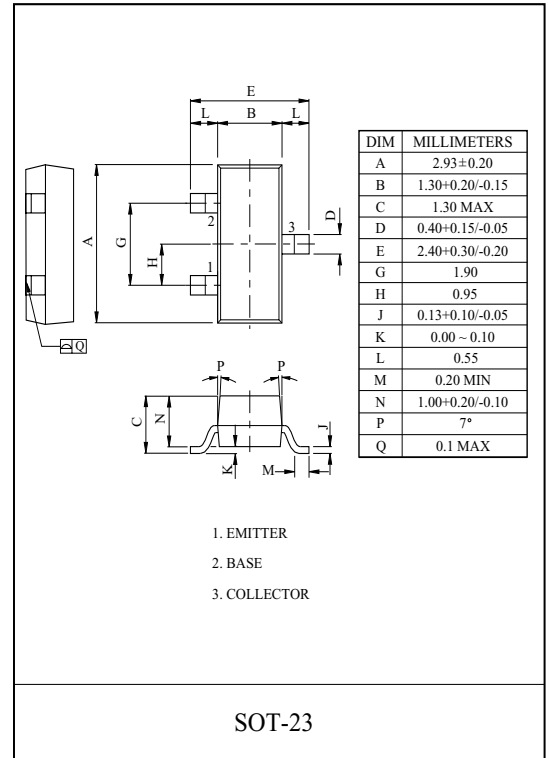
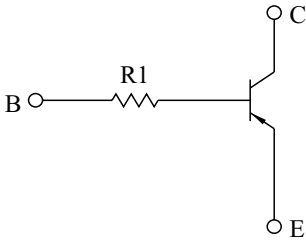


SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES

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

EQUIVALENT CIRCUIT



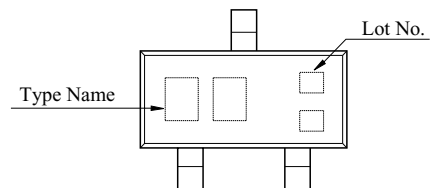
MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

MARK SPEC

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

Marking



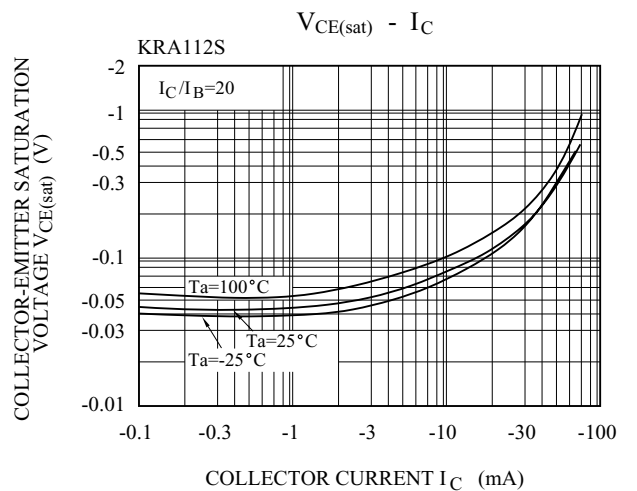
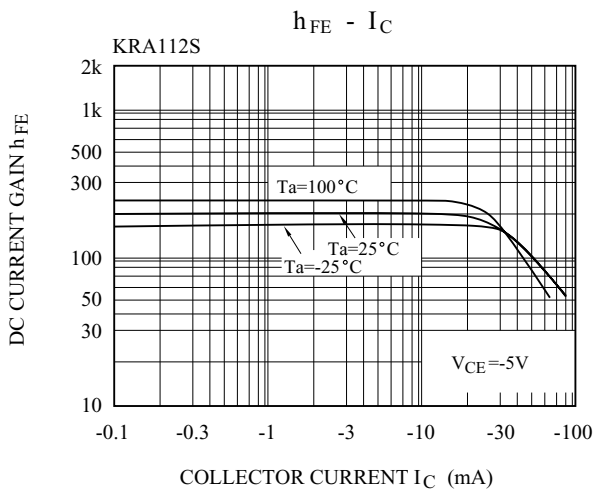
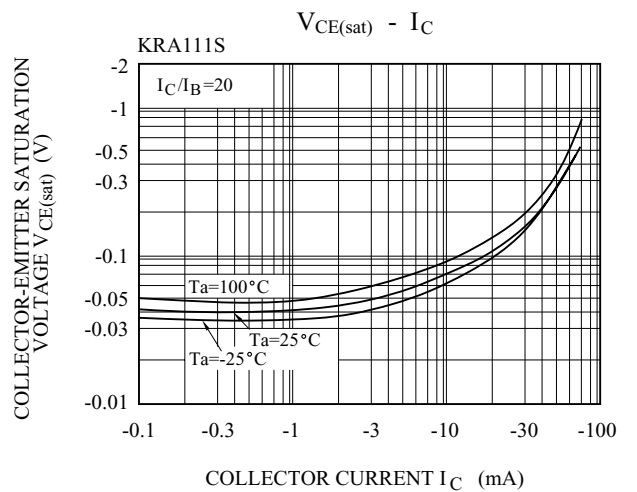
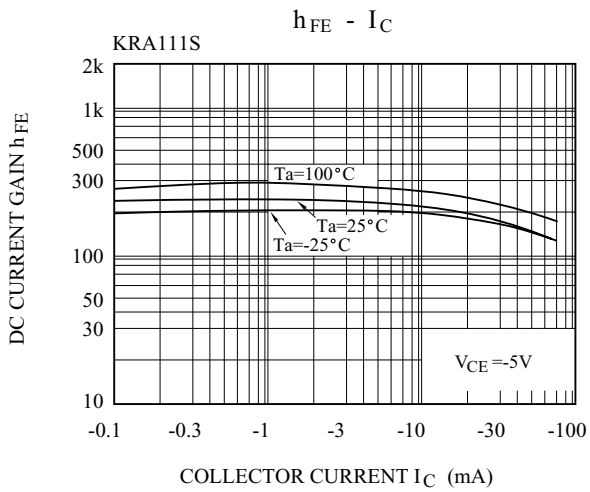
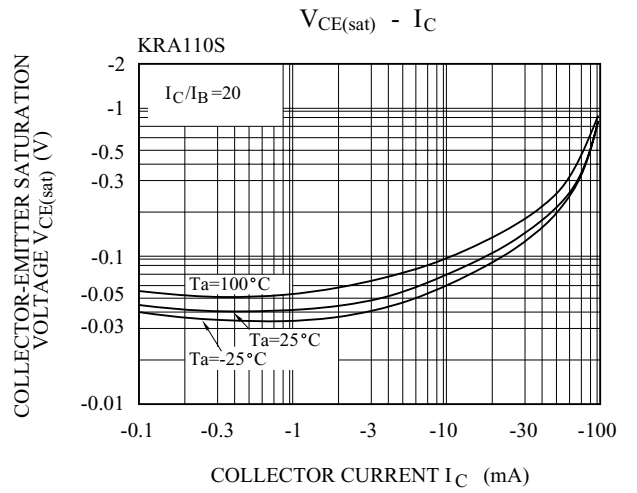
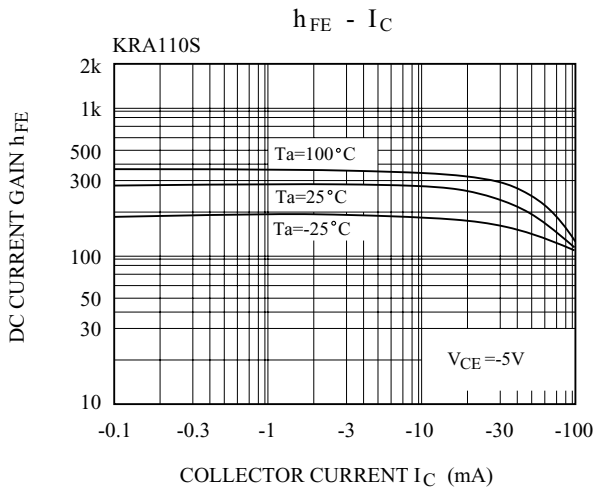
KRA110S~KRA114S

ELECTRICAL CHARACTERISTICS (Ta=25)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current		I_{CBO}	$V_{CB}=-50V, I_E=0$	-	-	-100	nA	
Emitter Cut-off Current		I_{EBO}	$V_{EB}=-5V, I_C=0$	-	-	-100	nA	
DC Current Gain		h_{FE}	$V_{CE}=-5V, I_C=-1mA$	120	-	-		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=-10mA, I_B=-0.5mA$	-	-0.1	-0.3	V	
Transition Frequency		f_T^*	$V_{CE}=-10V, I_C=-5mA$	-	250	-	MHz	
Input Resistor	KRA110S	R_1		3.29	4.7	6.11	k	
	KRA111S			7	10	13		
	KRA112S			70	100	130		
	KRA113S			15.4	22	28.6		
	KRA114S			32.9	47	61.1		
Switching Time	Rise Time	t_r	$V_O=-5V$ $V_{IN}=-5V$ $R_L=1k$	-	0.2	-	μs	
				KRA111S	-	0.065		-
				KRA112S	-	0.4		-
				KRA113S	-	0.1		-
				KRA114S	-	0.15		-
	Storage Time	t_{stg}		KRA110S	-	2.0		-
				KRA111S	-	1.7		-
				KRA112S	-	3.0		-
				KRA113S	-	2.0		-
				KRA114S	-	1.5		-
	Fall Time	t_f		KRA110S	-	0.3		-
				KRA111S	-	0.3		-
				KRA112S	-	1.7		-
				KRA113S	-	0.8		-
				KRA114S	-	1.5		-

Note : * Characteristic of Transistor Only.

KRA110S~KRA114S



KRA110S~KRA114S

