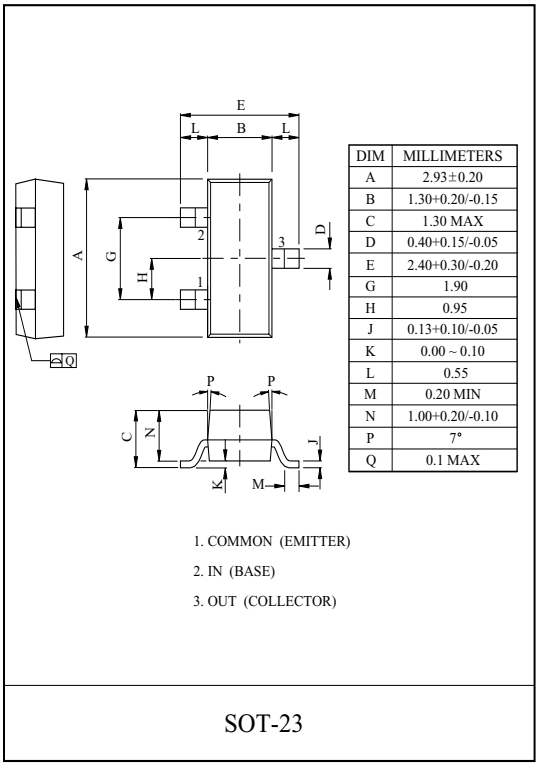
KRA101S~KRA106S

EPITAXIAL PLANAR PNP TRANSISTOR

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.

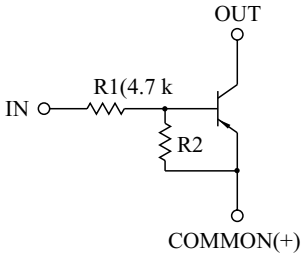


DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/-0.15
C	1.30 MAX
D	0.40+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90
H	0.95
J	0.13+0.10/-0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/-0.10
P	7°
Q	0.1 MAX

1. COMMON (EMITTER)
2. IN (BASE)
3. OUT (COLLECTOR)

SOT-23

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRA101S	4.7	4.7
KRA102S	10	10
KRA103S	22	22
KRA104S	47	47
KRA105S	2.2	47
KRA106S	4.7	47

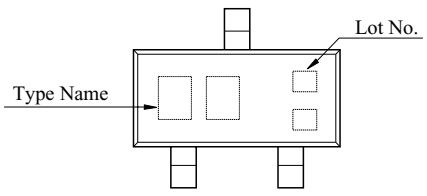
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA101S 106S	V_O	-50	V
Input Voltage	KRA101S	V_I	-20, 10	V
	KRA102S		-30, 10	
	KRA103S		-40, 10	
	KRA104S		-40, 10	
	KRA105S		-12, 5	
	KRA106S		-20, 5	
Output Current	KRA101S 106S	I_O	-100	mA
Power Dissipation		P_D	200	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 150	℃

MARK SPEC

TYPE	KRA101S	KRA102S	KRA103S	KRA104S	KRA105S	KRA106S
MARK	PA	PB	PC	PD	PE	PF

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRA101S 106S	$I_{O(OFF)}$	V_O=-50V, V_I=0	-	-	-500	nA
DC Current Gain	KRA101S	G_I	V_O=-5V, I_O=-10mA	30	55	-	
	KRA102S			50	80	-	
	KRA103S			70	120	-	
	KRA104S			80	200	-	
	KRA105S			80	200	-	
	KRA106S			80	200	-	
Output Voltage	KRA101S 106S	$V_{O(ON)}$	I_O=-10mA, I_I=-0.5mA	-	-0.1	-0.3	V
Input Voltage (ON)	KRA101S	$V_{I(ON)}$	V_O=-0.2V, I_O=-5mA	-	-1.5	-2.0	V
	KRA102S			-	-1.8	-2.4	
	KRA103S			-	-2.1	-3.0	
	KRA104S			-	-2.8	-5.0	
	KRA105S			-	-0.8	-1.1	
	KRA106S			-	-0.9	-1.3	
Input Votlage (OFF)	KRA101S 104S	$V_{I(OFF)}$	V_O=-5V, I_O=-0.1mA	-1.0	-1.2	-	V
	KRA105S 106S			-0.5	-0.65	-	
Transition Frequency	KRA101S 106S	f_T *	V_O=-10V, I_O=-5mA	-	200	-	MHz
Input Current	KRA101S	I_I	V_I=-5V	-	-	-1.8	mA
	KRA102S			-	-	-0.88	
	KRA103S			-	-	-0.36	
	KRA104S			-	-	-0.18	
	KRA105S			-	-	-3.6	
	KRA106S			-	-	-1.8	
Input Resistor	KRA101S	R1	-	3.29	4.7	6.11	kΩ
	KRA102S			7	10	13	
	KRA103S			15.4	22	28.6	
	KRA104S			32.9	47	61.1	
	KRA105S			1.54	2.2	2.86	
	KRA106S			3.29	4.7	6.11	
Resistor Ratio	KRA101S~104S	R2/R1	-	0.8	1.0	1.2	
	KRA105S			17	21	26	
	KRA106S			8	10	12	

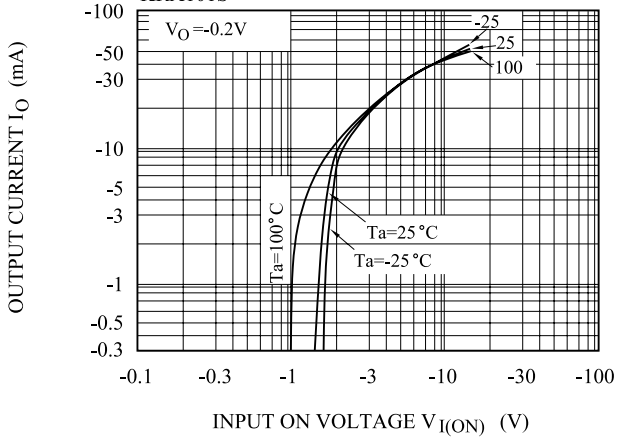
Note : *Characteristic of Transistor Only

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRA101S	t_r	V_O=-5V V_{IN}=-5V R_L=1kΩ	-	0.07	-	μs
		KRA102S			-	0.06	-	
		KRA103S			-	0.2	-	
		KRA104S			-	0.24	-	
		KRA105S			-	0.02	-	
		KRA106S			-	0.07	-	
	Storage Time	KRA101S	t_{stg}		-	1.1	-	
		KRA102S			-	1.1	-	
		KRA103S			-	1.1	-	
		KRA104S			-	1.1	-	
		KRA105S			-	1.1	-	
		KRA106S			-	1.1	-	
	Fall Time	KRA101S	t_f		-	0.15	-	
		KRA102S			-	0.24	-	
		KRA103S			-	0.38	-	
		KRA104S			-	0.63	-	
		KRA105S			-	0.1	-	
		KRA106S			-	0.2	-	

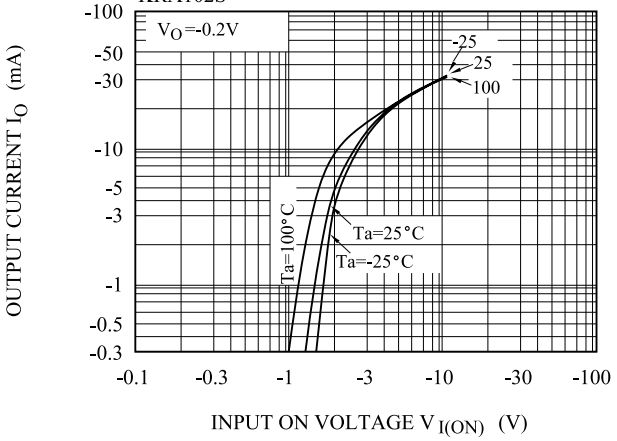
I_O - $V_{I(ON)}$

KRA101S



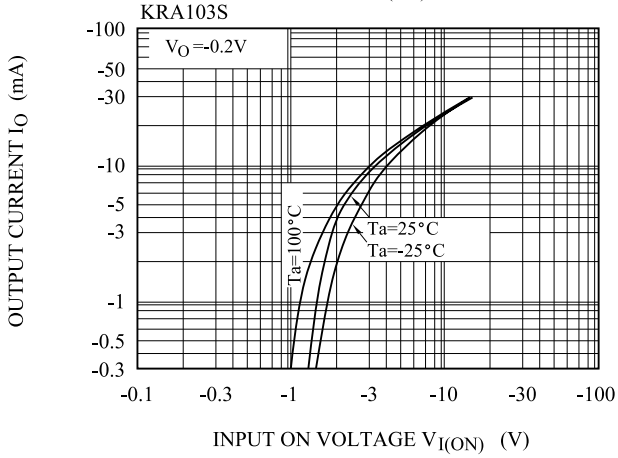
I_O - $V_{I(ON)}$

KRA102S



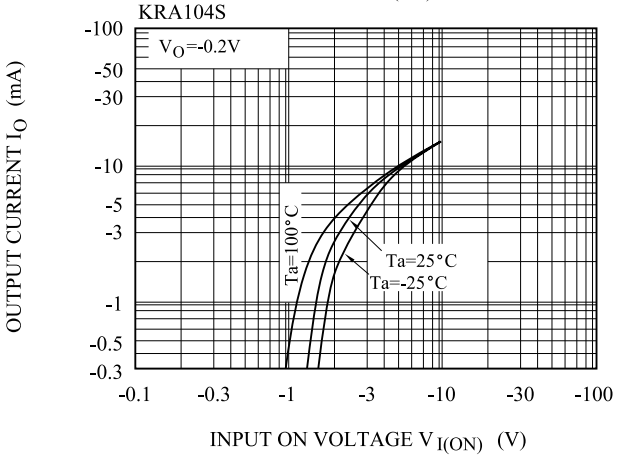
I_O - $V_{I(ON)}$

KRA103S



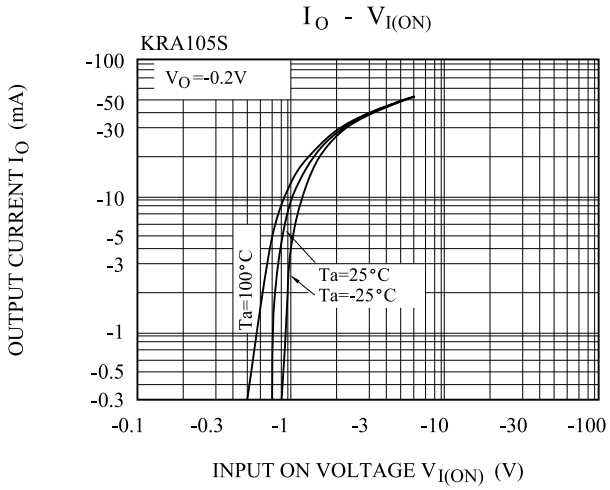
I_O - $V_{I(ON)}$

KRA104S



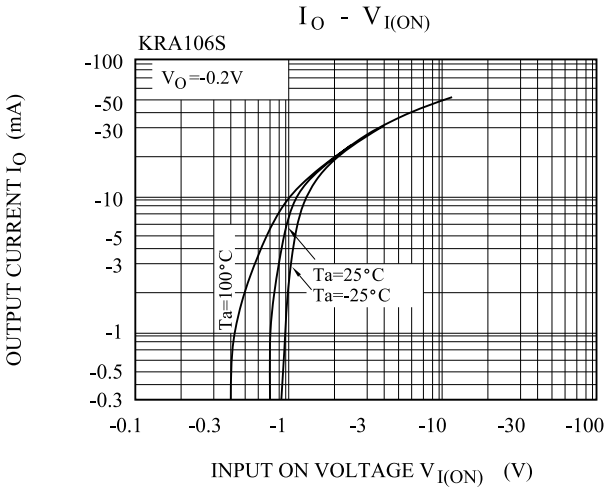
I_O - $V_{I(ON)}$

KRA105S



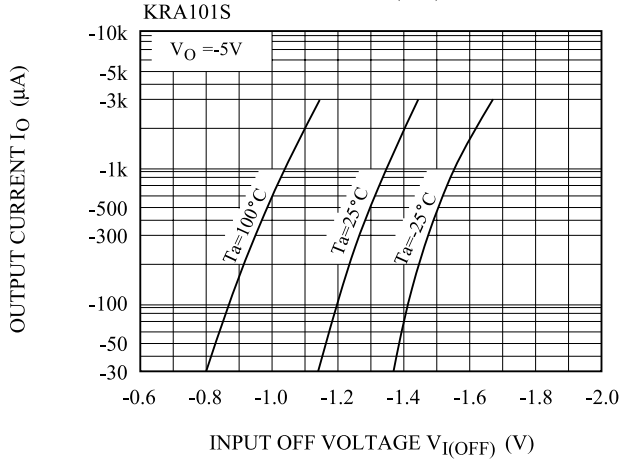
I_O - $V_{I(ON)}$

KRA106S



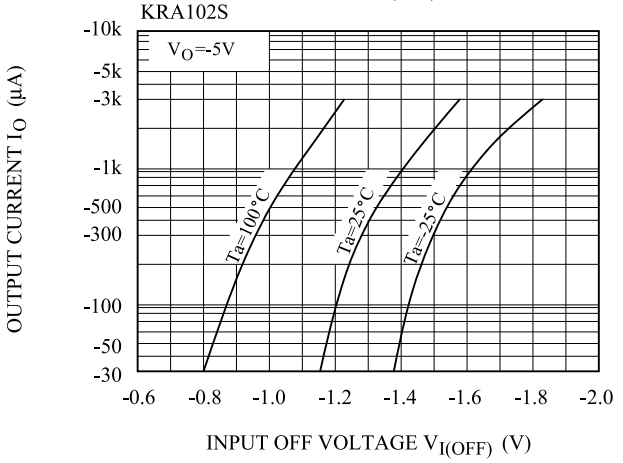
I_O - $V_{I(OFF)}$

KRA101S



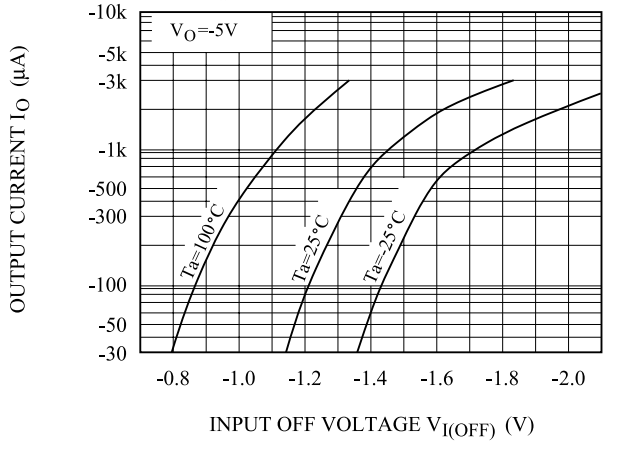
I_O - $V_{I(OFF)}$

KRA102S



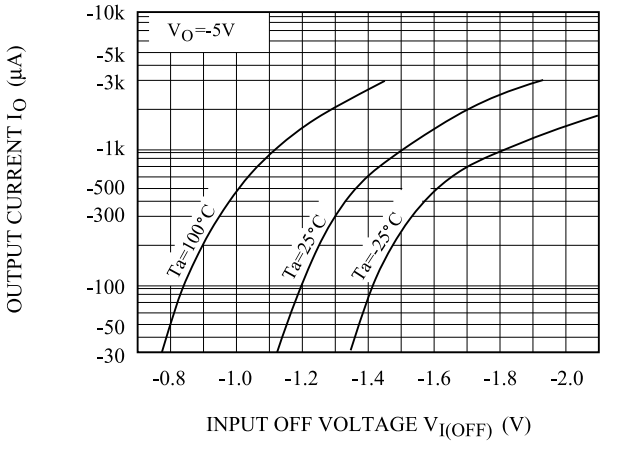
I_O - $V_{I(OFF)}$

KRA103S



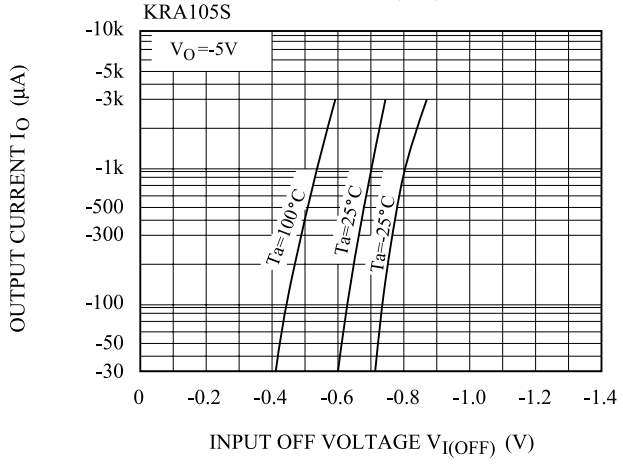
I_O - $V_{I(OFF)}$

KRA104S



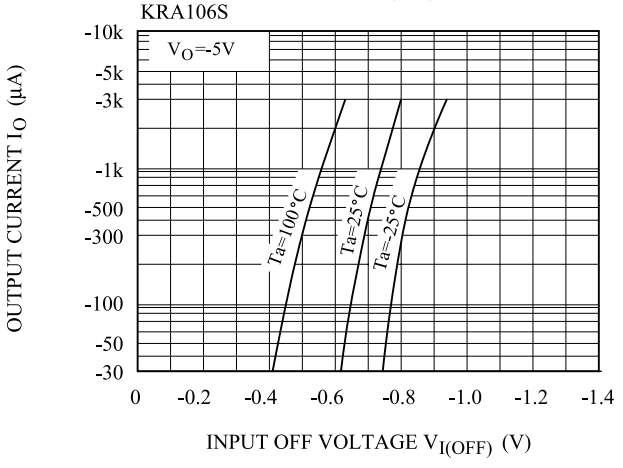
I_O - $V_{I(OFF)}$

KRA105S



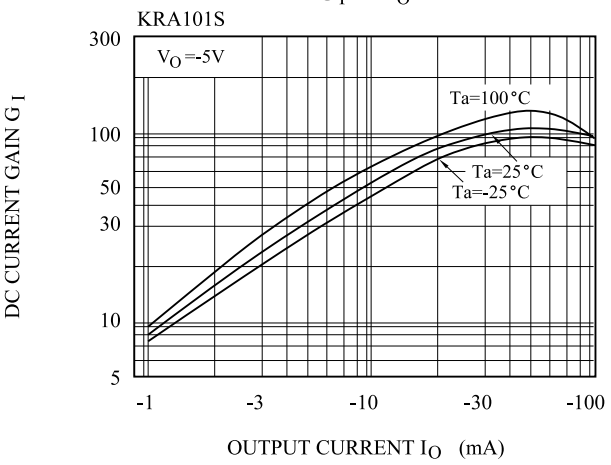
I_O - $V_{I(OFF)}$

KRA106S



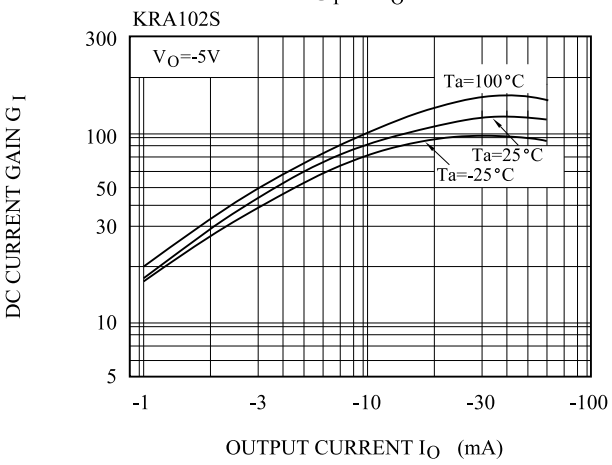
G_I - I_O

KRA101S



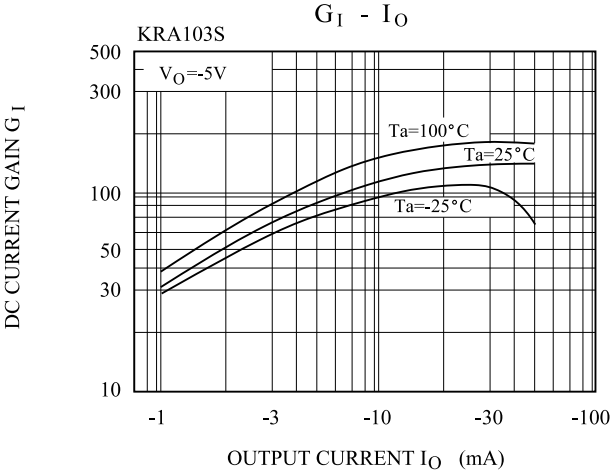
G_I - I_O

KRA102S



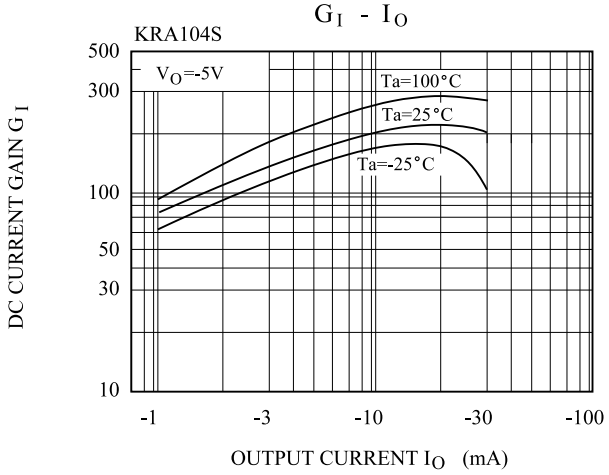
G_I - I_O

KRA103S



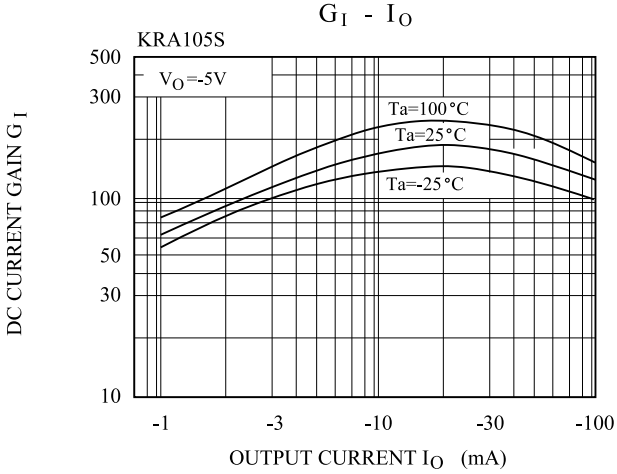
G_I - I_O

KRA104S



G_I - I_O

KRA105S



G_I - I_O

KRA106S