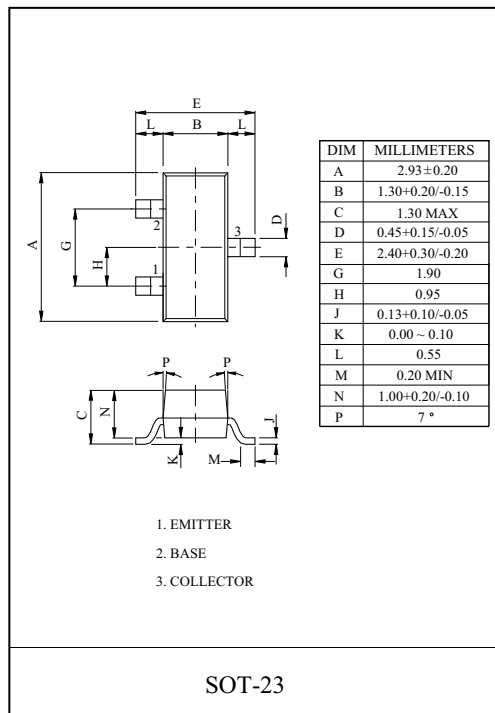
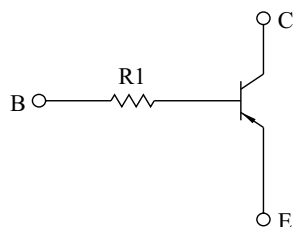


SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES

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

EQUIVALENT CIRCUIT



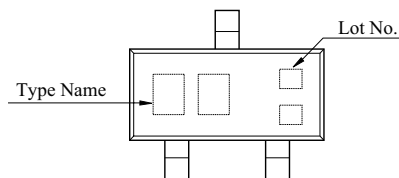
MAXIMUM RATING (Ta=25 °C)

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	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

MARK SPEC

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

Marking



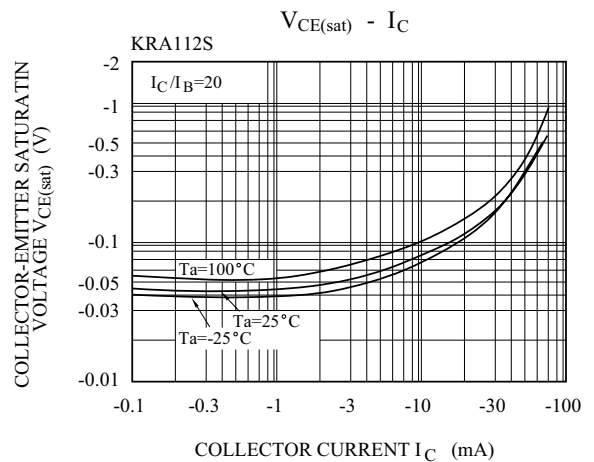
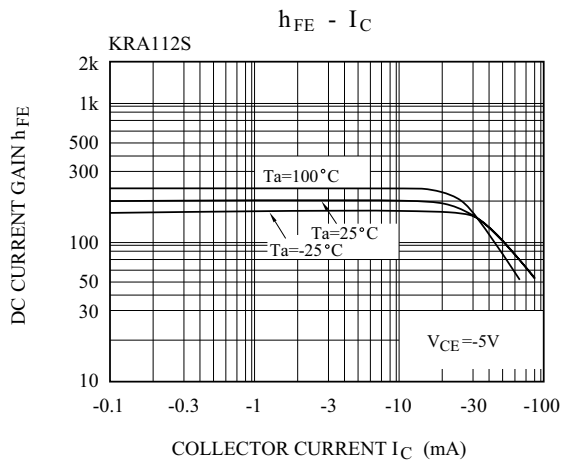
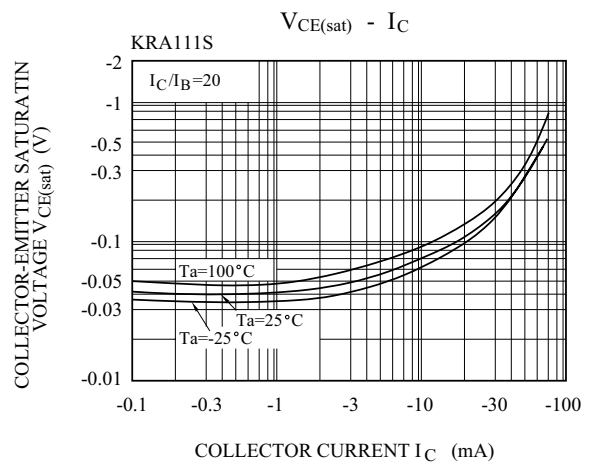
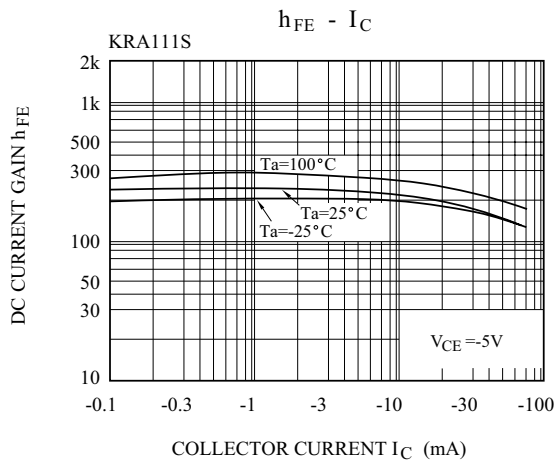
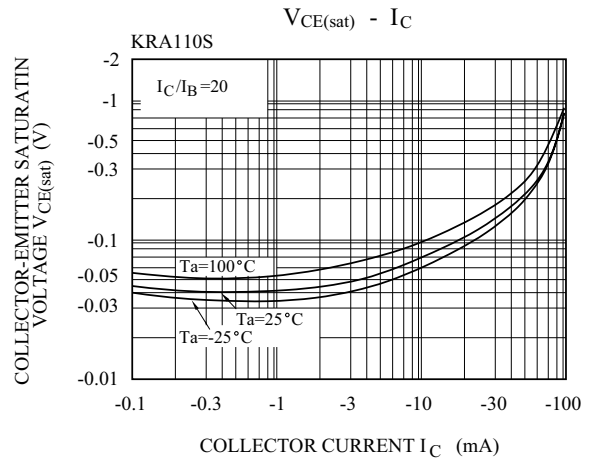
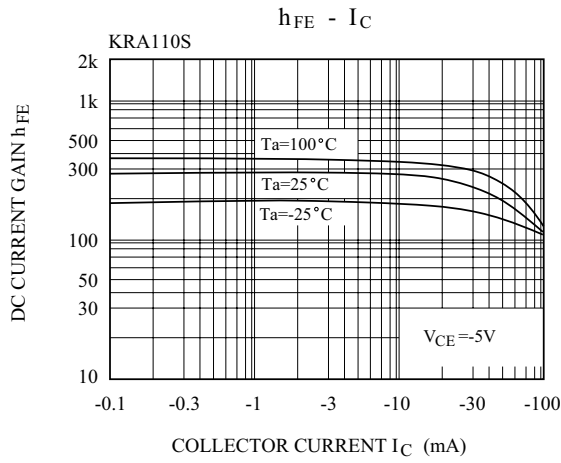
KRA110S~KRA114S

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT		
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_I	-	4.7	-	k Ω		
		KRA111S		-	10	-			
		KRA112S		-	100	-			
		KRA113S		-	22	-			
		KRA114S		-	47	-			
Switching Time	Rise Time	KRA110S	t_r	-	0.2	-	μs		
		KRA111S		-	0.065	-			
		KRA112S		-	0.4	-			
		KRA113S		-	0.1	-			
		KRA114S		-	0.15	-			
	Storage Time	KRA110S		t_{stg}	$V_O=-5V$ $V_{IN}=-5V$ $R_L=1k\Omega$	-		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	-

Note : * Characteristic of Transistor Only.

KRA110S~KRA114S



KRA110S~KRA114S

