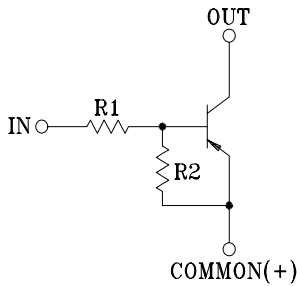


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION

**FEATURES**

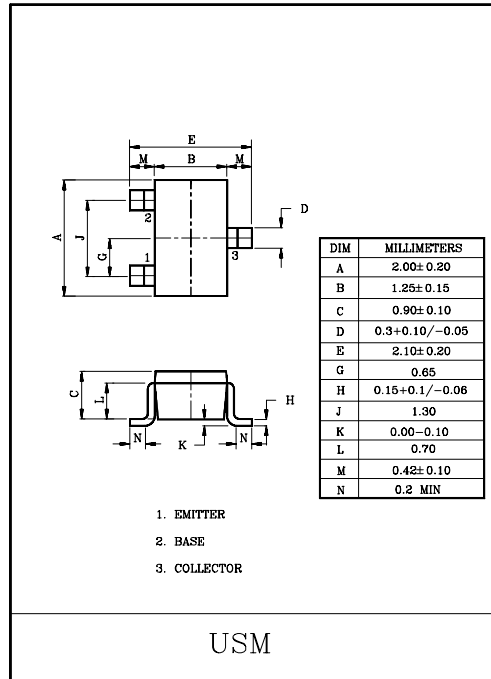
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

**EQUIVALENT CIRCUIT**



**BIAS RESISTOR VALUES**

TYPE NO.	R1(kΩ)	R2(kΩ)
KRA316	1	10
KRA317	2.2	2.2
KRA318	2.2	10
KRA319	4.7	10
KRA320	10	4.7
KRA321	47	10
KRA322	100	100

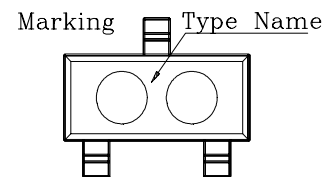


**MAXIMUM RATING (Ta=25°C)**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA316~322	$V_O$	-50	V
	KRA316		-10, 5	
	KRA317		-12, 10	
	KRA318		-12, 5	
	KRA319		-20, 7	
	KRA320		-30, 10	
	KRA321		-40, 15	
	KRA322		-40, 10	
Input Voltage	KRA322	$V_I$	-40, 10	V
Output Current	KRA316~322	$I_O$	-100	mA
Power Dissipation		$P_D$	100	mW
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	-55~150	°C

**MARK SPEC**

TYPE	KRA316	KRA317	KRA318	KRA319	KRA320	KRA321	KRA322
MARK	P2	P4	P5	P6	P7	P8	P9



# KRA316~KRA322

ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRA316~322	I <sub>O(OFF)</sub>	V <sub>O</sub> =-50V, V <sub>I</sub> =0	-	-	-500	nA
DC Current Gain	KRA316	G <sub>I</sub>	V <sub>O</sub> =-5V, I <sub>O</sub> =-5mA	33	-	-	
	KRA317		V <sub>O</sub> =-5V, I <sub>O</sub> =-20mA	20	-	-	
	KRA318		V <sub>O</sub> =-5V, I <sub>O</sub> =-10mA	33	-	-	
	KRA319		V <sub>O</sub> =-5V, I <sub>O</sub> =-10mA	30	-	-	
	KRA320		V <sub>O</sub> =-5V, I <sub>O</sub> =-10mA	24	-	-	
	KRA321		V <sub>O</sub> =-5V, I <sub>O</sub> =-5mA	33	-	-	
	KRA322		V <sub>O</sub> =-5V, I <sub>O</sub> =-5mA	62	-	-	
Output Voltage	KRA316	V <sub>O(ON)</sub>	I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-	-0.3	V
	KRA317		I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-0.1	-0.3	
	KRA318		I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-	-0.3	
	KRA319		I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-0.1	-0.3	
	KRA320		I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-0.1	-0.3	
	KRA321		I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA	-	-0.1	-0.3	
	KRA322		I <sub>O</sub> =-5mA, I <sub>I</sub> =-0.25mA	-	-0.1	-0.3	
Input Voltage (ON)	KRA316	V <sub>I(ON)</sub>	V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA	-	-0.98	-3	V
	KRA317		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA	-	-1.83	-3	
	KRA318		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA	-	-1.22	-3	
	KRA319		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA	-	-1.76	-2.5	
	KRA320		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-2mA	-	-2	-3	
	KRA321		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-2mA	-	-3.9	-5	
	KRA322		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-1mA	-	-1.64	-3	
Input Voltage (OFF)	KRA316	V <sub>I(OFF)</sub>	V <sub>CC</sub> =-5V, I <sub>O</sub> =-100μA	-0.3	-0.63	-	V
	KRA317			-0.5	-1.15	-	
	KRA318			-0.3	-0.67	-	
	KRA319			-0.3	-0.82	-	
	KRA320			-0.8	-1.68	-	
	KRA321			-1	-3.09	-	
	KRA322			-0.5	-1.17	-	
Transition Frequency	KRA316~322	f <sub>T</sub> *	V <sub>O</sub> =-10V, I <sub>O</sub> =-5mA	-	250	-	MHz
Input Current	KRA316	I <sub>I</sub>	V <sub>I</sub> =-5V	-	-	-7.2	mA
	KRA317			-	-	-3.8	
	KRA318			-	-	-3.8	
	KRA319			-	-	-1.8	
	KRA320			-	-	-0.88	
	KRA321			-	-	-0.16	
	KRA322			-	-	-0.15	

Note : \*Characteristic of Transistor Only