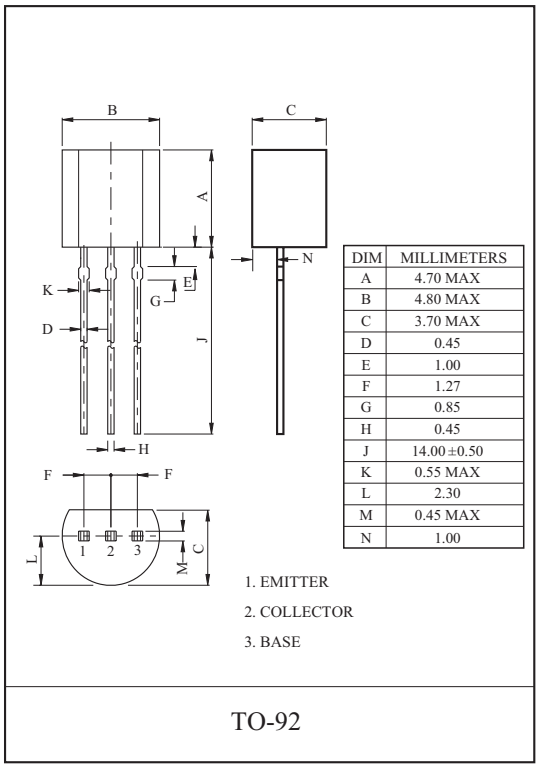
KRC101~KRC106

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.

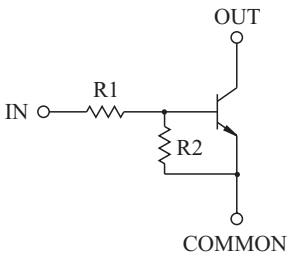


DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00 ±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

1. EMITTER
2. COLLECTOR
3. BASE

TO-92

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC101	4.7	4.7
KRC102	10	10
KRC103	22	22
KRC104	47	47
KRC105	2.2	47
KRC106	4.7	47

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC101 106	V_O	50	V
Input Voltage	KRC101	V_I	20, -10	V
	KRC102		30, -10	
	KRC103		40, -10	
	KRC104		40, -10	
	KRC105		12, -5	
	KRC106		20, -5	
Output Current	KRC101 106	I_O	100	mA
Power Dissipation		P_D	625	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRC101 106	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain	KRC101	G_I	V_O=5V, I_O=10mA	30	55	-	
	KRC102			50	80	-	
	KRC103			70	120	-	
	KRC104			80	200	-	
	KRC105			80	200	-	
	KRC106			80	200	-	
Output Voltage	KRC101 106	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	0.1	0.3	V
Input Voltage (ON)	KRC101	$V_{I(ON)}$	V_O=0.2V, I_O=5mA	-	1.5	2.0	V
	KRC102			-	1.8	2.4	
	KRC103			-	2.1	3.0	
	KRC104			-	2.8	5.0	
	KRC105			-	0.8	1.1	
	KRC106			-	0.9	1.3	
Input Votlage (OFF)	KRC101 104	$V_{I(OFF)}$	V_O=5V, I_O=0.1mA	1.0	1.2	-	V
	KRC105 106			0.5	0.65	-	
Transition Frequency	KRC101 106	f_T *	V_O=10V, I_O=5mA	-	200	-	MHz
Input Current	KRC101	I_I	V_I=5V	-	-	1.8	mA
	KRC102			-	-	0.88	
	KRC103			-	-	0.36	
	KRC104			-	-	0.18	
	KRC105			-	-	3.6	
	KRC106			-	-	1.8	
Input Resistor	KRC101	R1	-	3.29	4.7	6.11	kΩ
	KRC102			7	10	13	
	KRC103			15.4	22	28.6	
	KRC104			32.9	47	61.1	
	KRC105			1.54	2.2	2.86	
	KRC106			3.29	4.7	6.11	
Resistor Ratio	KRC101 104	R2/R1	-	0.8	1.0	1.2	
	KRC105			17	21	26	
	KRC106			8	10	12	

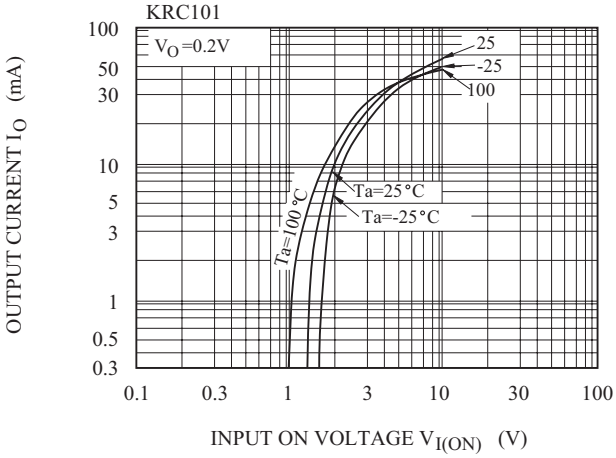
Note : * Characteristic of Transistor Only.

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRC101	t_r	V_O=5V V_{IN}=5V R_L=1kΩ	-	0.03	-	μs
		KRC102			-	0.05	-	
		KRC103			-	0.12	-	
		KRC104			-	0.22	-	
		KRC105			-	0.01	-	
		KRC106			-	0.03	-	
	Storage Time	KRC101	t_{stg}		-	2.0	-	
		KRC102			-	2.0	-	
		KRC103			-	2.0	-	
		KRC104			-	2.0	-	
		KRC105			-	2.0	-	
		KRC106			-	2.0	-	
	Fall Time	KRC101	t_f		-	0.12	-	
		KRC102			-	0.36	-	
		KRC103			-	0.35	-	
		KRC104			-	0.6	-	
		KRC105			-	0.1	-	
		KRC106			-	0.19	-	

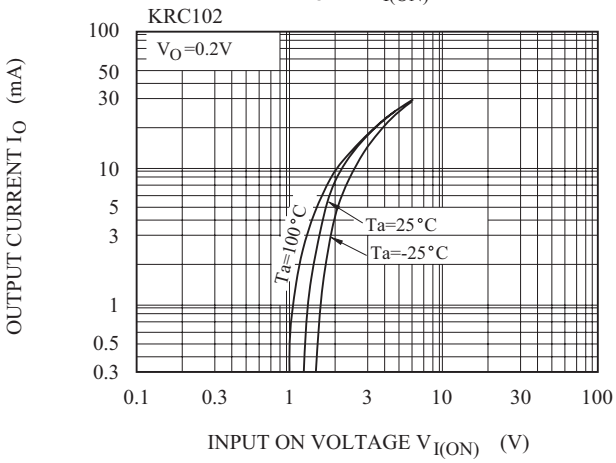
I_O - $V_{I(ON)}$

KRC101



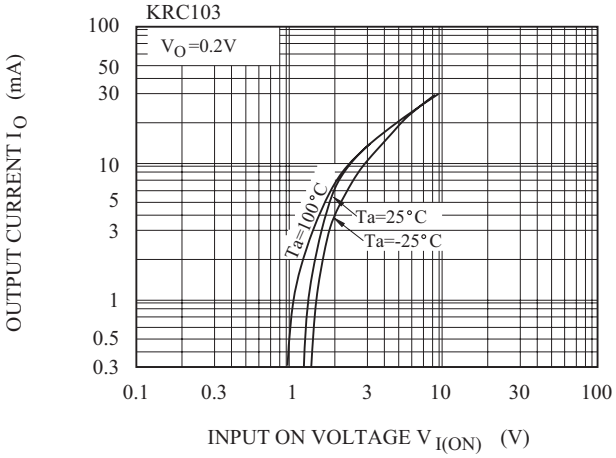
I_O - $V_{I(ON)}$

KRC102



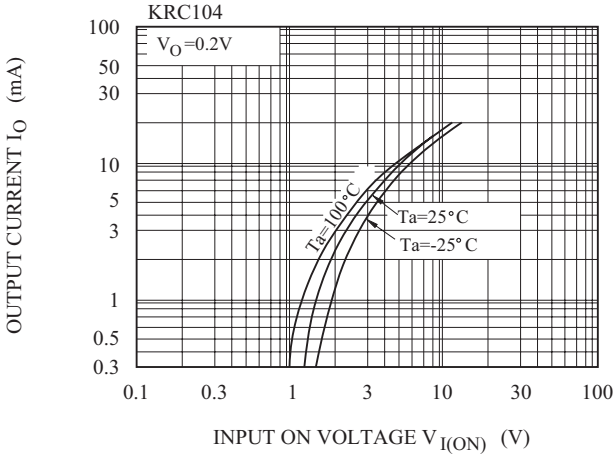
I_O - $V_{I(ON)}$

KRC103



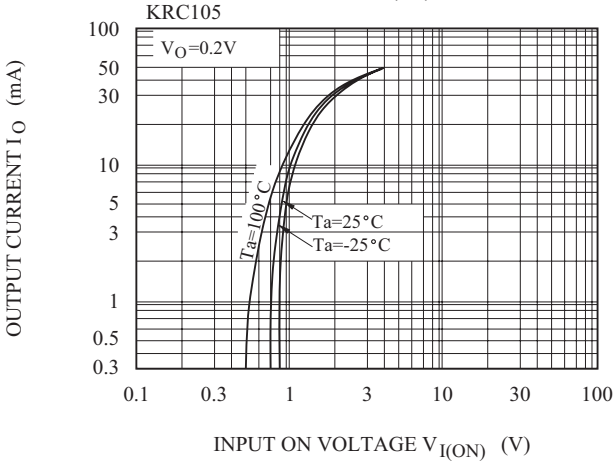
I_O - $V_{I(ON)}$

KRC104



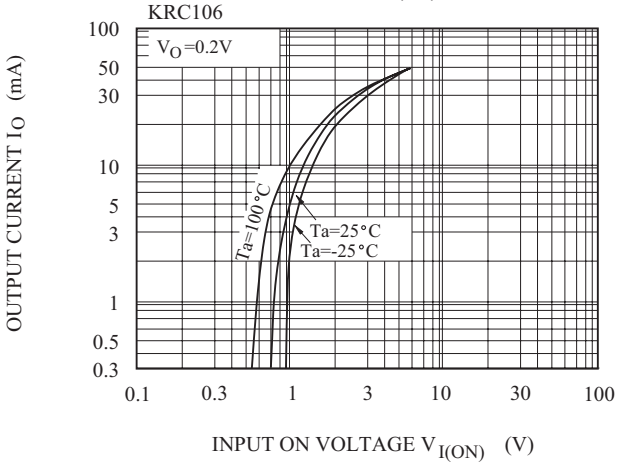
I_O - $V_{I(ON)}$

KRC105



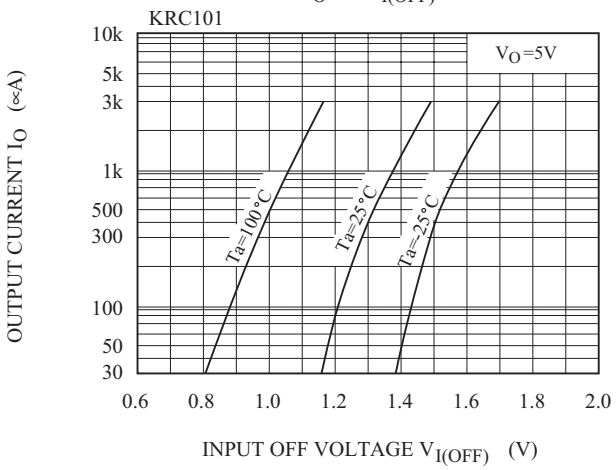
I_O - $V_{I(ON)}$

KRC106



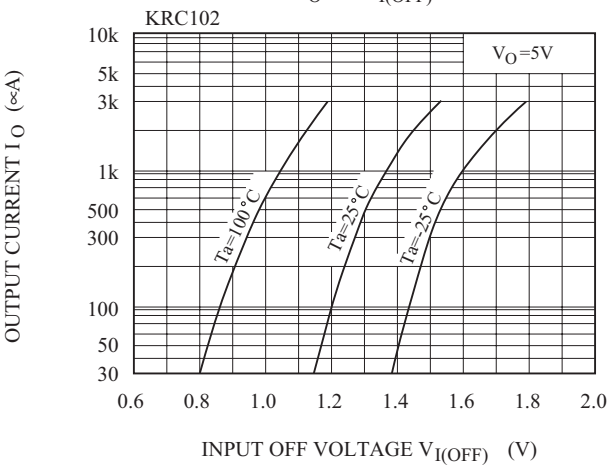
I_O - $V_{I(OFF)}$

KRC101



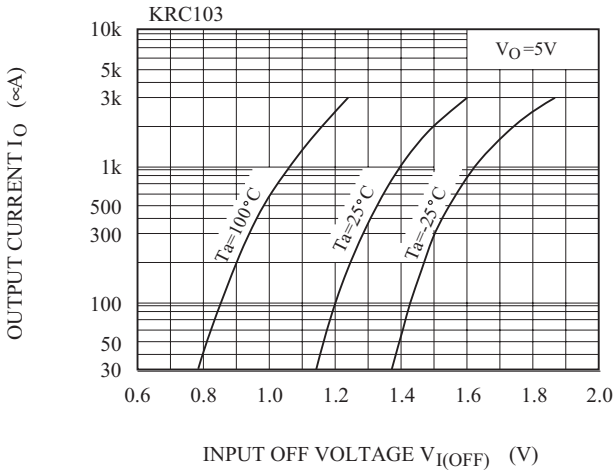
I_O - $V_{I(OFF)}$

KRC102



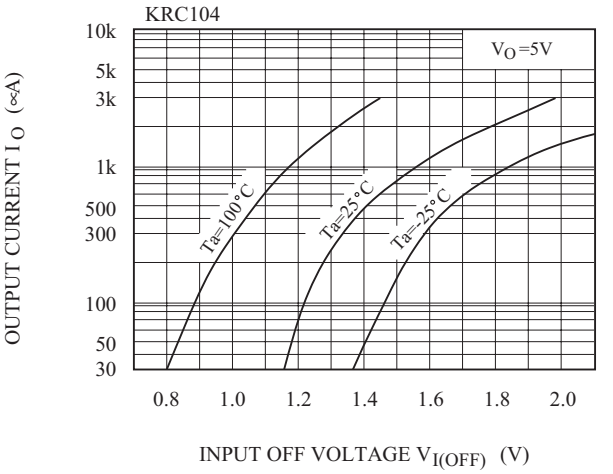
I_O - $V_{I(OFF)}$

KRC103



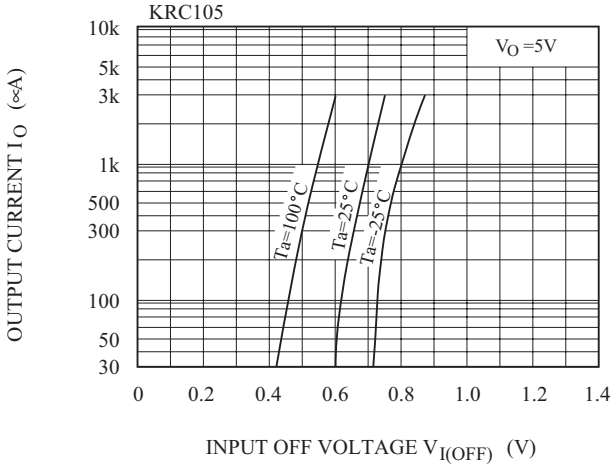
I_O - $V_{I(OFF)}$

KRC104



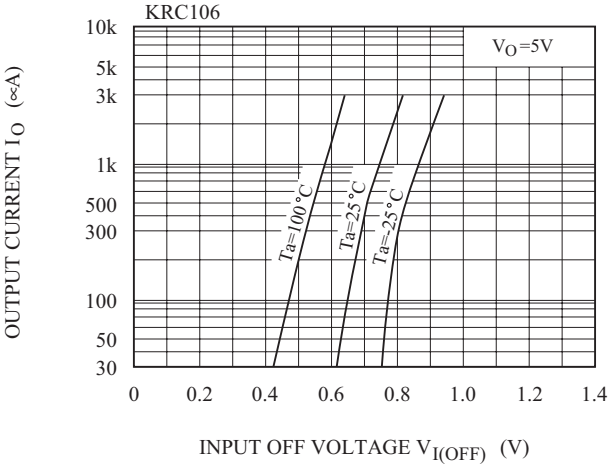
I_O - $V_{I(OFF)}$

KRC105

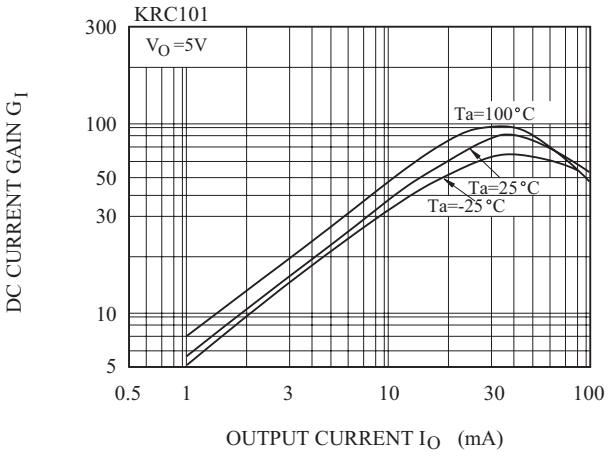


I_O - $V_{I(OFF)}$

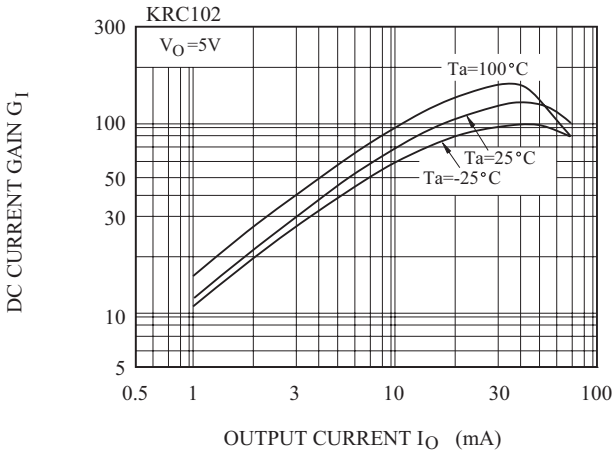
KRC106



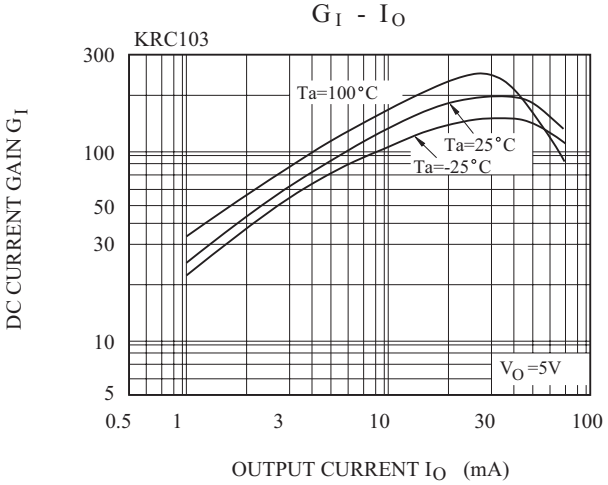
G_I - I_O



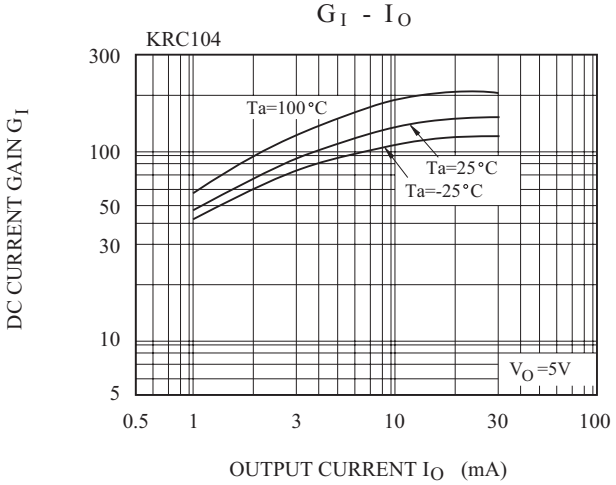
G_I - I_O



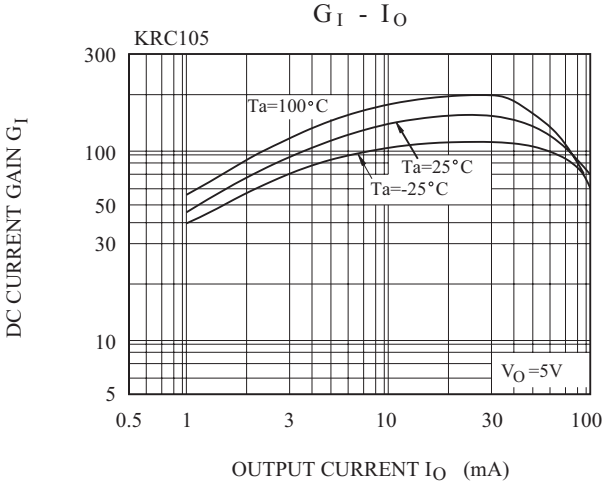
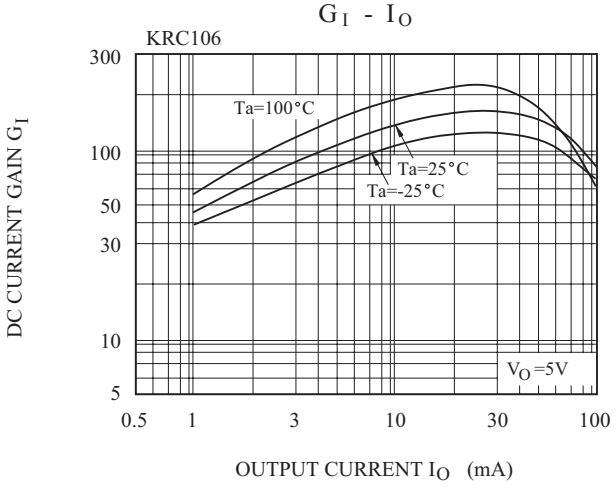
G_I - I_O



G_I - I_O



G_I - I_O



G_I - I_O