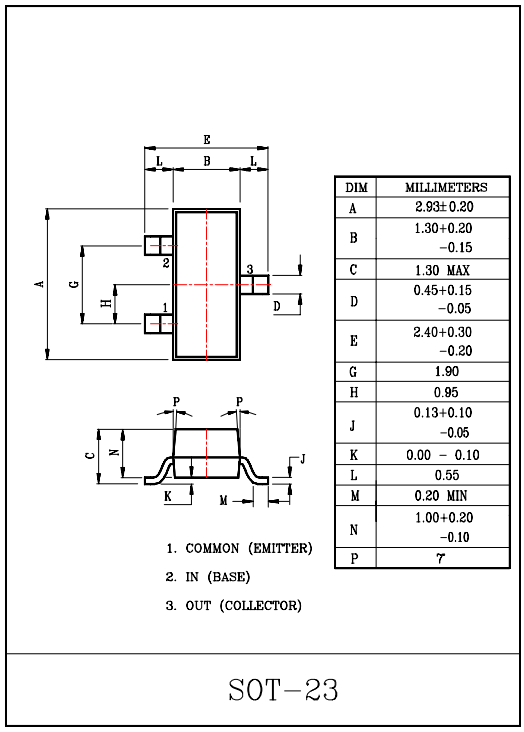
KRC101S~ KRC106S

EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

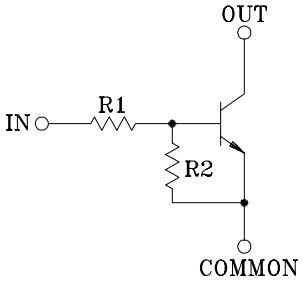
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20 −0.15
C	1.30 MAX
D	0.45+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°

SOT-23

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC101S	4.7	4.7
KRC102S	10	10
KRC103S	22	22
KRC104S	47	47
KRC105S	2.2	47
KRC106S	4.7	47

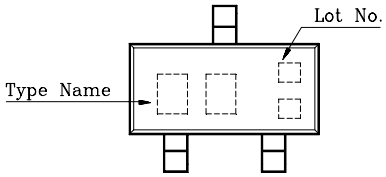
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC101S ~106S	V_O	50	V
Input Voltage	KRC101S	V_I	20, -10	V
	KRC102S		30, -10	
	KRC103S		40, -10	
	KRC104S		40, -10	
	KRC105S		12, -5	
	KRC106S		20, -5	
Output Current	KRC101S ~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	KRC101S	KRC102S	KRC103S	KRC104S	KRC105S	KRC106S
MARK	NA	NB	NC	ND	NE	NF

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

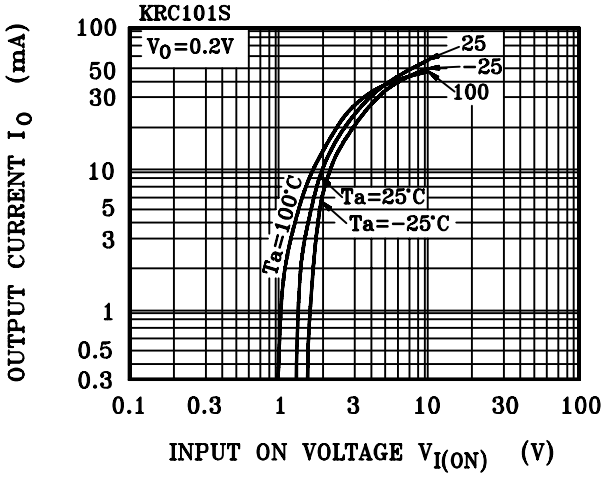
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRC101S~106S	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain	KRC101S	G_I	V_O=5V, I_O=10mA	30	55	-	
	KRC102S			50	80	-	
	KRC103S			70	120	-	
	KRC104S			80	200	-	
	KRC105S			80	200	-	
	KRC106S			80	200	-	
Output Voltage	KRC101S~106S	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	0.1	0.3	V
Input Voltage (ON)	KRC101S	$V_{I(ON)}$	V_O=0.2V, I_O=5mA	-	1.5	2.0	V
	KRC102S			-	1.8	2.4	
	KRC103S			-	2.1	3.0	
	KRC104S			-	2.8	5.0	
	KRC105S			-	0.8	1.1	
	KRC106S			-	0.9	1.3	
Input Votlage (OFF)	KRC101S~104S	$V_{I(OFF)}$	V_O=5V, I_O=0.1mA	1.0	1.2	-	V
	KRC105S~106S			0.5	0.65	-	
Transition Frequency	KRC101S~106S	f_T *	V_O=10V, I_O=5mA	-	200	-	MHz
Input Current	KRC101S	I_I	V_I=5V	-	-	1.8	mA
	KRC102S			-	-	0.88	
	KRC103S			-	-	0.36	
	KRC104S			-	-	0.18	
	KRC105S			-	-	3.6	
	KRC106S			-	-	1.8	

Note : *Characteristic of Transistor Only

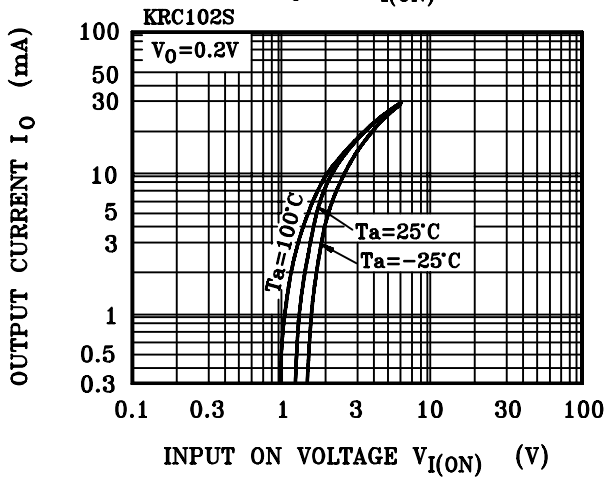
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRC101S	t_r	V_O=5V V_{IN}=5V R_L=1kΩ	-	0.03	-	μS
		KRC102S			-	0.05	-	
		KRC103S			-	0.12	-	
		KRC104S			-	0.22	-	
		KRC105S			-	0.01	-	
		KRC106S			-	0.03	-	
	Storage Time	KRC101S	t_{stg}		-	2.0	-	
		KRC102S			-	2.0	-	
		KRC103S			-	2.0	-	
		KRC104S			-	2.0	-	
		KRC105S			-	2.0	-	
		KRC106S			-	2.0	-	
	Fall Time	KRC101S	t_f		-	0.12	-	
		KRC102S			-	0.36	-	
		KRC103S			-	0.35	-	
		KRC104S			-	0.6	-	
		KRC105S			-	0.1	-	
		KRC106S			-	0.19	-	

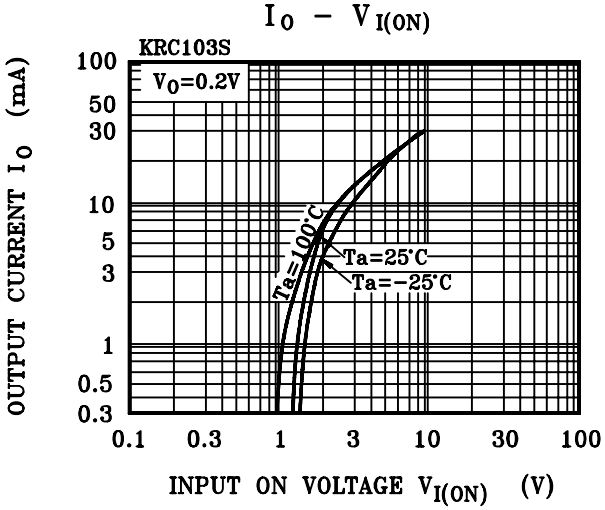
$I_O - V_{I(ON)}$



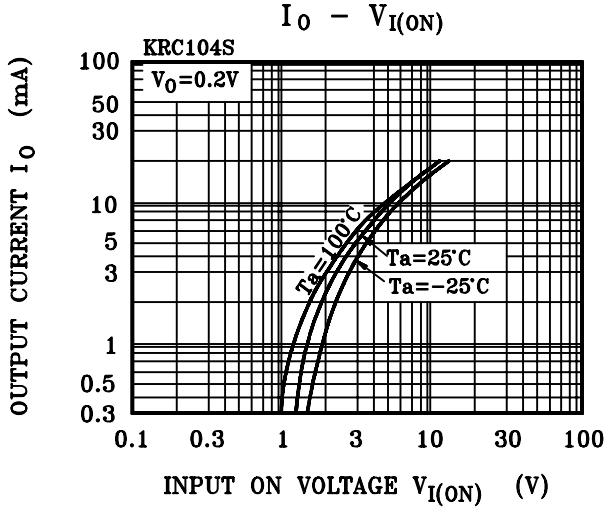
$I_O - V_{I(ON)}$



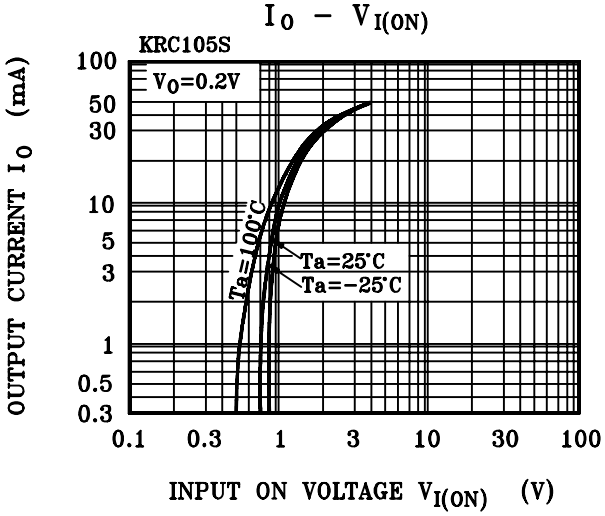
$I_O - V_{I(ON)}$



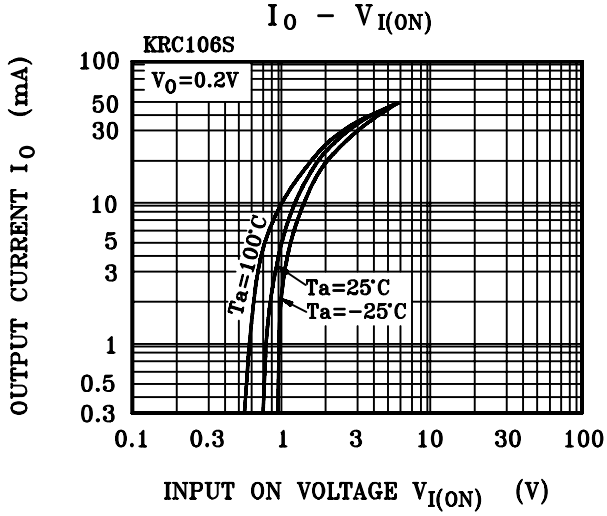
$I_O - V_{I(ON)}$

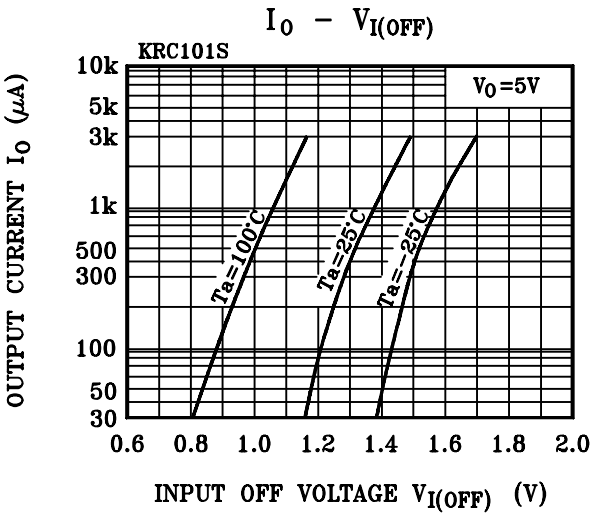


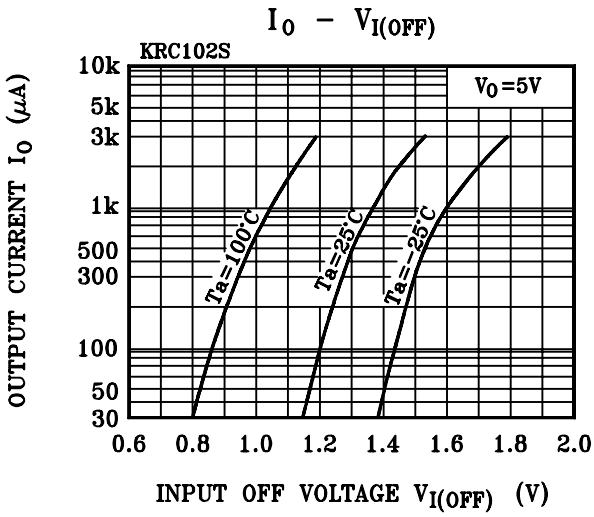
$I_O - V_{I(ON)}$

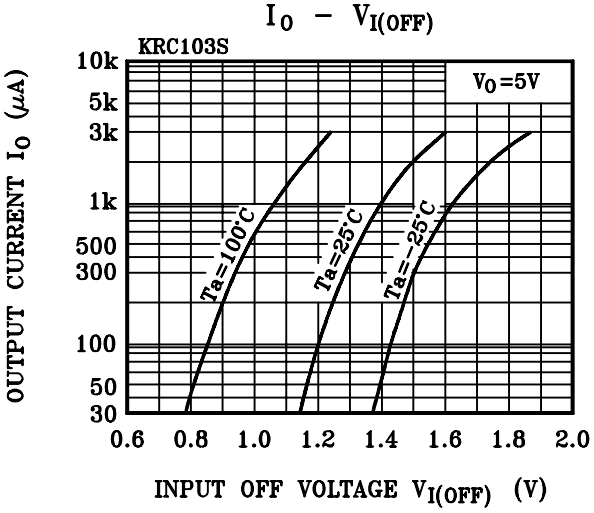


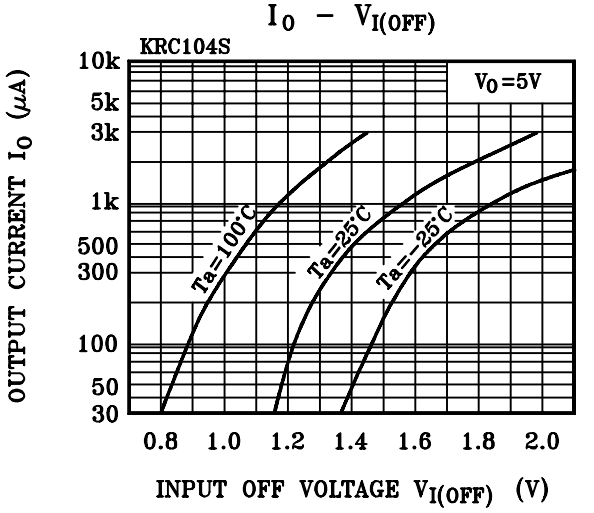
$I_O - V_{I(ON)}$

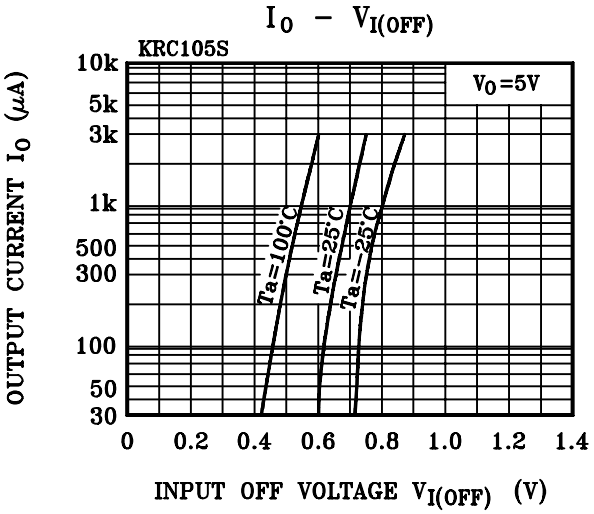


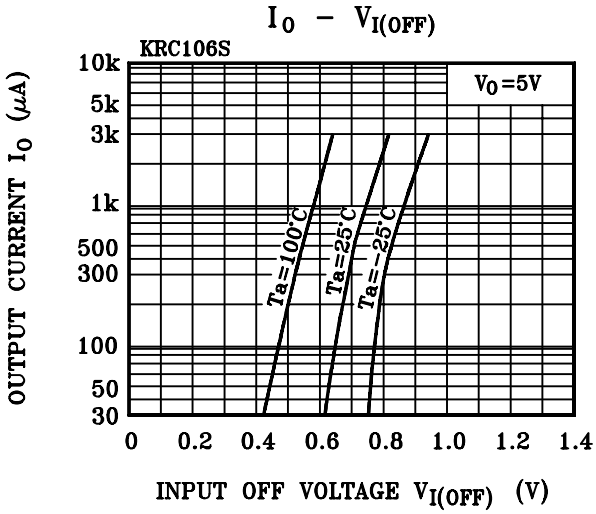

I_O – $V_{I(OFF)}$
KRC101S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)


I_O – $V_{I(OFF)}$
KRC102S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

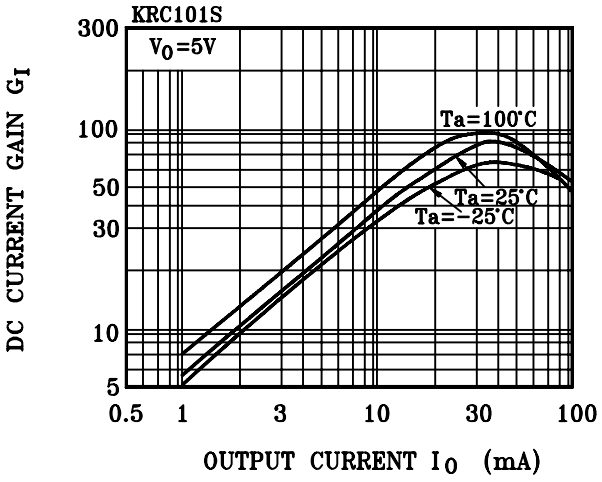

I_O – $V_{I(OFF)}$
KRC103S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)


I_O – $V_{I(OFF)}$
KRC104S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

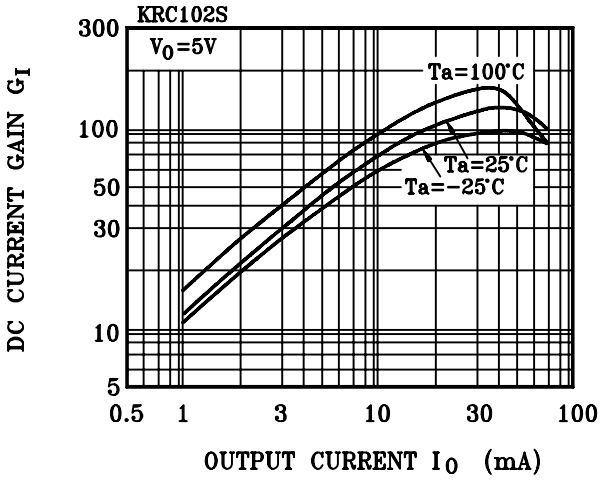

I_O – $V_{I(OFF)}$
KRC105S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)


I_O – $V_{I(OFF)}$
KRC106S
V_O=5V
Ta=100°C
Ta=25°C
Ta=–25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

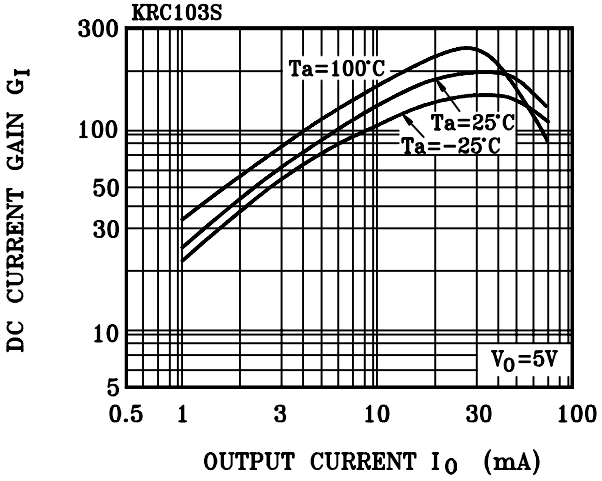
$G_I - I_O$



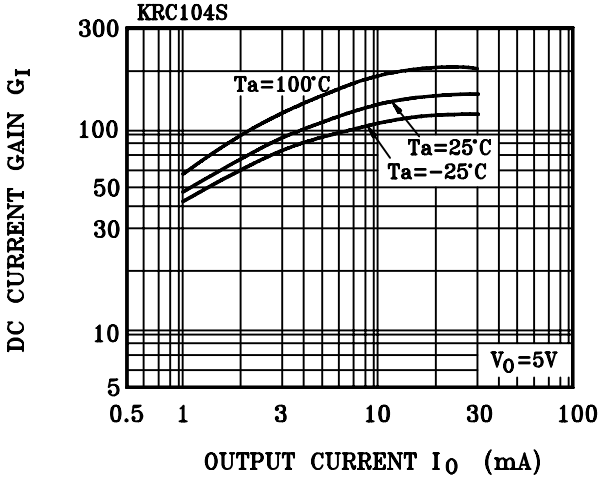
$G_I - I_O$



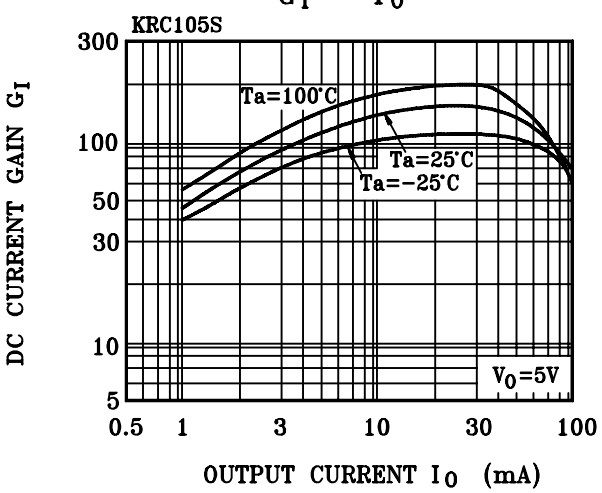
$G_I - I_O$



$G_I - I_O$



$G_I - I_O$



$G_I - I_O$