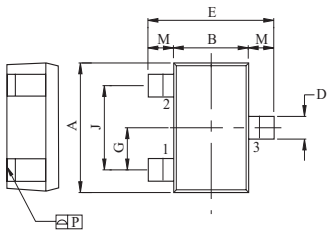
KRC416~KRC422

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.
- Suffix U : Qualified to AEC-Q101.
  ex) KRC417-RTK/HU

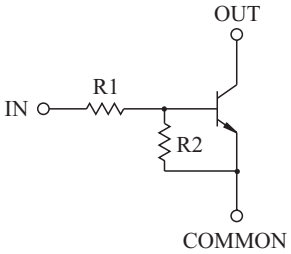


DIM	MILLIMETERS
A	2.00±0.20
B	1.25±0.15
C	0.90±0.10
D	0.3+0.10/-0.05
E	2.10±0.20
G	0.65
H	0.15+0.1/-0.06
J	1.30
K	0.00~0.10
L	0.70
M	0.42±0.10
N	0.10 MIN
P	0.1 MAX

1. EMITTER
2. BASE
3. COLLECTOR

USM

EQUIVALENT CIRCUIT



TYPE NO.	R1(kΩ)	R2(kΩ)
KRC416	1	10
KRC417	2.2	2.2
KRC418	2.2	10
KRC419	4.7	10
KRC420	10	4.7
KRC421	47	10
KRC422	100	100

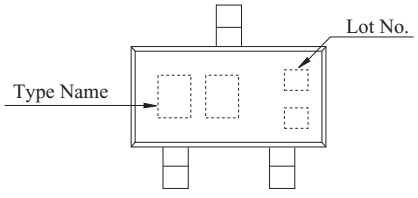
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC416~422	V_O	50	V
Input Voltage	KRC416	V_I	10, -5	V
	KRC417		12, -10	
	KRC418		12,-5	
	KRC419		20, -7	
	KRC420		30, -10	
	KRC421		40, -15	
	KRC422		40, -10	
Output Current	KRC416~422	I_O	100	mA
Power Dissipation		P_D	100	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 150	℃

MARK SPEC

TYPE	KRC416	KRC417	KRC418	KRC419	KRC420	KRC421	KRC422
MARK	N2	N4	N5	N6	N7	N8	N9

Marking

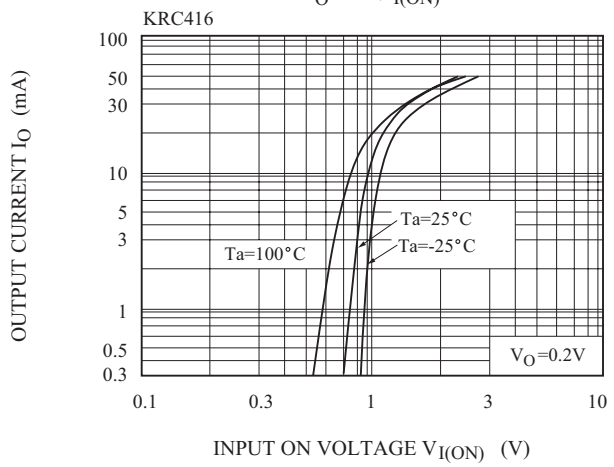


ELECTRICAL CHARACTERISTICS (Ta=25℃)

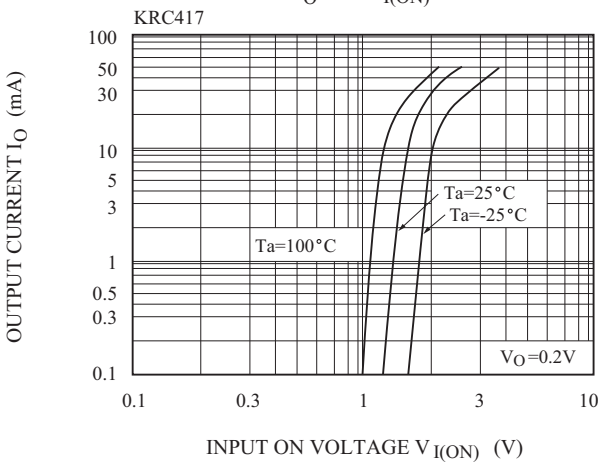
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRC416 422	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain	KRC416	G_I	V_O=5V, I_O=5mA	33	-	-	
	KRC417		V_O=5V, I_O=20mA	20	-	-	
	KRC418		V_O=5V, I_O=10mA	33	-	-	
	KRC419		V_O=5V, I_O=10mA	30	-	-	
	KRC420		V_O=5V, I_O=10mA	24	-	-	
	KRC421		V_O=5V, I_O=5mA	33	-	-	
	KRC422		V_O=5V, I_O=5mA	62	-	-	
Output Voltage	KRC416	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	-	0.3	V
	KRC417		I_O=10mA, I_I=0.5mA	-	0.1	0.3	
	KRC418		I_O=10mA, I_I=0.5mA	-	-	0.3	
	KRC419		I_O=10mA, I_I=0.5mA	-	0.1	0.3	
	KRC420		I_O=10mA, I_I=0.5mA	-	0.1	0.3	
	KRC421		I_O=10mA, I_I=0.5mA	-	0.1	0.3	
	KRC422		I_O=5mA, I_I=0.25mA	-	0.1	0.3	
Input Voltage (ON)	KRC416	$V_{I(ON)}$	V_O=0.3V, I_O=20mA	-	0.98	3	V
	KRC417		V_O=0.3V, I_O=20mA	-	1.83	3	
	KRC418		V_O=0.3V, I_O=20mA	-	1.22	3	
	KRC419		V_O=0.3V, I_O=20mA	-	1.76	2.5	
	KRC420		V_O=0.3V, I_O=2mA	-	2	3	
	KRC421		V_O=0.3V, I_O=2mA	-	3.9	5	
	KRC422		V_O=0.3V, I_O=1mA	-	1.64	3	
Input Voltage (OFF)	KRC416	$V_{I(OFF)}$	V_{CC}=5V, I_O=100 μA	0.3	0.63	-	V
	KRC417			0.5	1.15	-	
	KRC418			0.3	0.67	-	
	KRC419			0.3	0.82	-	
	KRC420			0.8	1.68	-	
	KRC421			1	3.09	-	
	KRC422			0.5	1.17	-	
Transition Frequency	KRC416 422	f_T*	V_O=10V, I_O=5mA	-	250	-	MHz
Input Current	KRC416	I_I	V_I=5V	-	-	7.2	mA
	KRC417			-	-	3.8	
	KRC418			-	-	3.8	
	KRC419			-	-	1.8	
	KRC420			-	-	0.88	
	KRC421			-	-	0.16	
	KRC422			-	-	0.15	
Input Resistor	KRC416	R1	-	0.7	1	1.3	kΩ
	KRC417			1.54	2.2	2.86	
	KRC418			1.54	2.2	2.86	
	KRC419			3.29	4.7	6.11	
	KRC420			7	10	13	
	KRC421			32.9	47	61.1	
	KRC422			70	100	130	
Resistor Ratio	KRC416	R2/R1	-	8	10	12	
	KRC417			0.8	1.0	1.2	
	KRC418			3.6	4.5	5.5	
	KRC419			1.7	2.1	2.6	
	KRC420			0.37	0.47	0.57	
	KRC421			0.17	0.21	0.26	
	KRC422			0.8	1.0	1.2	

Note : * Characteristic of Transistor Only.

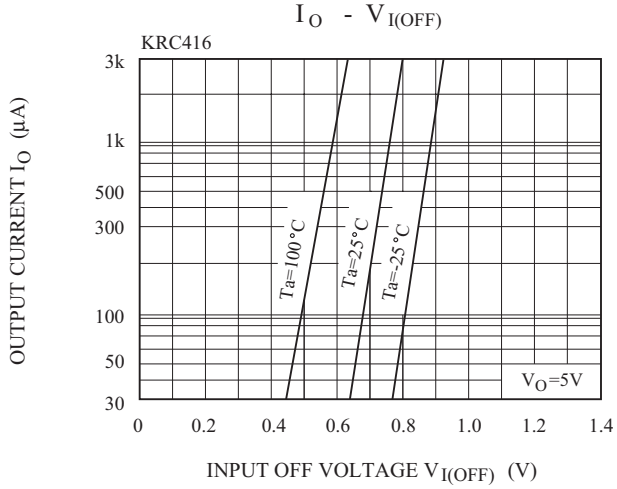
I_O - $V_{I(ON)}$



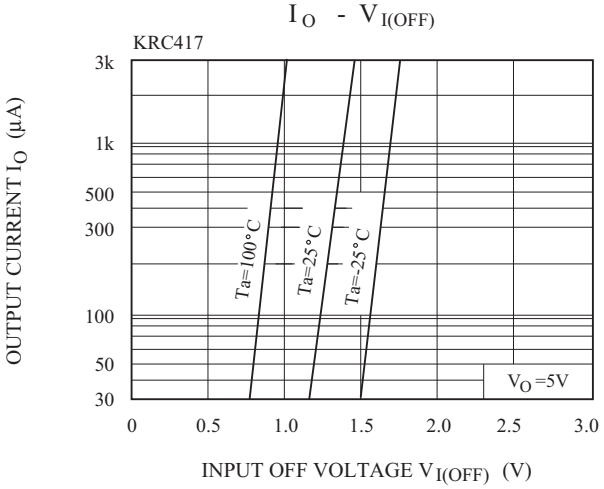
I_O - $V_{I(ON)}$



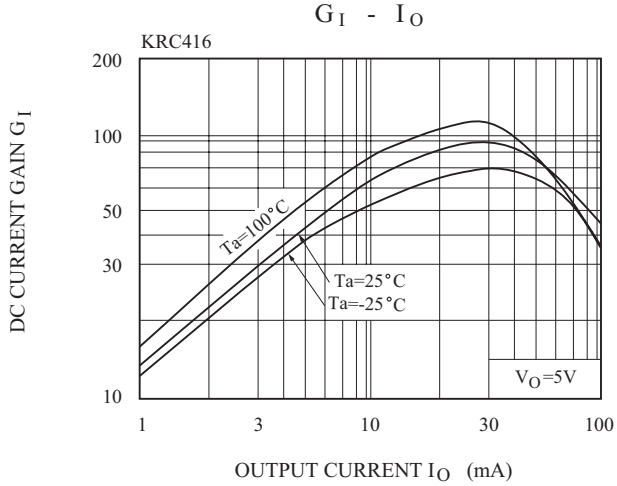
I_O - $V_{I(OFF)}$



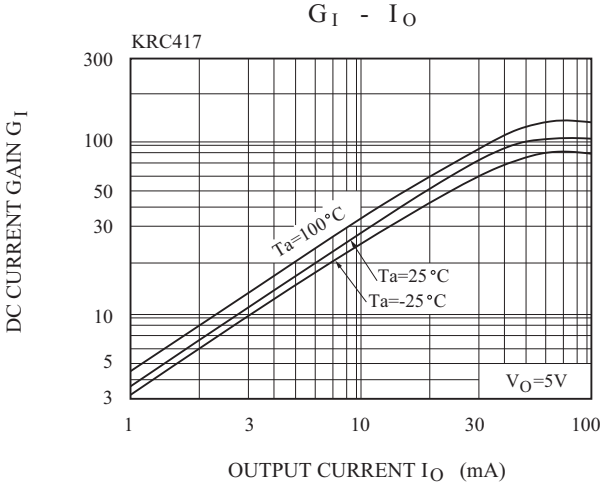
I_O - $V_{I(OFF)}$



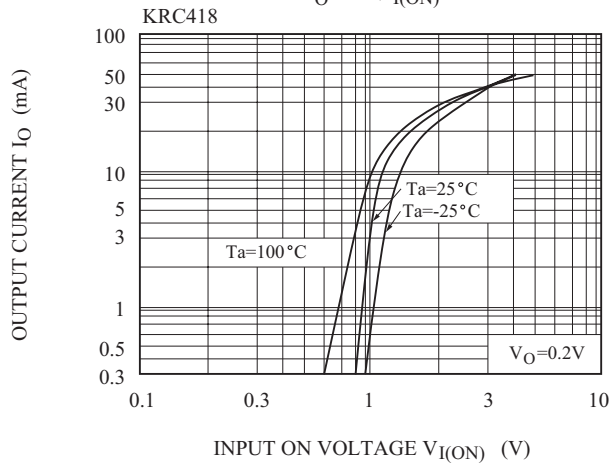
G_I - I_O



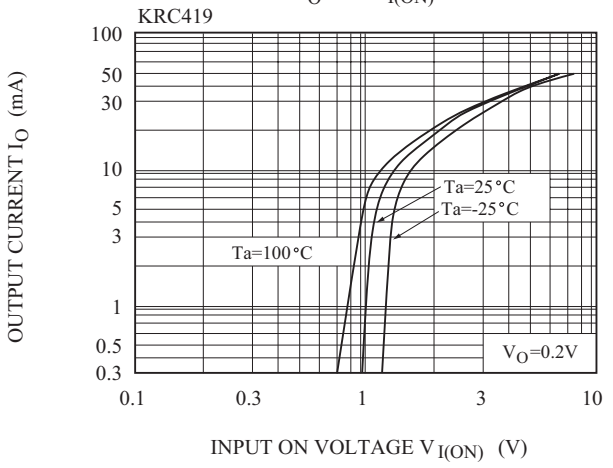
G_I - I_O



I_O - $V_{I(ON)}$



I_O - $V_{I(ON)}$



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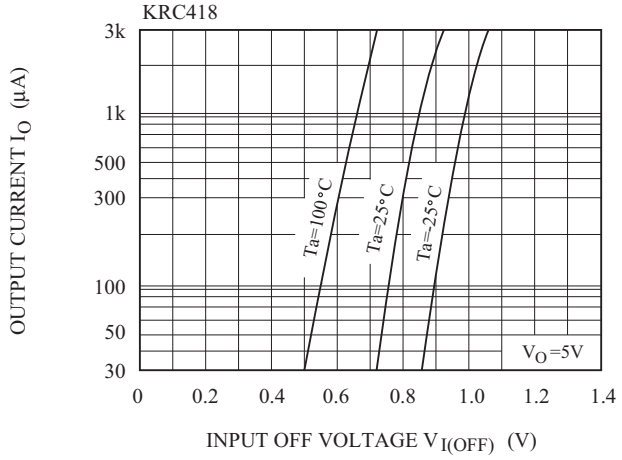

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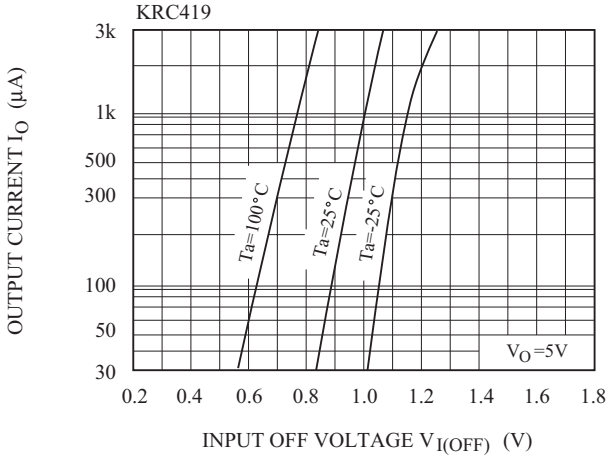

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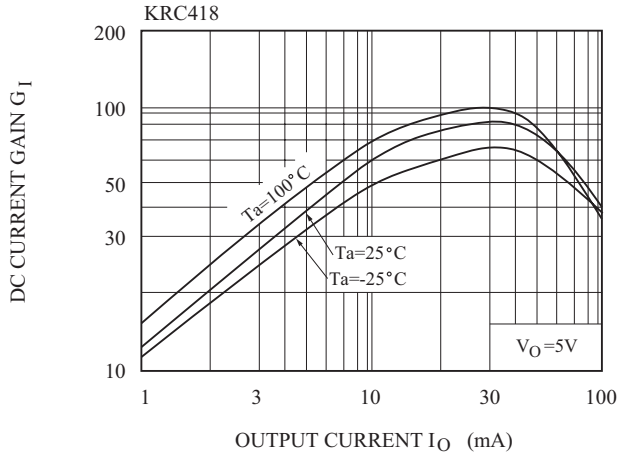

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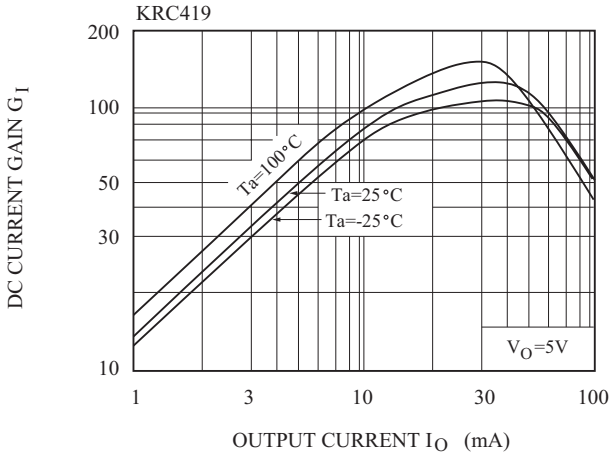

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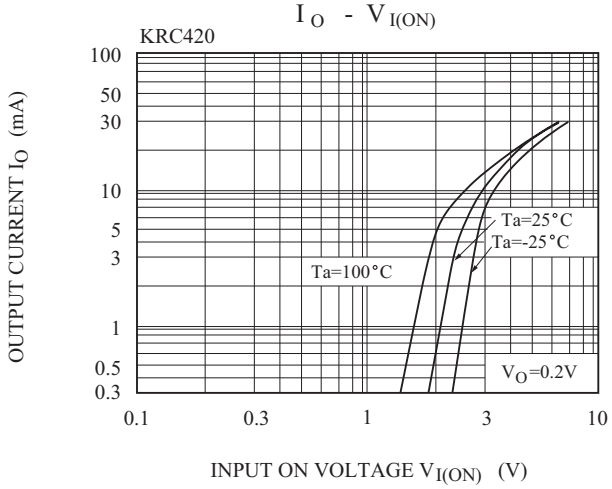

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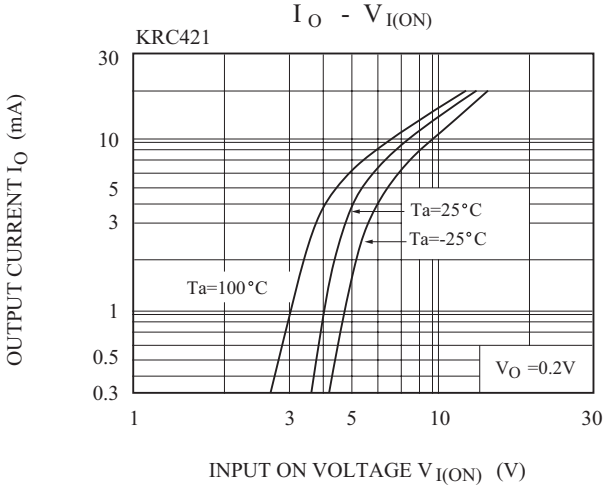

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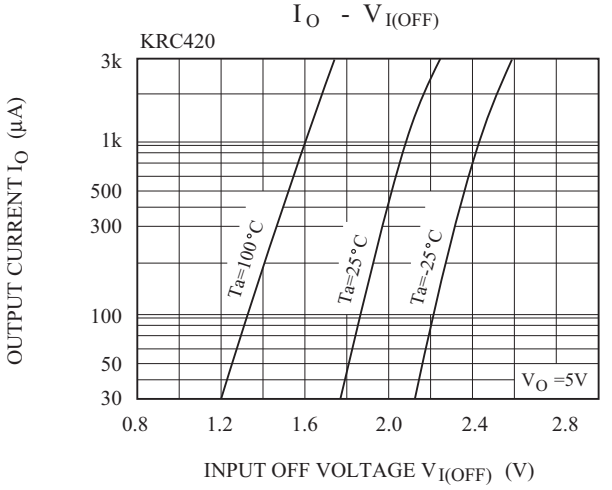

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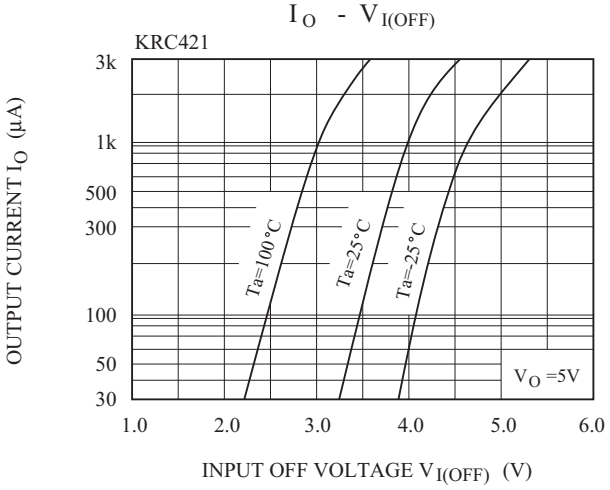

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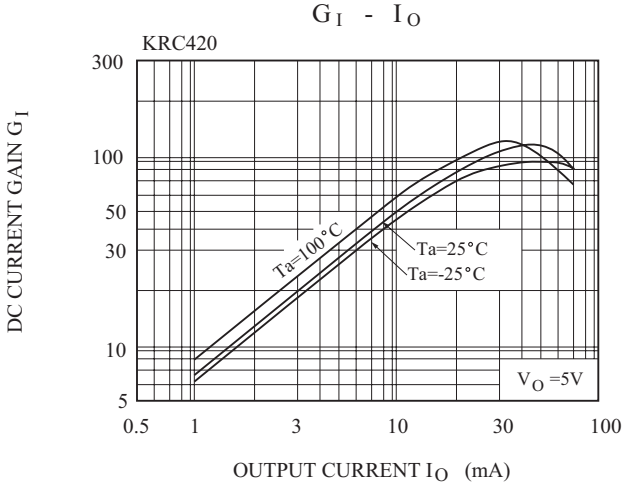

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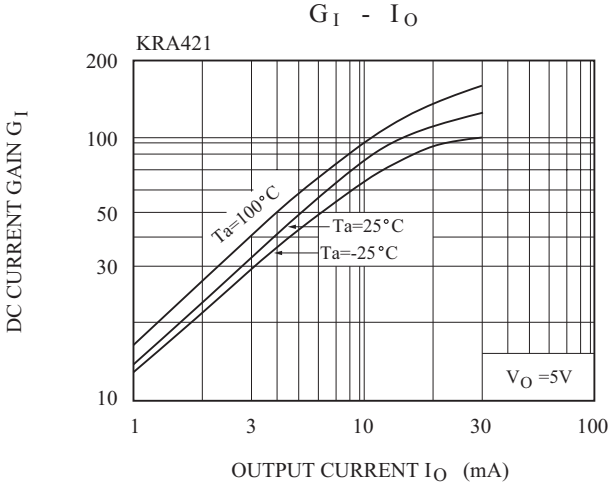

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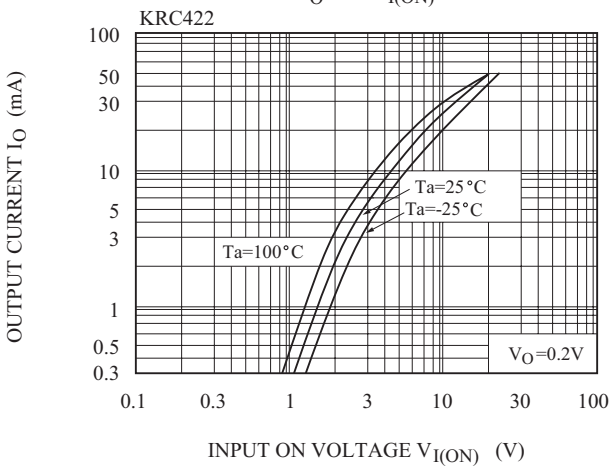

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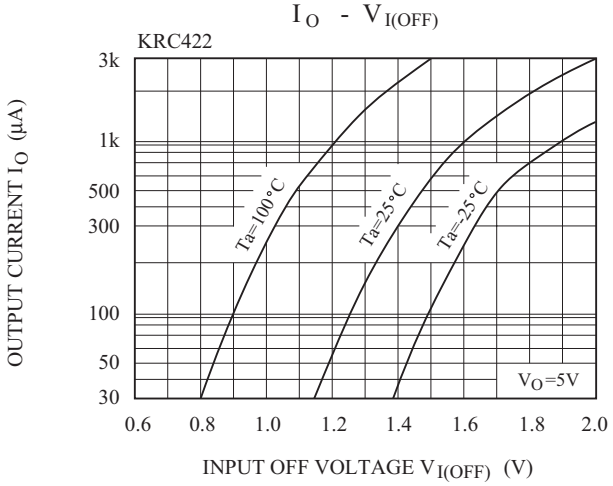

G_I - I_O