KRA301V~KRA306V

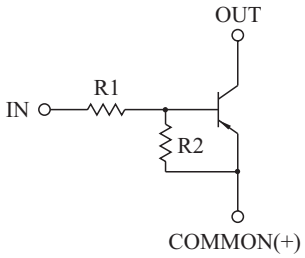
EPITAXIAL PLANAR PNP TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES

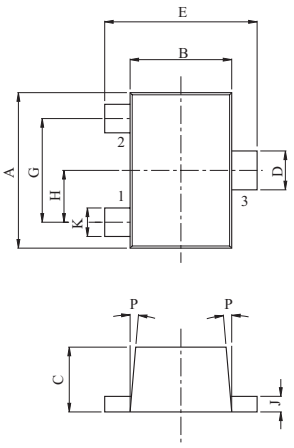
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- High Packing Density.
- Suffix U : Qualified to AEC-Q101.
  ex) KRA306V-RTK/HU

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRA301V	4.7	4.7
KRA302V	10	10
KRA303V	22	22
KRA304V	47	47
KRA305V	2.2	47
KRA306V	4.7	47



DIM	MILLIMETERS
A	1.2±0.05
B	0.8±0.05
C	0.5±0.05
D	0.3±0.05
E	1.2±0.05
G	0.8±0.05
H	0.40
J	0.12±0.05
K	0.2±0.05
P	5°

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

VSM

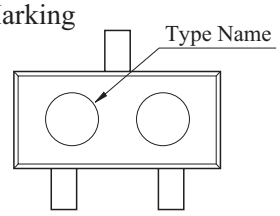
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA301V 306V	V_O	-50	V
Input Voltage	KRA301V	V_I	-20, 10	V
	KRA302V		-30, 10	
	KRA303V		-40, 10	
	KRA304V		-40, 10	
	KRA305V		-12, 5	
	KRA306V		-20, 5	
Output Current	KRA301V 306V	I_O	-100	mA
Power Dissipation		P_D	100	mW
Junction Temperature		T_j	-55~150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

MARK SPEC

TYPE	KRA301V	KRA302V	KRA303V	KRA304V	KRA305V	KRA306V
MARK	PA	PB	PC	PD	PE	PF

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRA301V 306V	$I_{O(OFF)}$	V_O=-50V, V_I=0	-	-	-500	nA
DC Current Gain	KRA301V	G_I	V_O=-5V, I_O=-10mA	30	55	-	
	KRA302V			50	80	-	
	KRA303V			70	120	-	
	KRA304V			80	200	-	
	KRA305V			80	200	-	
	KRA306V			80	200	-	
Output Voltage	KRA301V 306V	$V_{O(ON)}$	I_O=-10mA, I_I=-0.5mA	-	-0.1	-0.3	V
Input Voltage (ON)	KRA301V	$V_{I(ON)}$	V_O=-0.2V, I_O=-5mA	-	-1.5	-2.0	V
	KRA302V			-	-1.8	-2.4	
	KRA303V			-	-2.1	-3.0	
	KRA304V			-	-2.8	-5.0	
	KRA305V			-	-0.8	-1.1	
	KRA306V			-	-0.9	-1.3	
Input Voltage (OFF)	KRA301V 304V	$V_{I(OFF)}$	V_O=-5V, I_O=-0.1mA	-1.0	-1.2	-	V
	KRA305V 306V			-0.5	-0.65	-	
Transition Frequency	KRA301V 306V	f_T *	V_O=-10V, I_O=-5mA	-	200	-	MHz
Input Current	KRA301V	I_I	V_I=-5V	-	-	-1.8	mA
	KRA302V			-	-	-0.88	
	KRA303V			-	-	-0.36	
	KRA304V			-	-	-0.18	
	KRA305V			-	-	-3.6	
	KRA306V			-	-	-1.8	
Input Resistor	KRA301V	R1	-	3.29	4.7	6.11	kΩ
	KRA302V			7	10	13	
	KRA303V			15.4	22	28.6	
	KRA304V			32.9	47	61.1	
	KRA305V			1.54	2.2	2.86	
	KRA306V			3.29	4.7	6.11	
Resistor Ratio	KRA301V 304V	R2/R1	-	0.8	1.0	1.2	
	KRA305V			17	21	26	
	KRA306V			8	10	12	

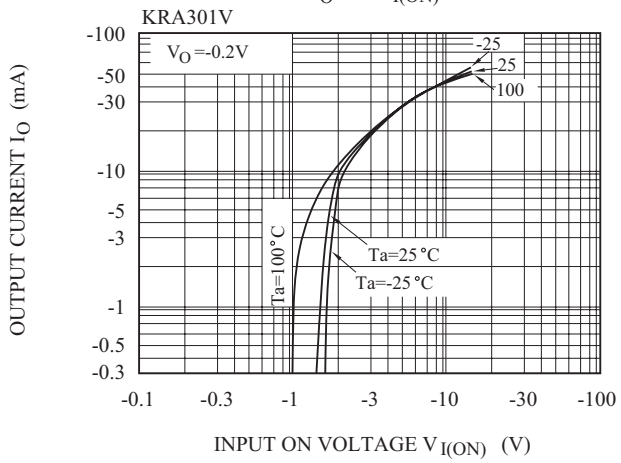
Note : * Characteristic of Transistor Only.

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRA301V	t_r	V_O=-5V V_{IN}=-5V R_L=1kΩ	-	0.07	-	μS
		KRA302V			-	0.06	-	
		KRA303V			-	0.2	-	
		KRA304V			-	0.24	-	
		KRA305V			-	0.02	-	
		KRA306V			-	0.07	-	
	Storage Time	KRA301V	t_{stg}		-	1.1	-	
		KRA302V			-	1.1	-	
		KRA303V			-	1.1	-	
		KRA304V			-	1.1	-	
		KRA305V			-	1.1	-	
		KRA306V			-	1.1	-	
	Fall Time	KRA301V	t_f		-	0.15	-	
		KRA302V			-	0.24	-	
		KRA303V			-	0.38	-	
		KRA304V			-	0.63	-	
		KRA305V			-	0.1	-	
		KRA306V			-	0.2	-	

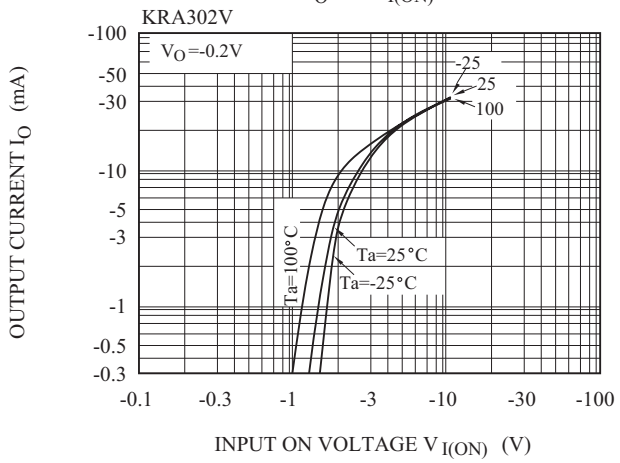
I_O - $V_{I(ON)}$

KRA301V



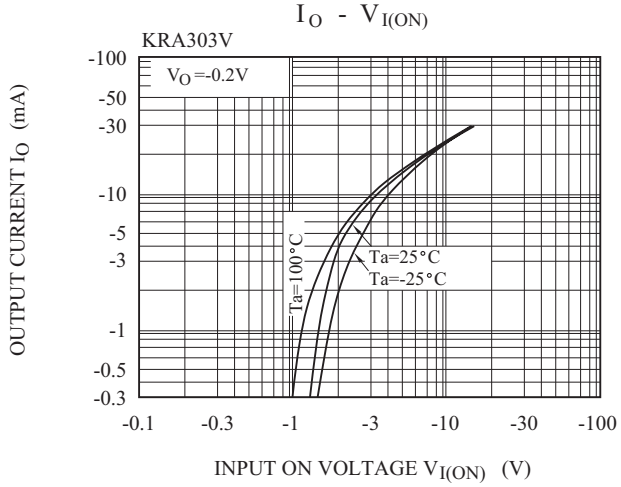
I_O - $V_{I(ON)}$

KRA302V



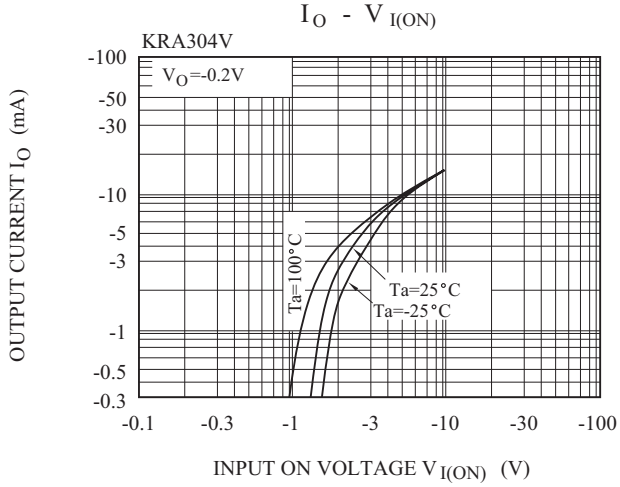
I_O - $V_{I(ON)}$

KRA303V



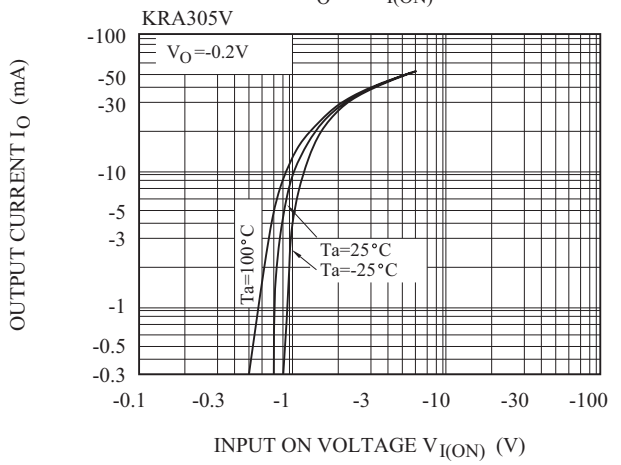
I_O - $V_{I(ON)}$

KRA304V



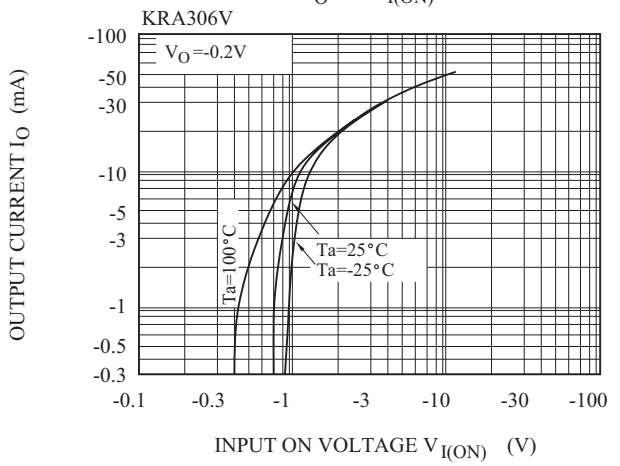
I_O - $V_{I(ON)}$

KRA305V



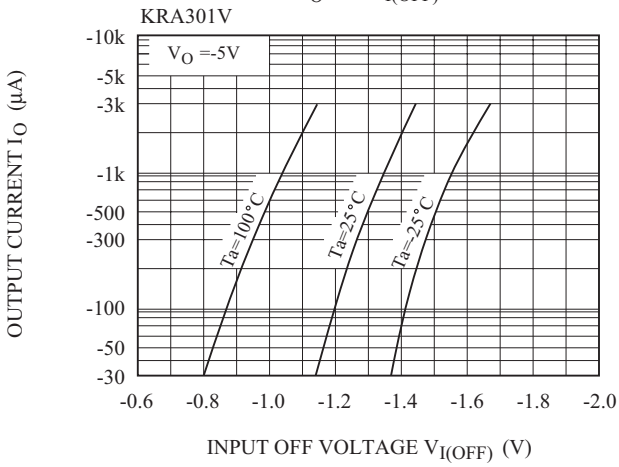
I_O - $V_{I(ON)}$

KRA306V



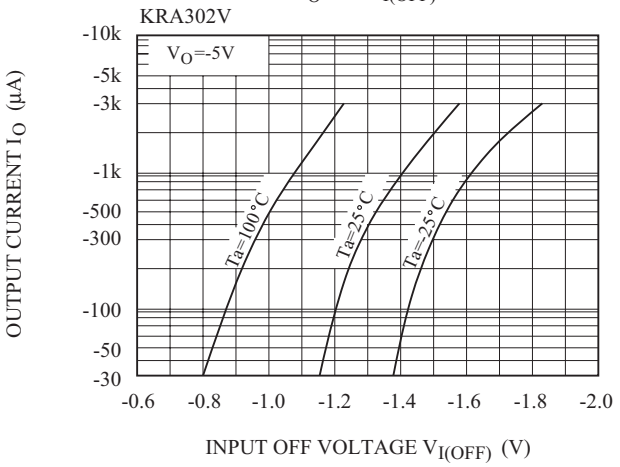
I_O - $V_{I(OFF)}$

KRA301V



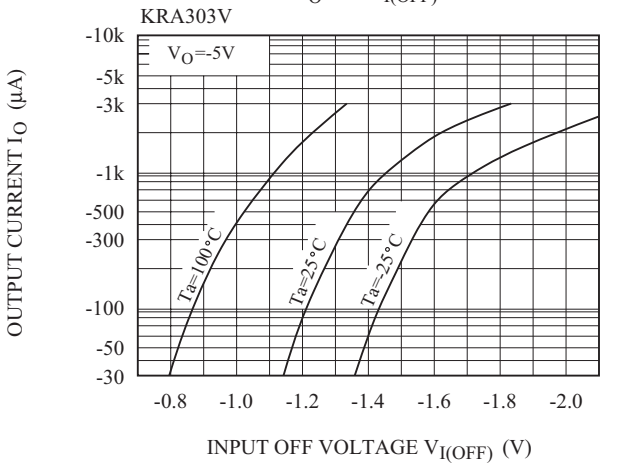
I_O - $V_{I(OFF)}$

KRA302V



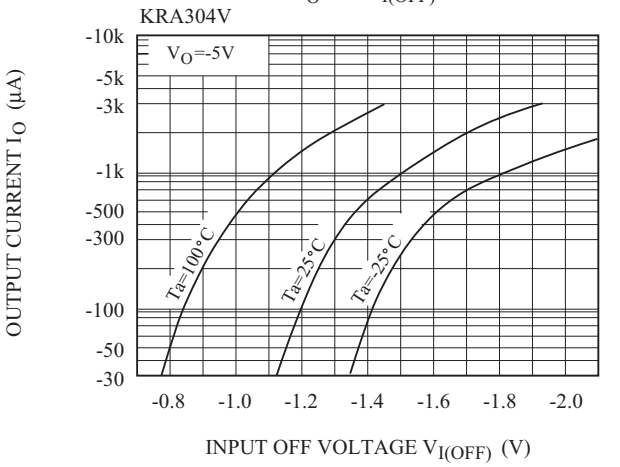
I_O - $V_{I(OFF)}$

KRA303V



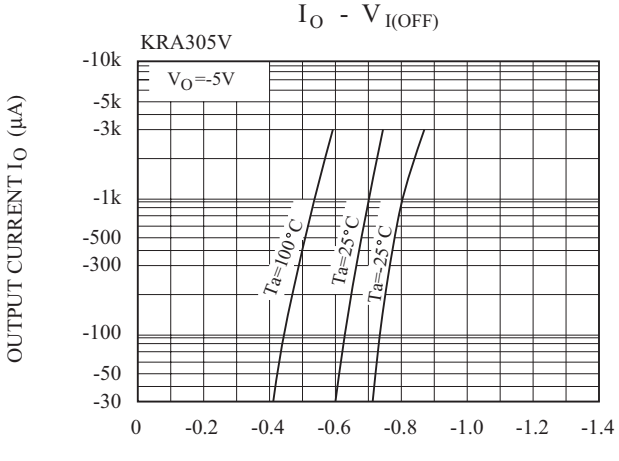
I_O - $V_{I(OFF)}$

KRA304V



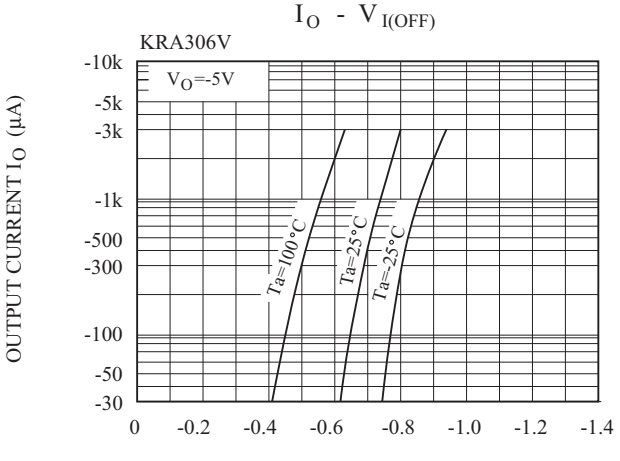
I_O - $V_{I(OFF)}$

KRA305V



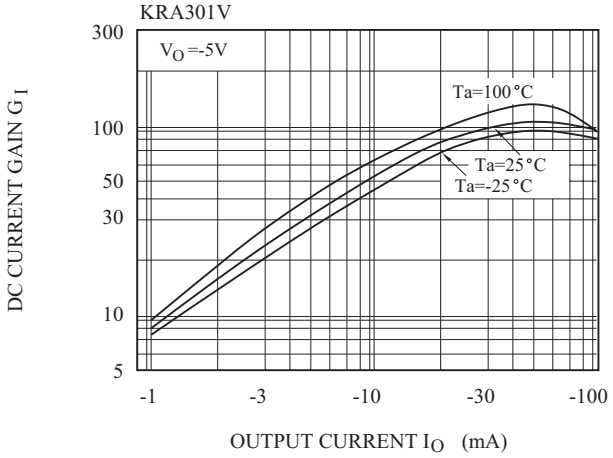
I_O - $V_{I(OFF)}$

KRA306V



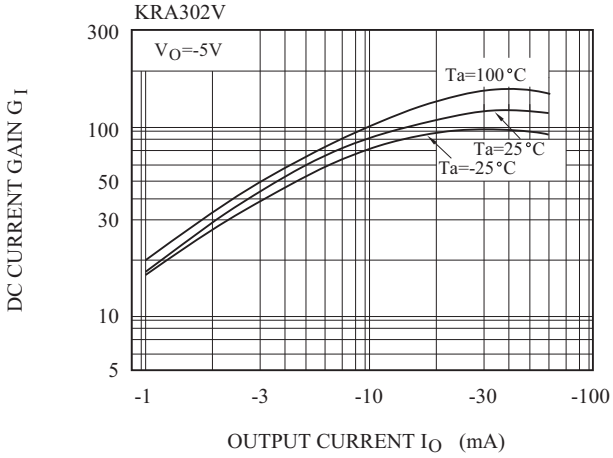
G_I - I_O

KRA301V



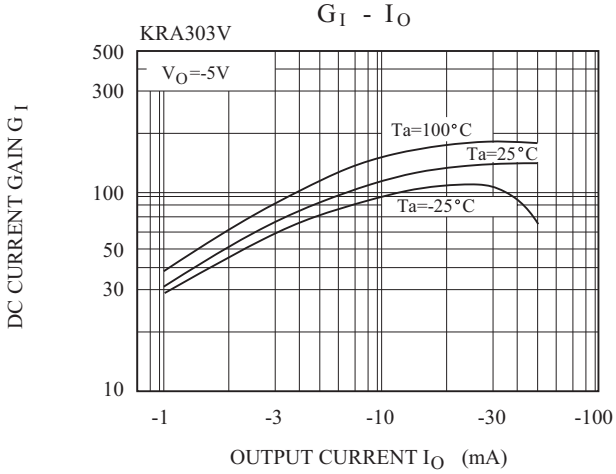
G_I - I_O

KRA302V



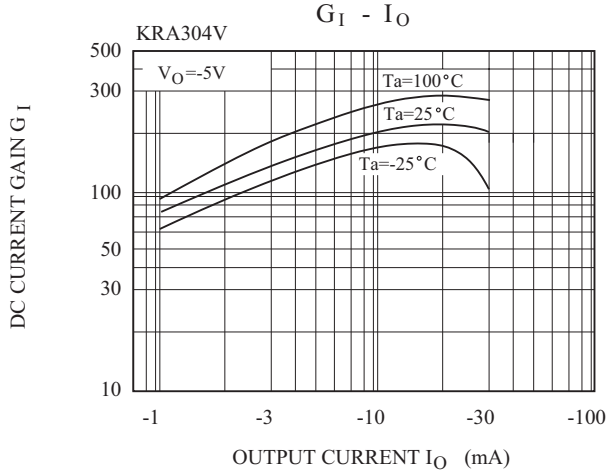
G_I - I_O

KRA303V



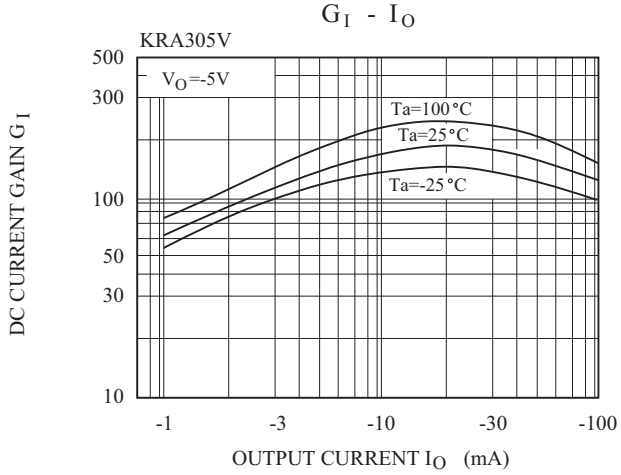
G_I - I_O

KRA304V



G_I - I_O

KRA305V



G_I - I_O

KRA306V