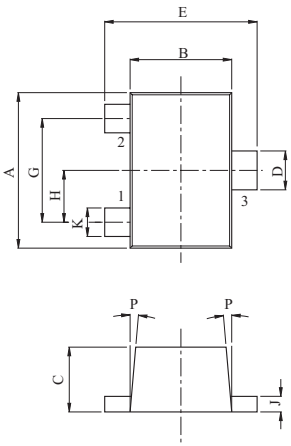
KRC401V~KRC406V

EPITAXIAL PLANAR NPN 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) KRC406V-RTK/HU

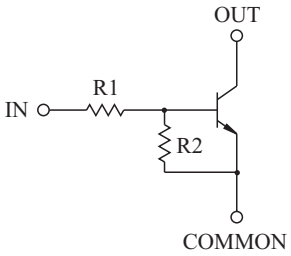


DIM	MILLIMETERS
A	1.2 ±0.05
B	0.8 ±0.05
C	0.5±0.05
D	0.3±0.05
E	1.2±0.05
G	0.8±0.05
H	0.40
J	0.12± 0.05
K	0.2±0.05
P	5°

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

VSM

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC401V	4.7	4.7
KRC402V	10	10
KRC403V	22	22
KRC404V	47	47
KRC405V	2.2	47
KRC406V	4.7	47

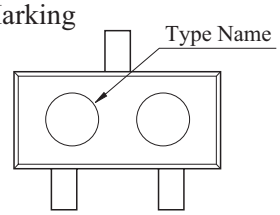
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC401V 406V	V_O	50	V
Input Voltage	KRC401V	V_I	20, -10	V
	KRC402V		30, -10	
	KRC403V		40, -10	
	KRC404V		40, -10	
	KRC405V		12, -5	
	KRC406V		20, -5	
Output Current	KRC401V 406V	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	KRC401V	KRC402V	KRC403V	KRC404V	KRC405V	KRC406V
MARK	NA	NB	NC	ND	NE	NF

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRC401V 406V	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain	KRC401V	G_I	V_O=5V, I_O=10mA	30	55	-	
	KRC402V			50	80	-	
	KRC403V			70	120	-	
	KRC404V			80	200	-	
	KRC405V			80	200	-	
	KRC406V			80	200	-	
Output Voltage	KRC401V 406V	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	0.1	0.3	V
Input Voltage (ON)	KRC401V	$V_{I(ON)}$	V_O=0.2V, I_O=5mA	-	1.5	2.0	V
	KRC402V			-	1.8	2.4	
	KRC403V			-	2.1	3.0	
	KRC404V			-	2.8	5.0	
	KRC405V			-	0.8	1.1	
	KRC406V			-	0.9	1.3	
Input Votlage (OFF)	KRC401V 404V	$V_{I(OFF)}$	V_O=5V, I_O=0.1mA	1.0	1.2	-	V
	KRC405V 406V			0.5	0.65	-	
Transition Frequency	KRC401V 406V	f_T *	V_O=10V, I_O=5mA	-	200	-	MHz
Input Current	KRC401V	I_I	V_I=5V	-	-	1.8	mA
	KRC402V			-	-	0.88	
	KRC403V			-	-	0.36	
	KRC404V			-	-	0.18	
	KRC405V			-	-	3.6	
	KRC406V			-	-	1.8	
Input Resistor	KRC401V	R1	-	3.29	4.7	6.11	kΩ
	KRC402V			7	10	13	
	KRC403V			15.4	22	28.6	
	KRC404V			32.9	47	61.1	
	KRC405V			1.54	2.2	2.86	
	KRC406V			3.29	4.7	6.11	
Resistor Ratio	KRC401V 404V	R2/R1	-	0.8	1.0	1.2	
	KRC405V			17	21	26	
	KRC406V			8	10	12	

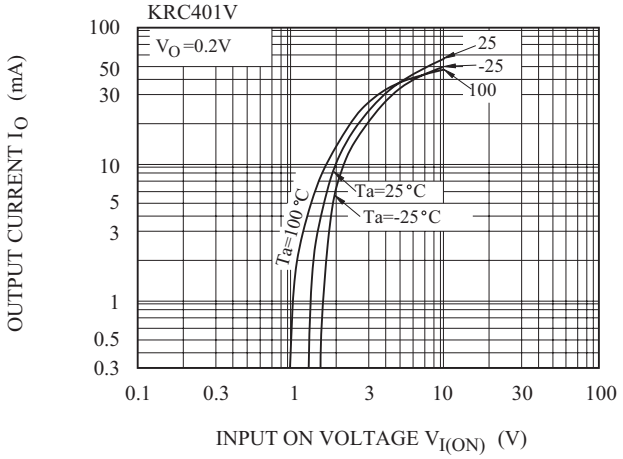
Note : * Characteristic of Transistor Only.

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRC401V	t_r	V_O=5V V_{IN}=5V R_L=1kΩ	-	0.03	-	μS
		KRC402V			-	0.05	-	
		KRC403V			-	0.12	-	
		KRC404V			-	0.22	-	
		KRC405V			-	0.01	-	
		KRC406V			-	0.03	-	
	Storage Time	KRC401V	t_{stg}		-	2.0	-	
		KRC402V			-	2.0	-	
		KRC403V			-	2.0	-	
		KRC404V			-	2.0	-	
		KRC405V			-	2.0	-	
		KRC406V			-	2.0	-	
	Fall Time	KRC401V	t_f		-	0.12	-	
		KRC402V			-	0.36	-	
		KRC403V			-	0.35	-	
		KRC404V			-	0.6	-	
		KRC405V			-	0.1	-	
		KRC406V			-	0.19	-	

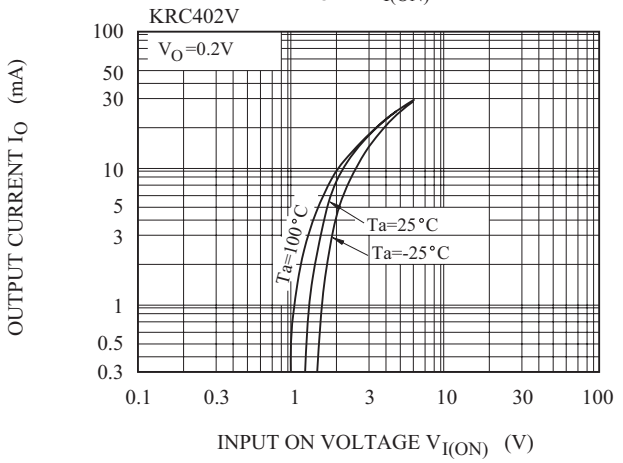
I_O - $V_{I(ON)}$

KRC401V



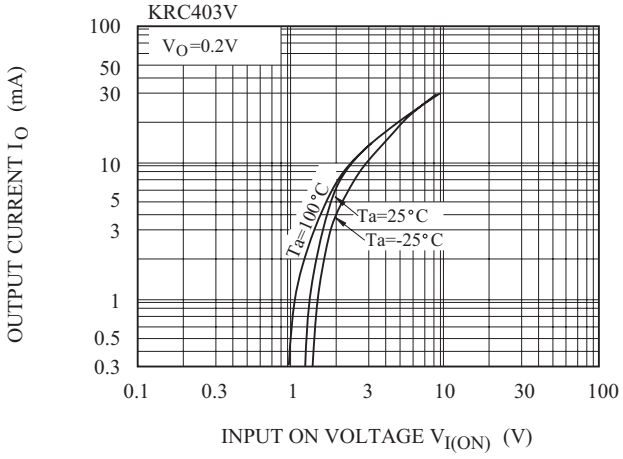
I_O - $V_{I(ON)}$

KRC402V



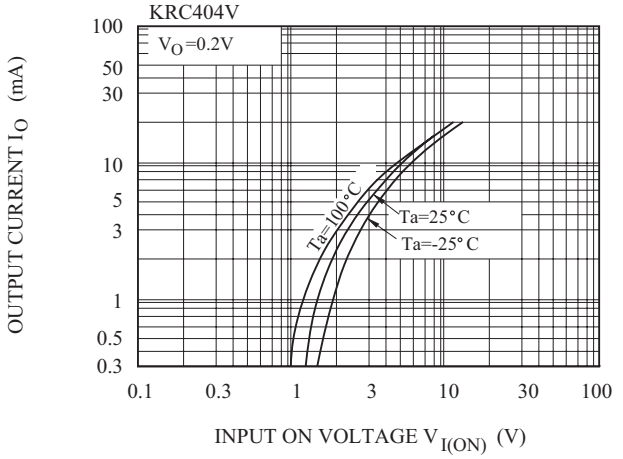
I_O - $V_{I(ON)}$

KRC403V



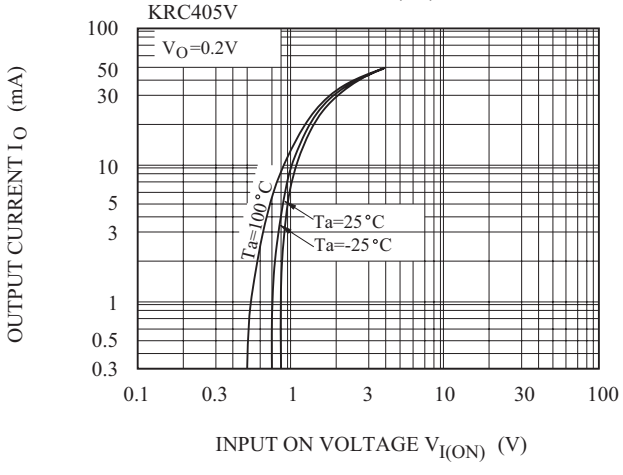
I_O - $V_{I(ON)}$

KRC404V



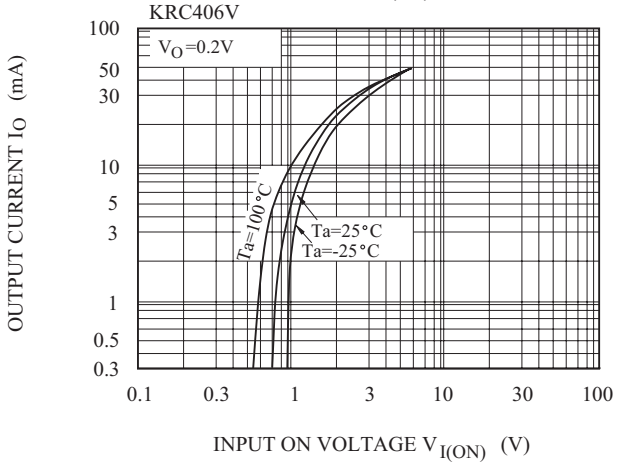
I_O - $V_{I(ON)}$

KRC405V



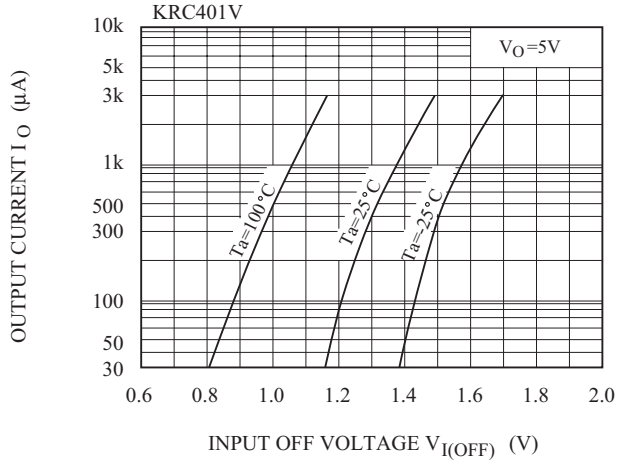
I_O - $V_{I(ON)}$

KRC406V



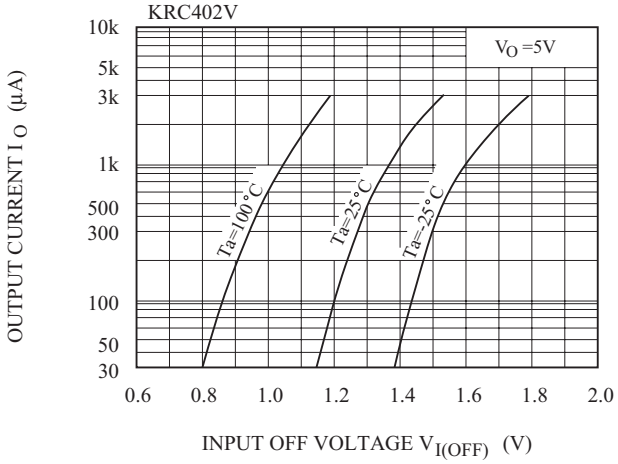
I_O - $V_{I(OFF)}$

KRC401V



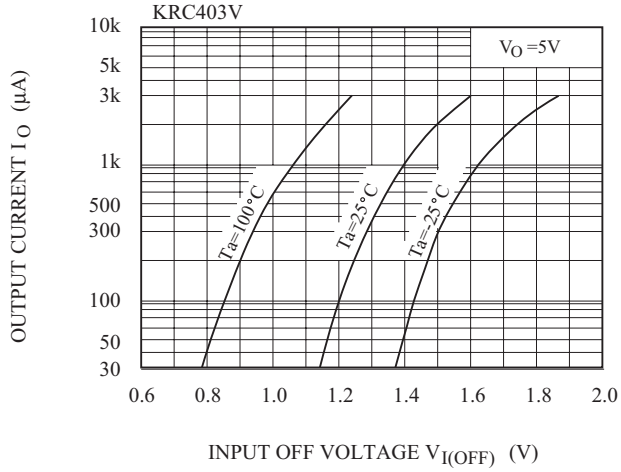
I_O - $V_{I(OFF)}$

KRC402V



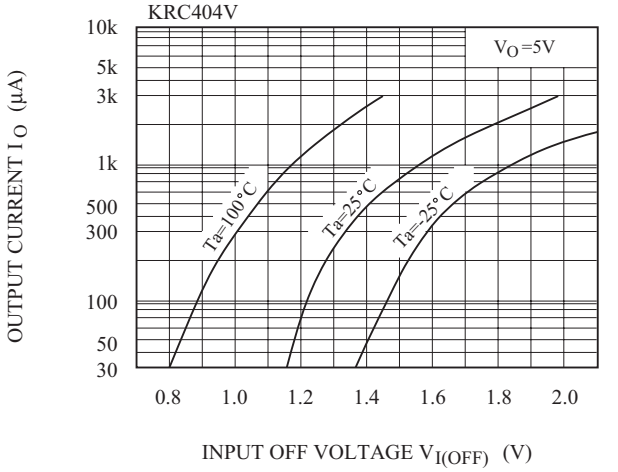
I_O - $V_{I(OFF)}$

KRC403V



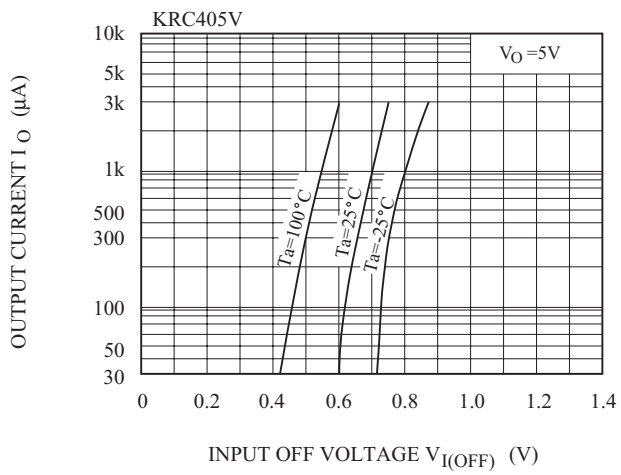
I_O - $V_{I(OFF)}$

KRC404V



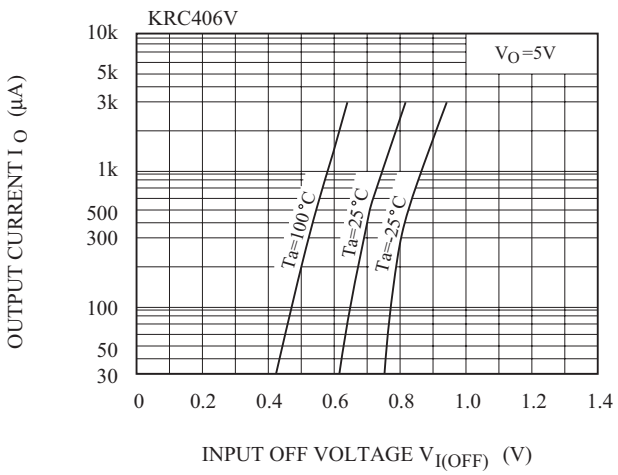
I_O - $V_{I(OFF)}$

KRC405V



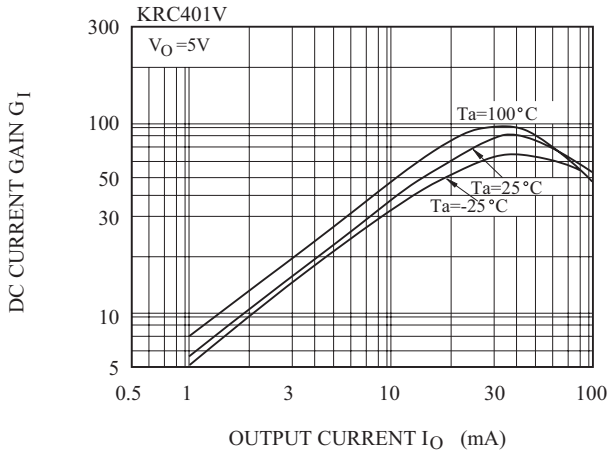
I_O - $V_{I(OFF)}$

KRC406V



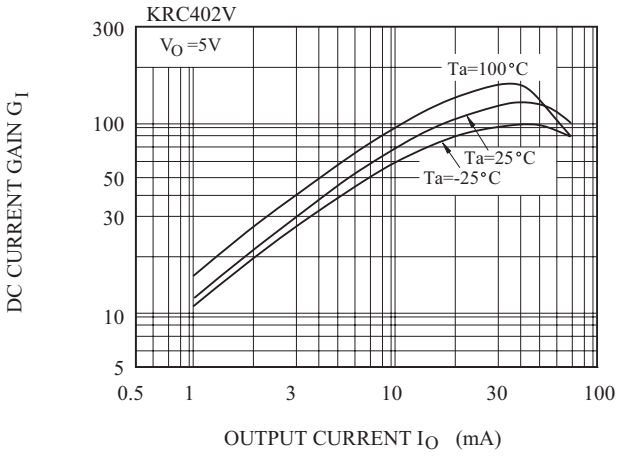
G_I - I_O

KRC401V



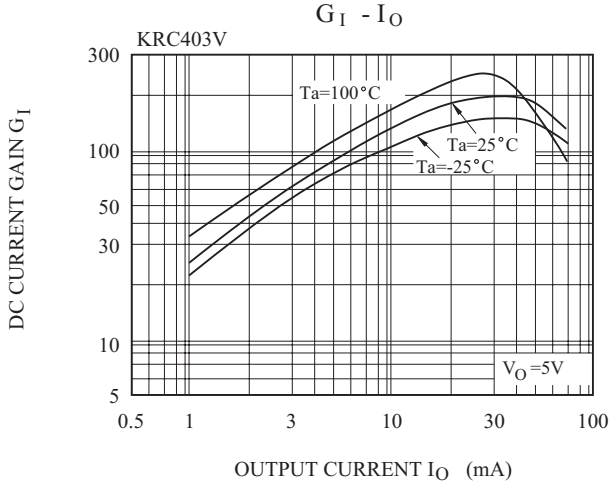
G_I - I_O

KRC402V



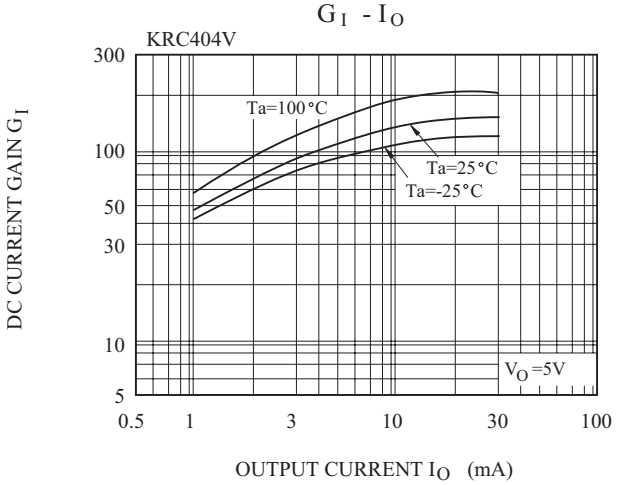
G_I - I_O

KRC403V



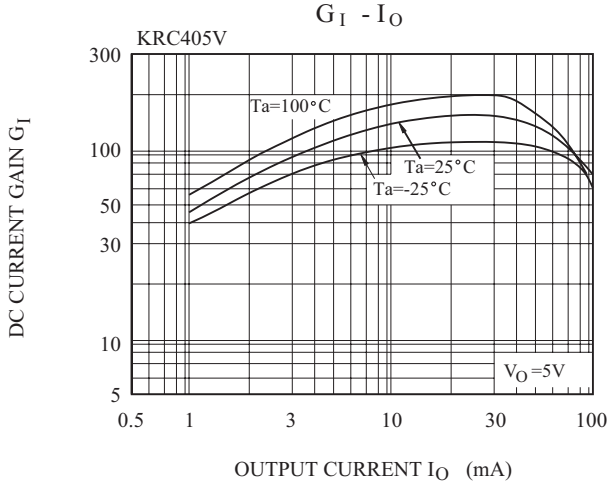
G_I - I_O

KRC404V



G_I - I_O

KRC405V



G_I - I_O

KRC406V