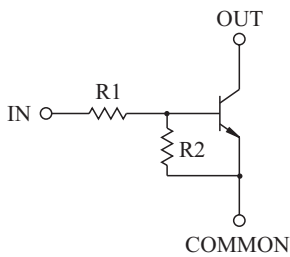


**SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION**

**FEATURES**

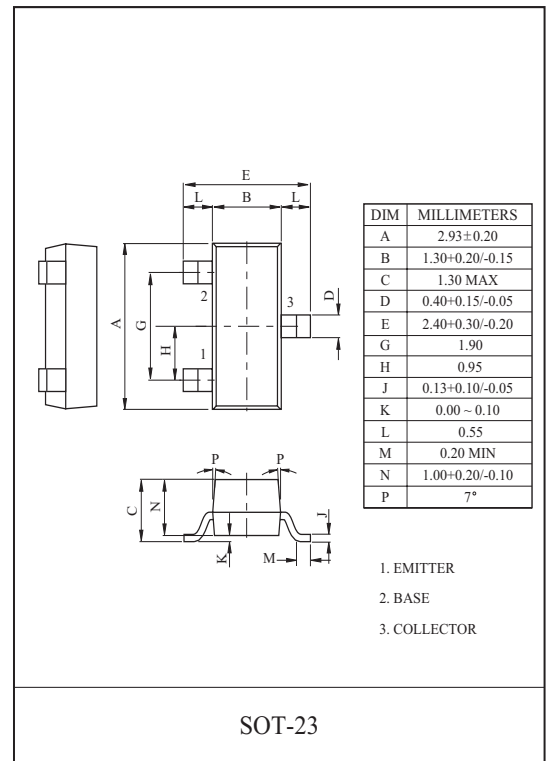
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- Suffix U : Qualified to AEC-Q101  
ex) KRC116S-RTK/HU

**EQUIVALENT CIRCUIT**



**BIAS RESISTOR VALUES**

| TYPE NO. | R1(k ) | R2(k ) |
|----------|--------|--------|
| KRC116S  | 1      | 10     |
| KRC117S  | 2.2    | 2.2    |
| KRC118S  | 2.2    | 10     |
| KRC119S  | 4.7    | 10     |
| KRC120S  | 10     | 4.7    |
| KRC121S  | 47     | 10     |
| KRC122S  | 100    | 100    |



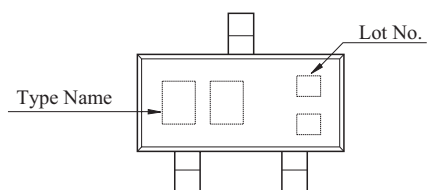
**MAXIMUM RATING (Ta=25 )**

| CHARACTERISTIC            |              | SYMBOL           | RATING  | UNIT |
|---------------------------|--------------|------------------|---------|------|
| Output Voltage            | KRC116S 122S | V <sub>O</sub>   | 50      | V    |
| Input Voltage             | KRC116S      | V <sub>I</sub>   | 10, -5  | V    |
|                           | KRC117S      |                  | 12, -10 |      |
|                           | KRC118S      |                  | 12, -5  |      |
|                           | KRC119S      |                  | 20, -7  |      |
|                           | KRC120S      |                  | 30, -10 |      |
|                           | KRC121S      |                  | 40, -15 |      |
| KRC122S                   | 40, -10      |                  |         |      |
| Output Current            | KRC116S 122S | I <sub>O</sub>   | 100     | mA   |
| Power Dissipation         |              | P <sub>D</sub>   | 200     | mW   |
| Junction Temperature      |              | T <sub>j</sub>   | -55~150 |      |
| Storage Temperature Range |              | T <sub>stg</sub> | -55 150 |      |

**MARK SPEC**

| TYPE | KRC116S | KRC117S | KRC118S | KRC119S | KRC120S | KRC121S | KRC122S |
|------|---------|---------|---------|---------|---------|---------|---------|
| MARK | N2      | N4      | N5      | N6      | N7      | N8      | N9      |

**Marking**



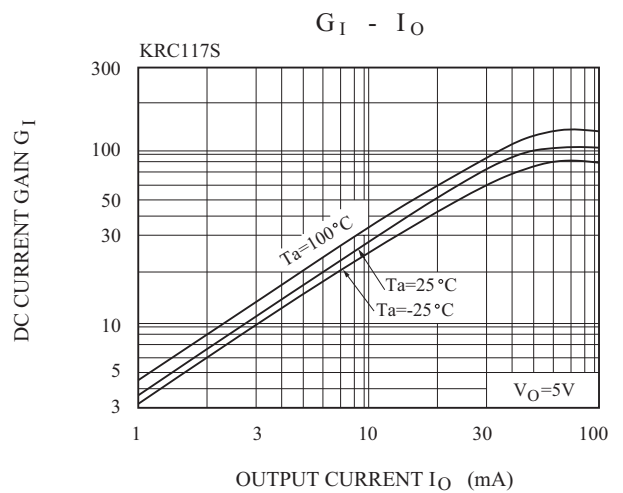
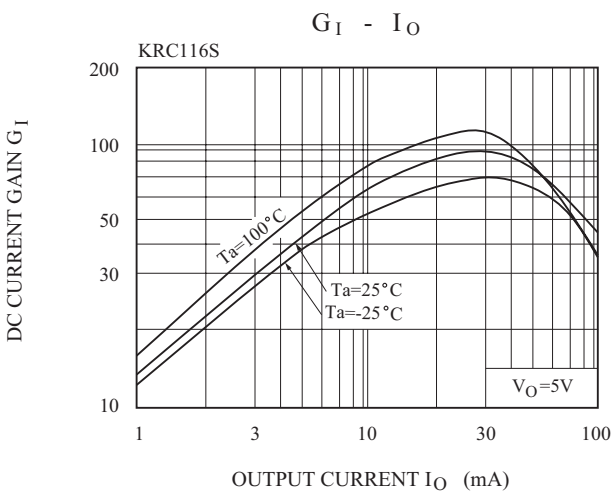
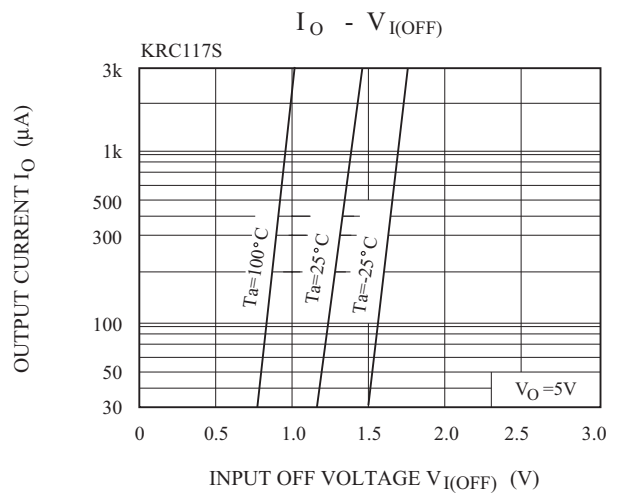
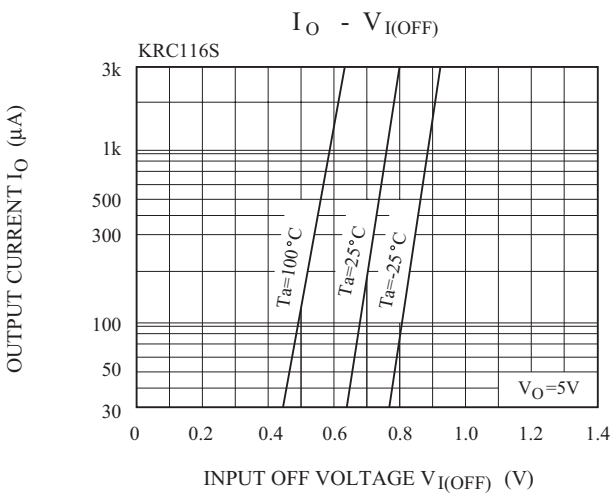
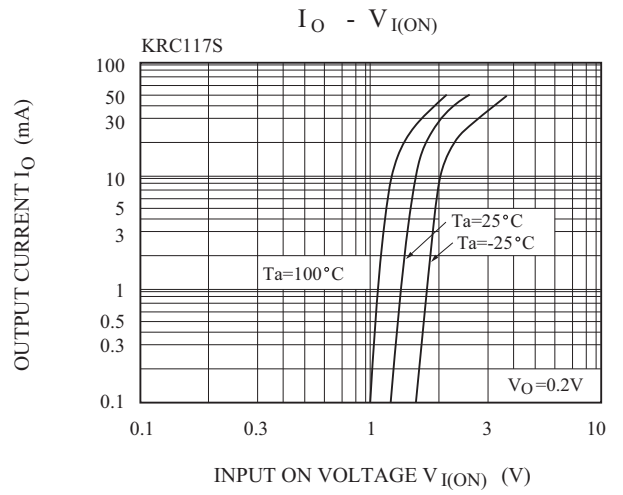
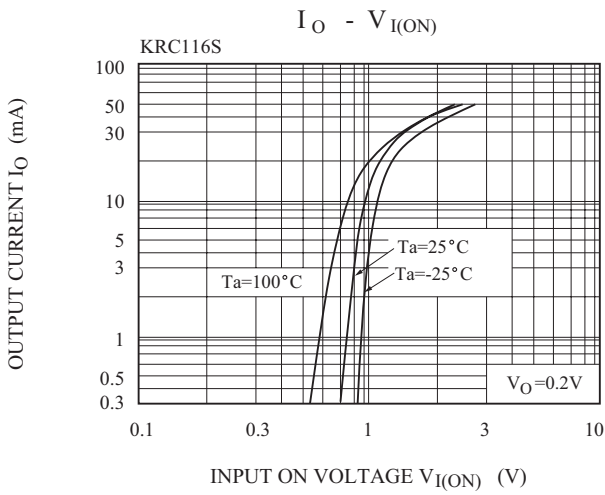
# KRC116S~KRC122S

## ELECTRICAL CHARACTERISTICS (Ta=25 )

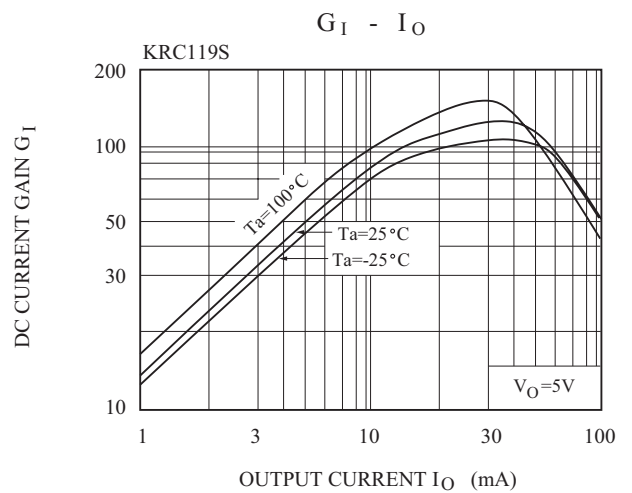
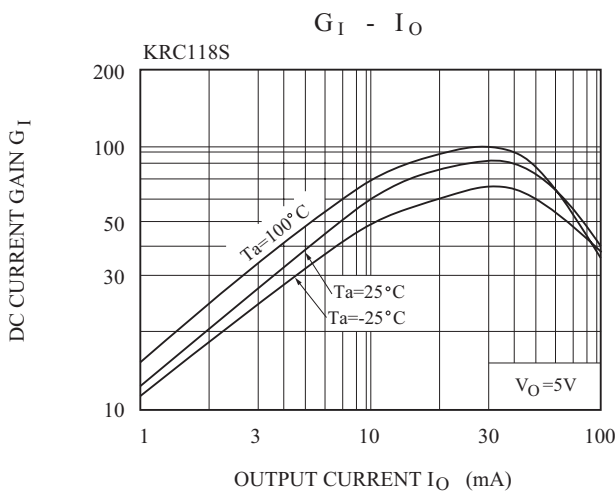
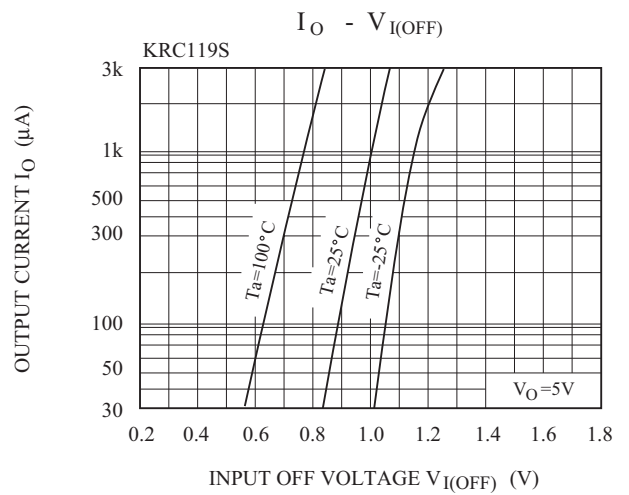
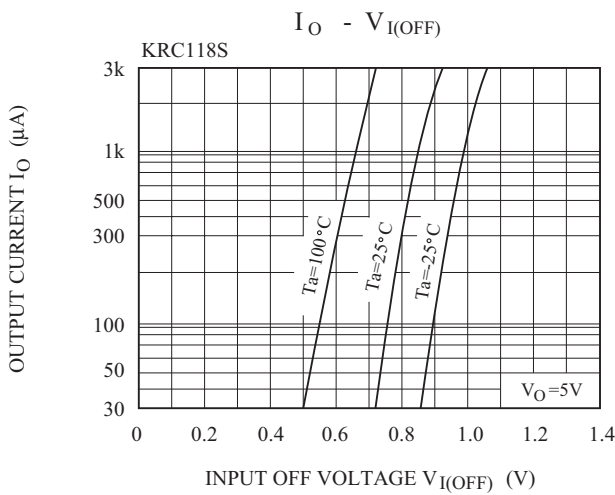
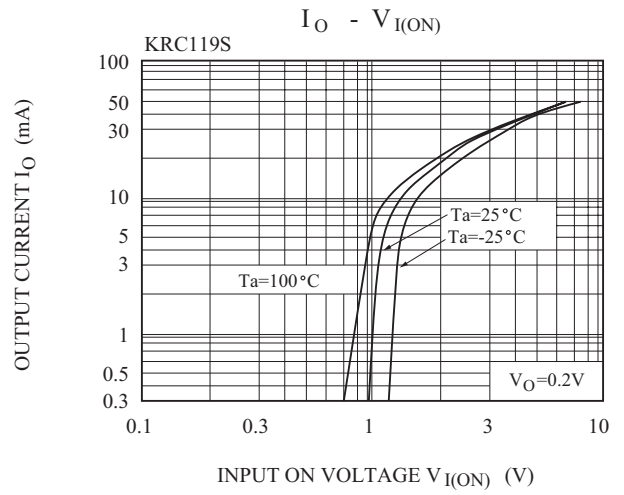
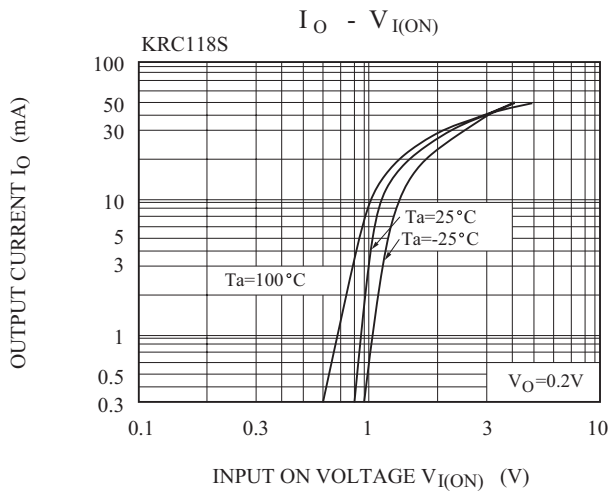
| CHARACTERISTIC         |              | SYMBOL       | TEST CONDITION            | MIN. | TYP. | MAX. | UNIT |
|------------------------|--------------|--------------|---------------------------|------|------|------|------|
| Output Cut-off Current | KRC116S 122S | $I_{O(OFF)}$ | $V_O=50V, V_I=0$          | -    | -    | 500  | nA   |
| DC Current Gain        | KRC116S      | $G_I$        | $V_O=5V, I_O=5mA$         | 33   | -    | -    |      |
|                        | KRC117S      |              | $V_O=5V, I_O=20mA$        | 20   | -    | -    |      |
|                        | KRC118S      |              | $V_O=5V, I_O=10mA$        | 33   | -    | -    |      |
|                        | KRC119S      |              | $V_O=5V, I_O=10mA$        | 30   | -    | -    |      |
|                        | KRC120S      |              | $V_O=5V, I_O=10mA$        | 24   | -    | -    |      |
|                        | KRC121S      |              | $V_O=5V, I_O=5mA$         | 33   | -    | -    |      |
|                        | KRC122S      |              | $V_O=5V, I_O=5mA$         | 62   | -    | -    |      |
| Output Voltage         | KRC116S      | $V_{O(ON)}$  | $I_O=10mA, I_I=0.5mA$     | -    | -    | 0.3  | V    |
|                        | KRC117S      |              | $I_O=10mA, I_I=0.5mA$     | -    | 0.1  | 0.3  |      |
|                        | KRC118S      |              | $I_O=10mA, I_I=0.5mA$     | -    | -    | 0.3  |      |
|                        | KRC119S      |              | $I_O=10mA, I_I=0.5mA$     | -    | 0.1  | 0.3  |      |
|                        | KRC120S      |              | $I_O=10mA, I_I=0.5mA$     | -    | 0.1  | 0.3  |      |
|                        | KRC121S      |              | $I_O=10mA, I_I=0.5mA$     | -    | 0.1  | 0.3  |      |
|                        | KRC122S      |              | $I_O=5mA, I_I=0.25mA$     | -    | 0.1  | 0.3  |      |
| Input Voltage (ON)     | KRC116S      | $V_{I(ON)}$  | $V_O=0.3V, I_O=20mA$      | -    | 0.98 | 3    | V    |
|                        | KRC117S      |              | $V_O=0.3V, I_O=20mA$      | -    | 1.83 | 3    |      |
|                        | KRC118S      |              | $V_O=0.3V, I_O=20mA$      | -    | 1.22 | 3    |      |
|                        | KRC119S      |              | $V_O=0.3V, I_O=20mA$      | -    | 1.76 | 2.5  |      |
|                        | KRC120S      |              | $V_O=0.3V, I_O=2mA$       | -    | 2    | 3    |      |
|                        | KRC121S      |              | $V_O=0.3V, I_O=2mA$       | -    | 3.9  | 5    |      |
|                        | KRC122S      |              | $V_O=0.3V, I_O=1mA$       | -    | 1.64 | 3    |      |
| Input Voltage (OFF)    | KRC116S      | $V_{I(OFF)}$ | $V_{CC}=5V, I_O=100\mu A$ | 0.3  | 0.63 | -    | V    |
|                        | KRC117S      |              |                           | 0.5  | 1.15 | -    |      |
|                        | KRC118S      |              |                           | 0.3  | 0.67 | -    |      |
|                        | KRC119S      |              |                           | 0.3  | 0.82 | -    |      |
|                        | KRC120S      |              |                           | 0.8  | 1.68 | -    |      |
|                        | KRC121S      |              |                           | 1    | 3.09 | -    |      |
|                        | KRC122S      |              |                           | 0.5  | 1.17 | -    |      |
| Transition Frequency   | KRC116S 122S | $f_T^*$      | $V_O=10V, I_O=5mA$        | -    | 250  | -    | MHz  |
| Input Current          | KRC116S      | $I_I$        | $V_I=5V$                  | -    | -    | 7.2  | mA   |
|                        | KRC117S      |              |                           | -    | -    | 3.8  |      |
|                        | KRC118S      |              |                           | -    | -    | 3.8  |      |
|                        | KRC119S      |              |                           | -    | -    | 1.8  |      |
|                        | KRC120S      |              |                           | -    | -    | 0.88 |      |
|                        | KRC121S      |              |                           | -    | -    | 0.16 |      |
|                        | KRC122S      |              |                           | -    | -    | 0.15 |      |
| Input Resistor         | KRC116S      | R1           | -                         | 0.7  | 1    | 1.3  | k    |
|                        | KRC117S      |              |                           | 1.54 | 2.2  | 2.86 |      |
|                        | KRC118S      |              |                           | 1.54 | 2.2  | 2.86 |      |
|                        | KRC119S      |              |                           | 3.29 | 4.7  | 6.11 |      |
|                        | KRC120S      |              |                           | 7    | 10   | 13   |      |
|                        | KRC121S      |              |                           | 32.9 | 47   | 61.1 |      |
|                        | KRC122S      |              |                           | 70   | 100  | 130  |      |
| Resistor Ratio         | KRC116S      | R2/R1        | -                         | 8    | 10   | 12   |      |
|                        | KRC117S      |              |                           | 0.8  | 1.0  | 1.2  |      |
|                        | KRC118S      |              |                           | 3.6  | 4.5  | 5.5  |      |
|                        | KRC119S      |              |                           | 1.7  | 2.1  | 2.6  |      |
|                        | KRC120S      |              |                           | 0.37 | 0.47 | 0.57 |      |
|                        | KRC121S      |              |                           | 0.17 | 0.21 | 0.26 |      |
|                        | KRC122S      |              |                           | 0.8  | 1.0  | 1.2  |      |

Note : \* Characteristic of Transistor Only.

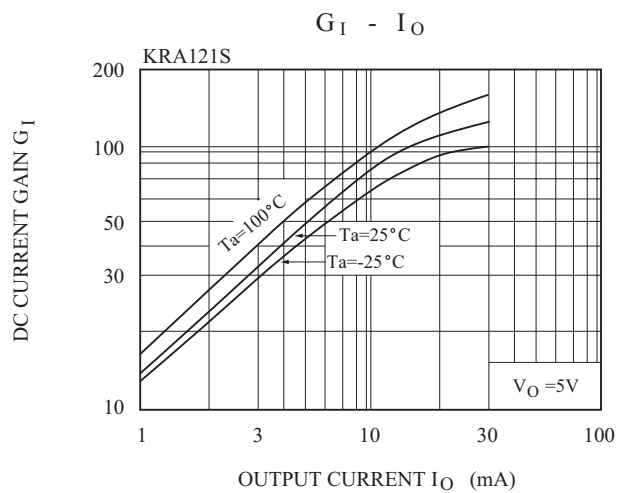
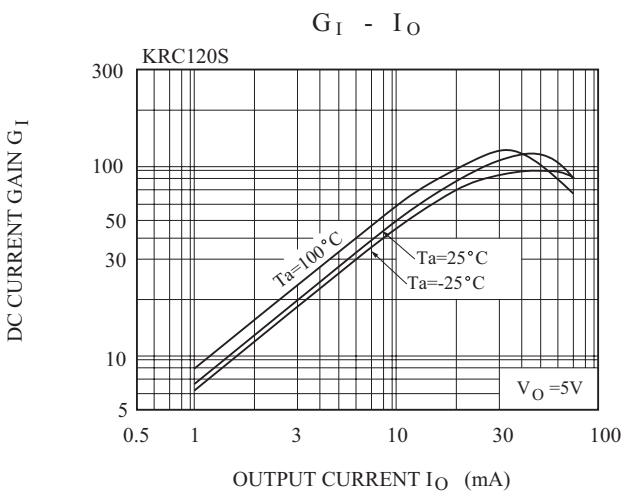
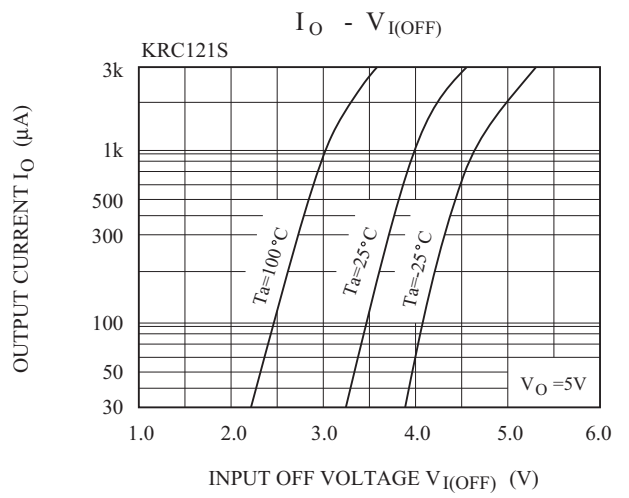
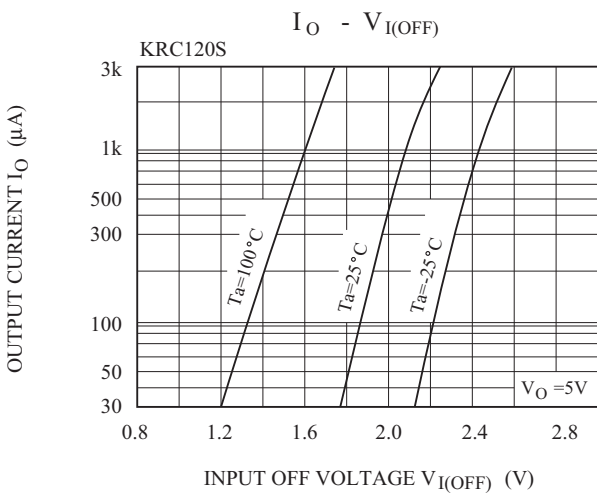
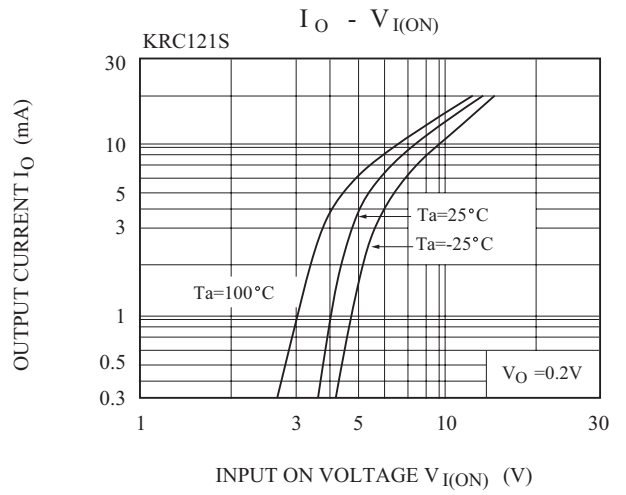
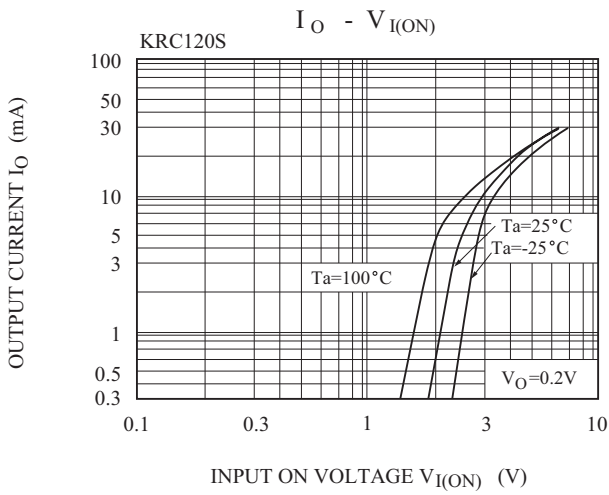
# KRC116S~KRC122S



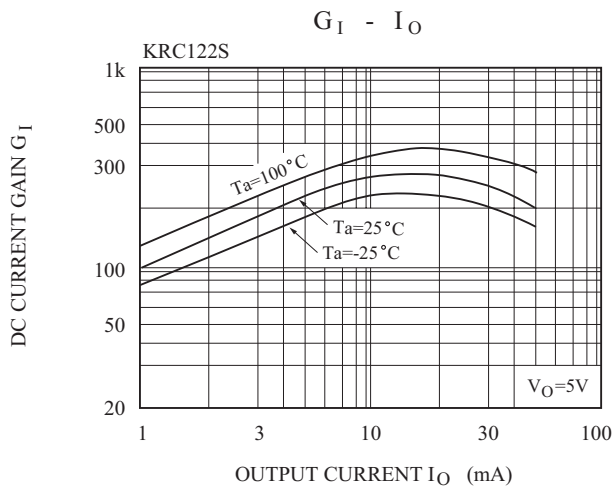
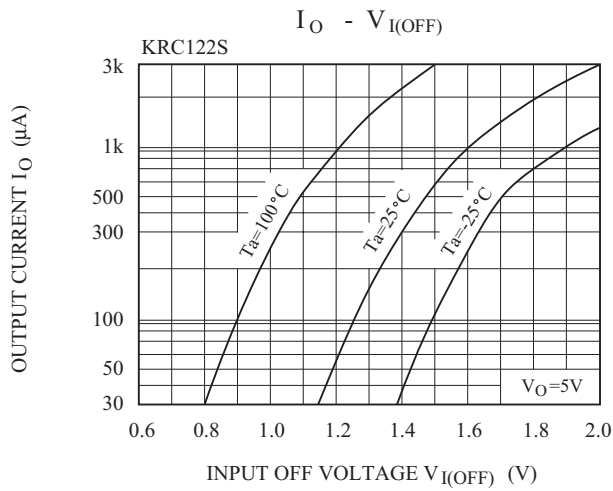
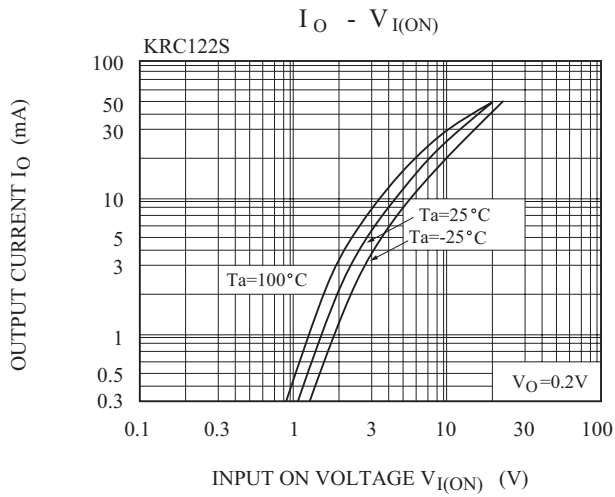
# KRC116S~KRC122S



# KRC116S~KRC122S



# KRC116S~KRC122S



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