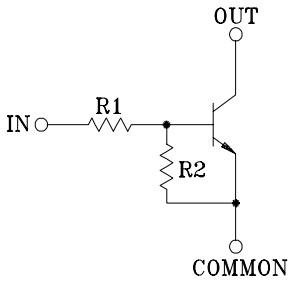
KRC107S ~ KRC109S

EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

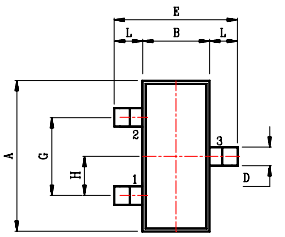
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC107S	10	47
KRC108S	22	47
KRC109S	47	22



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°

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

SOT-23

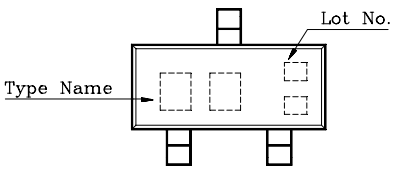
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC107S ~109S	V_O	50	V
Input Voltage	KRC107S	V_I	30, -6	V
	KRC108S		40, -7	
	KRC109S		40,-15	
Output Current	KRC107S ~109S	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	KRC107S	KRC108S	KRC109S
MARK	NH	NI	NJ

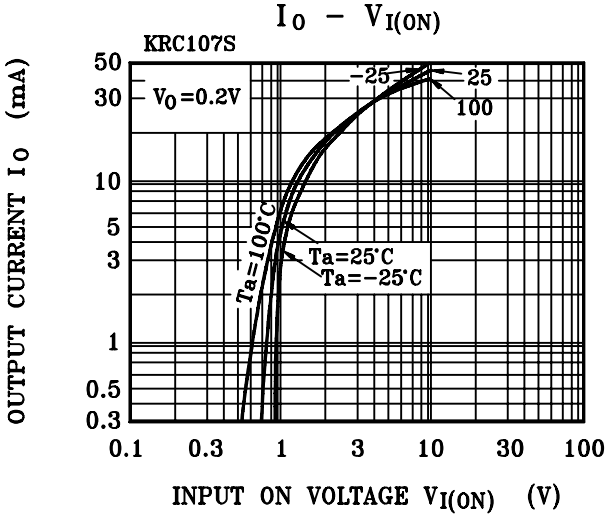
Marking

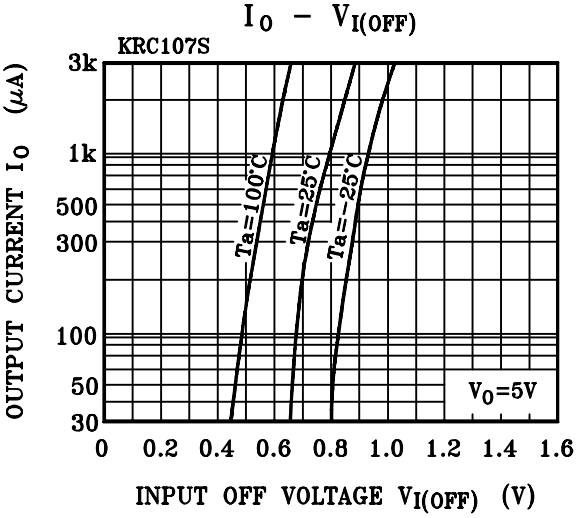


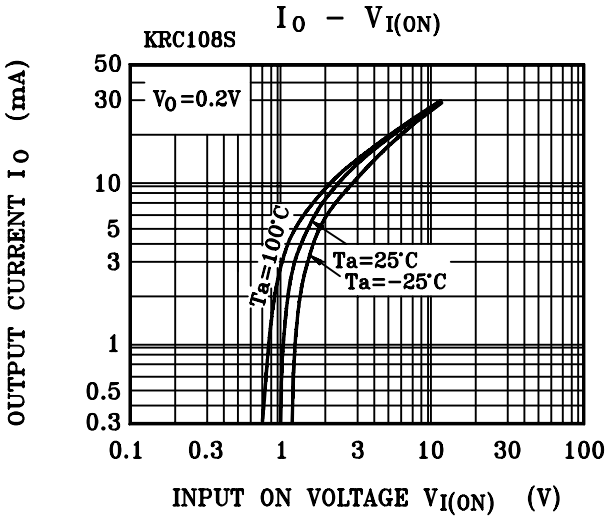
ELECTRICAL CHARACTERISTICS (Ta=25℃)

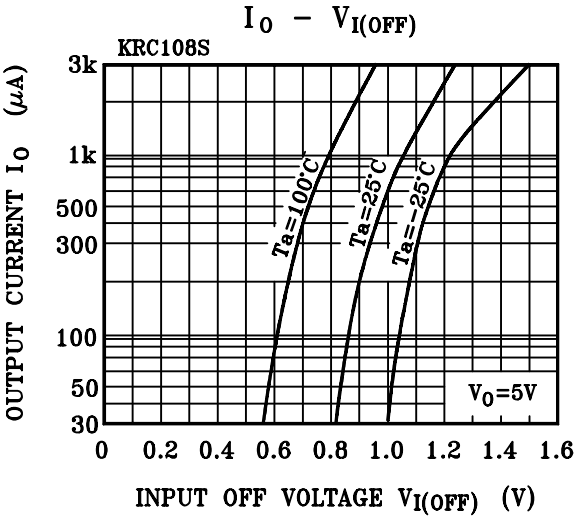
CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current		KRC107S~109S	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain		KRC107S	G_I	V_O=5V, I_O=10mA	80	150	-	
		KRC108S			80	150	-	
		KRC109S			70	140	-	
Output Voltage		KRC107S~109S	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	0.1	0.3	V
Input Voltage (ON)		KRC107S	$V_{I(ON)}$	V_O=0.2V, I_O=5mA	-	1.2	1.8	V
		KRC108S			-	1.8	2.6	
		KRC109S			-	3.0	5.8	
Input Votlage (OFF)		KRC107S	$V_{I(OFF)}$	V_O=5V, I_O=0.1mA	0.5	0.75	-	V
		KRC108S			0.6	0.88	-	
		KRC109S			1.5	1.82	-	
Transition Frequency		KRC107S~109S	f_T *	V_O=10V, I_O=5mA	-	200	-	MHz
Input Current		KRC107S	I_I	V_I=5V	-	-	0.88	mA
		KRC108S			-	-	0.36	
		KRC109S			-	-	0.16	
Switching Time	Rise Time	KRC107S	t_r	V_O=5V, V_{IN}=5V R_L=1kΩ	-	0.05	-	μS
		KRC108S			-	0.12	-	
		KRC109S			-	0.26	-	
	Storage Time	KRC107S	t_{stg}		-	2.0	-	
		KRC108S			-	2.4	-	
		KRC109S			-	1.5	-	
	Fall Time	KRC107S	t_f		-	0.36	-	
		KRC108S			-	0.4	-	
		KRC109S			-	0.41	-	

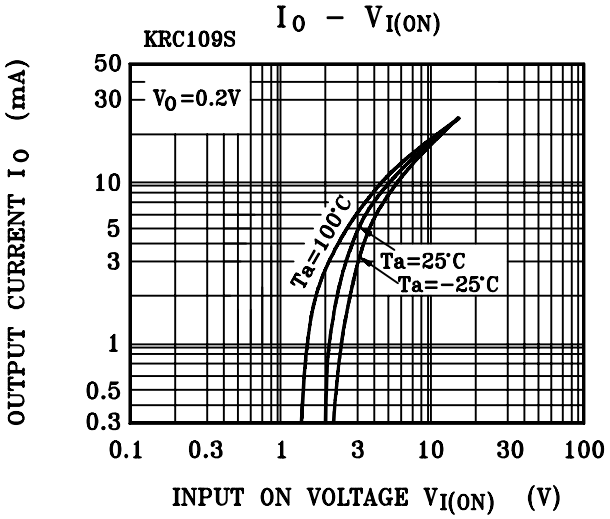
Note : *Characteristic of Transistor Only

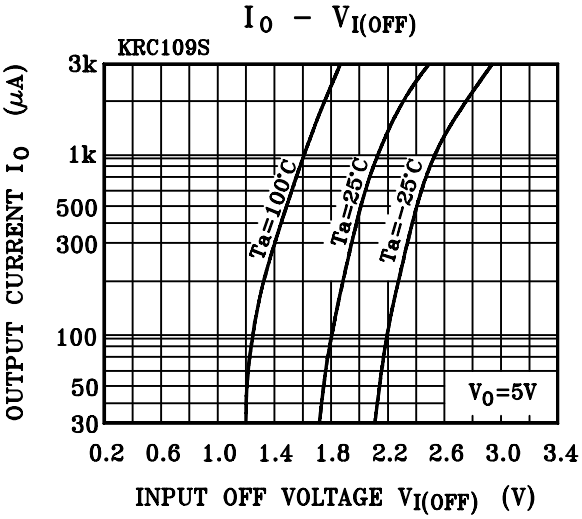

$I_O - V_{I(ON)}$
KRC107S
V_O=0.2V
-25
25
100
Ta=100°C
Ta=25°C
Ta=-25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


$I_O - V_{I(OFF)}$
KRC107S
Ta=100°C
Ta=25°C
Ta=-25°C
V_O=5V
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

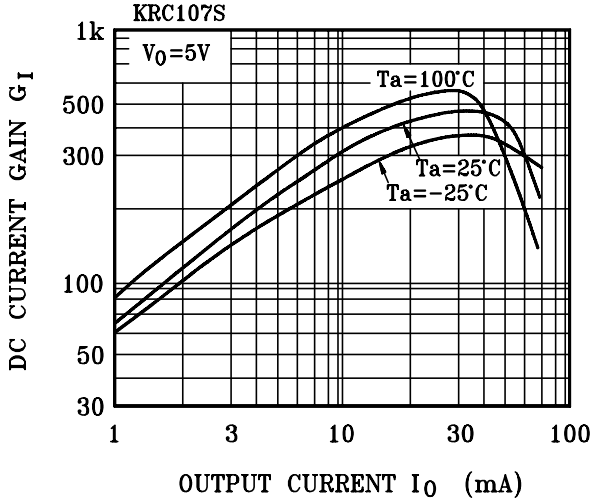

$I_O - V_{I(ON)}$
KRC108S
V_O=0.2V
Ta=100°C
Ta=25°C
Ta=-25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


$I_O - V_{I(OFF)}$
KRC108S
Ta=100°C
Ta=25°C
Ta=-25°C
V_O=5V
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

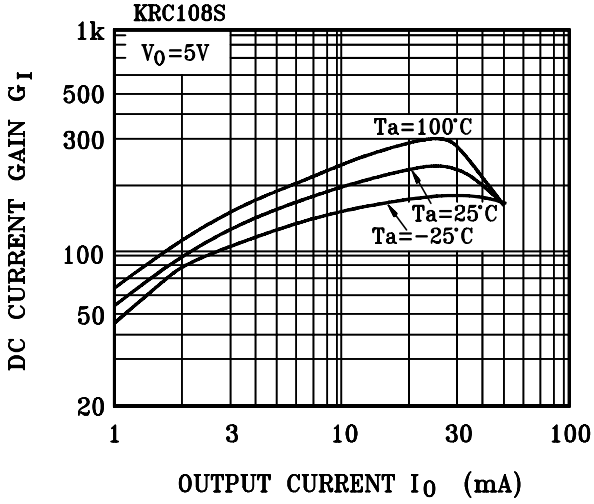

$I_O - V_{I(ON)}$
KRC109S
V_O=0.2V
Ta=100°C
Ta=25°C
Ta=-25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


$I_O - V_{I(OFF)}$
KRC109S
Ta=100°C
Ta=25°C
Ta=-25°C
V_O=5V
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)

$G_I - I_O$



$G_I - I_O$



$G_I - I_O$