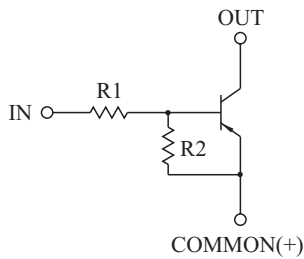


SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION

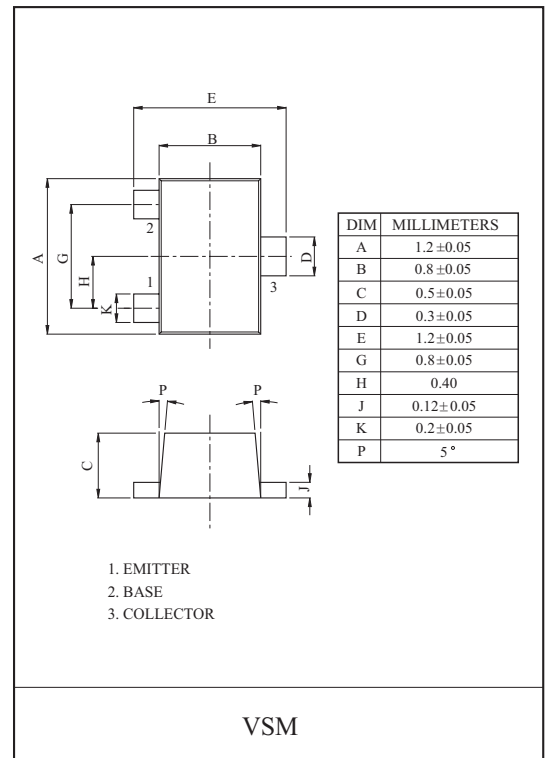
FEATURES

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

EQUIVALENT CIRCUIT



| TYPE NO. | R1(k) | R2(k) |
|----------|--------|--------|
| KRA316V | 1 | 10 |
| KRA317V | 2.2 | 2.2 |
| KRA318V | 2.2 | 10 |
| KRA319V | 4.7 | 10 |
| KRA320V | 10 | 4.7 |
| KRA321V | 47 | 10 |
| KRA322V | 100 | 100 |



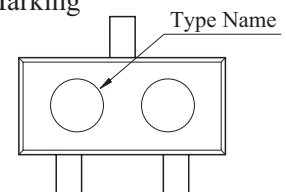
MAXIMUM RATING (Ta=25)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---------------------------|--------------|-----------|---------|------|
| Output Voltage | KRA316V 322V | V_O | -50 | V |
| Input Voltage | KRA316V | V_I | -10, 5 | V |
| | KRA317V | | -12, 10 | |
| | KRA318V | | -12, 5 | |
| | KRA319V | | -20, 7 | |
| | KRA320V | | -30, 10 | |
| | KRA321V | | -40, 15 | |
| | KRA322V | | -40, 10 | |
| Output Current | KRA316V 322V | I_O | -100 | mA |
| Power Dissipation | | P_D | 100 | mW |
| Junction Temperature | | T_j | -55~150 | |
| Storage Temperature Range | | T_{stg} | -55~150 | |

MARK SPEC

| TYPE | KRA316V | KRA317V | KRA318V | KRA319V | KRA320V | KRA321V | KRA322V |
|------|---------|---------|---------|---------|---------|---------|---------|
| MARK | P2 | P4 | P5 | P6 | P7 | P8 | P9 |

Marking



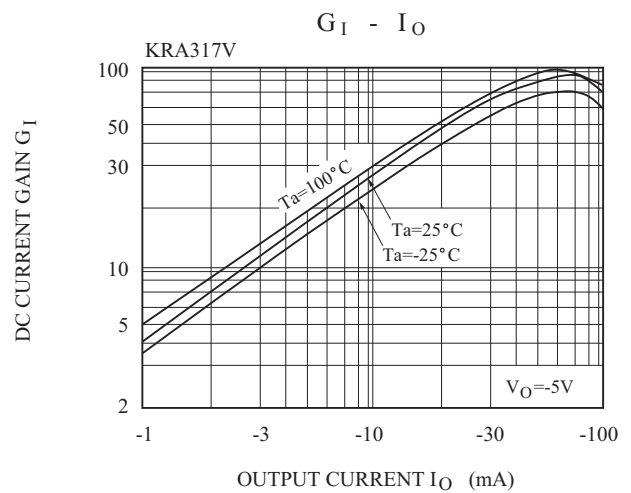
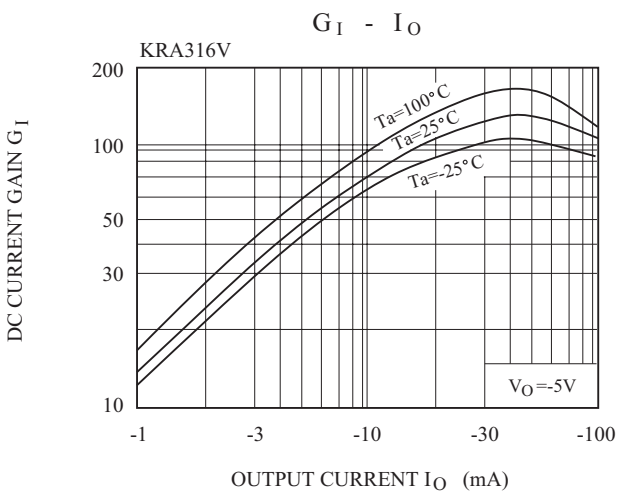
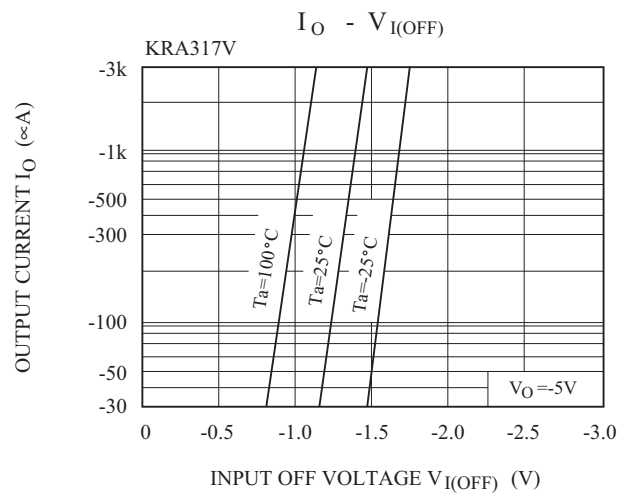
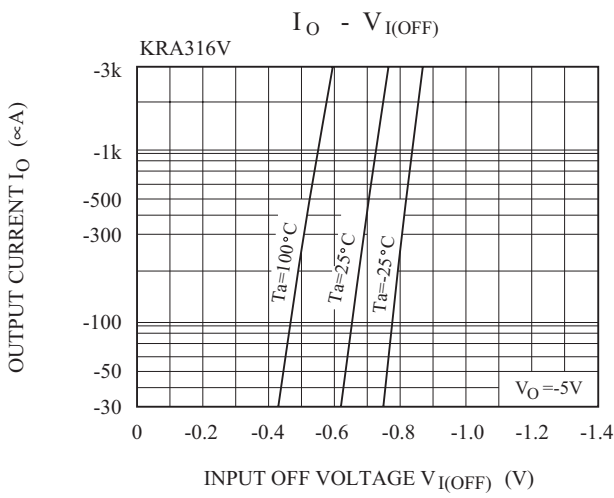
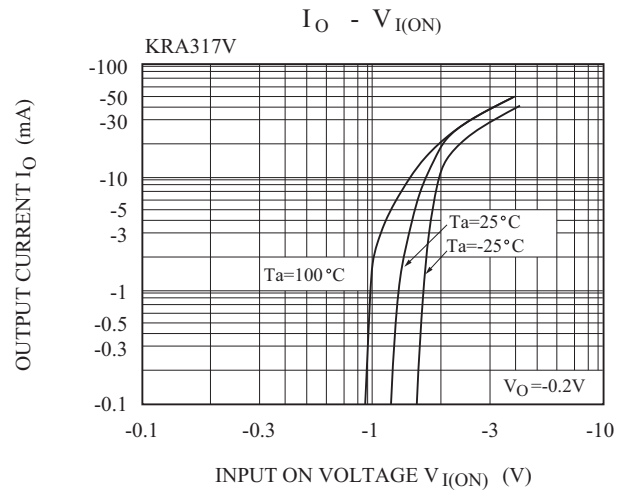
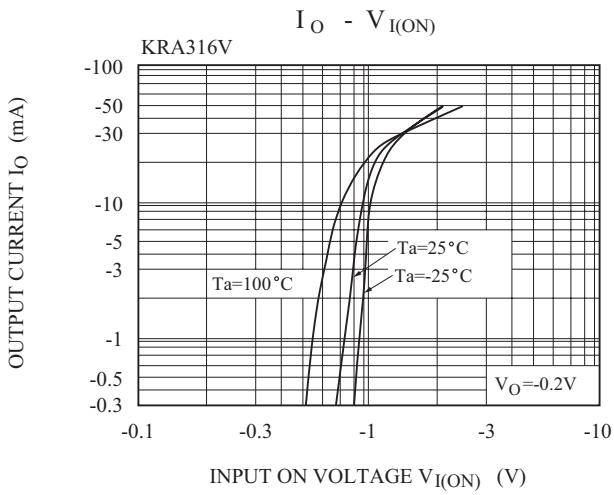
KRA316V~KRA322V

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

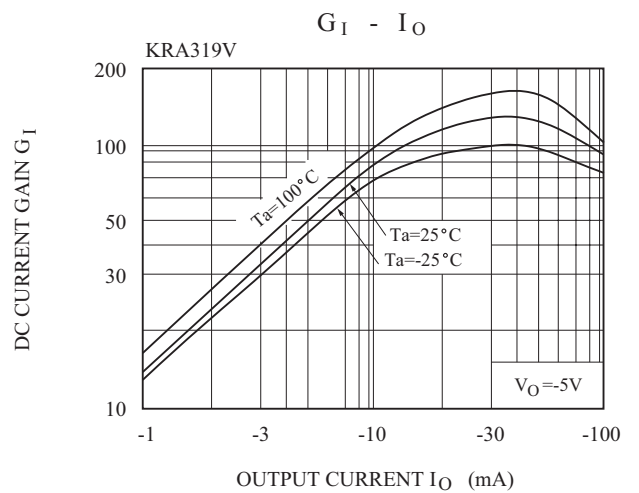
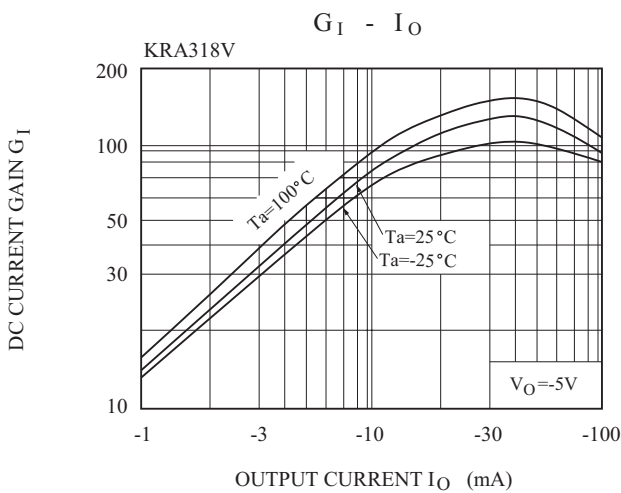
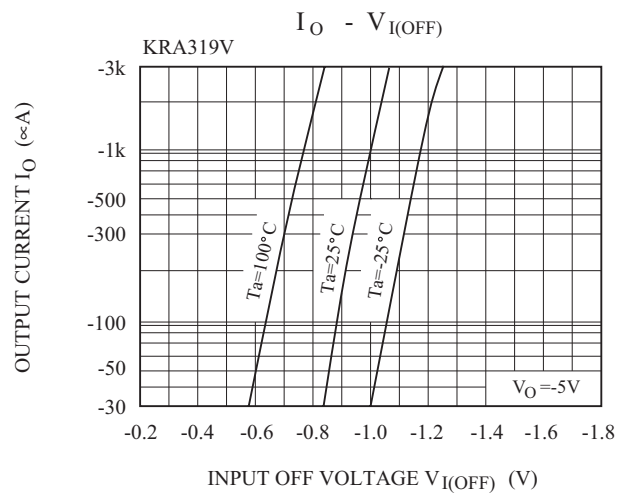
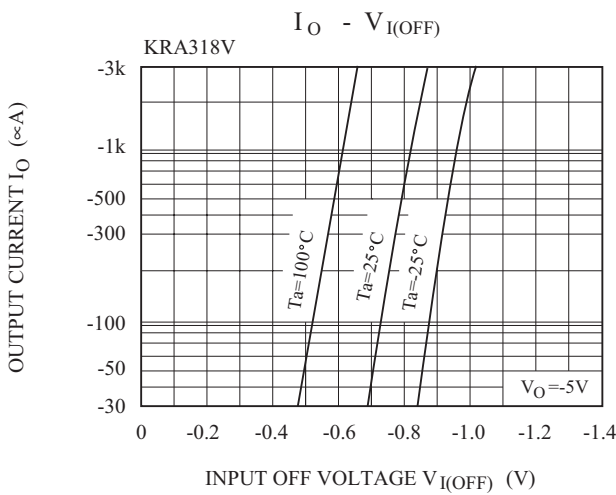
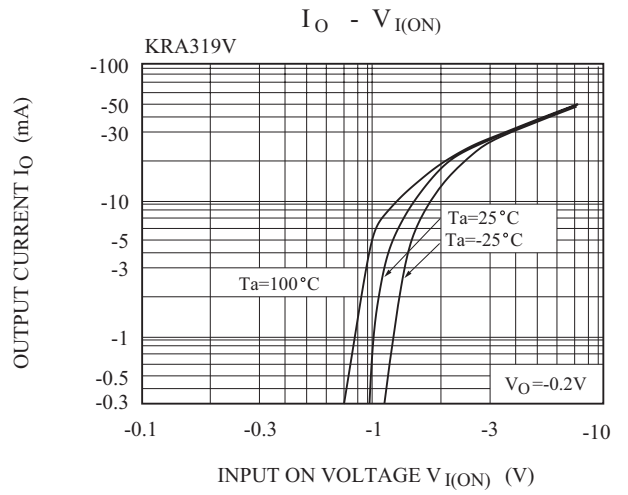
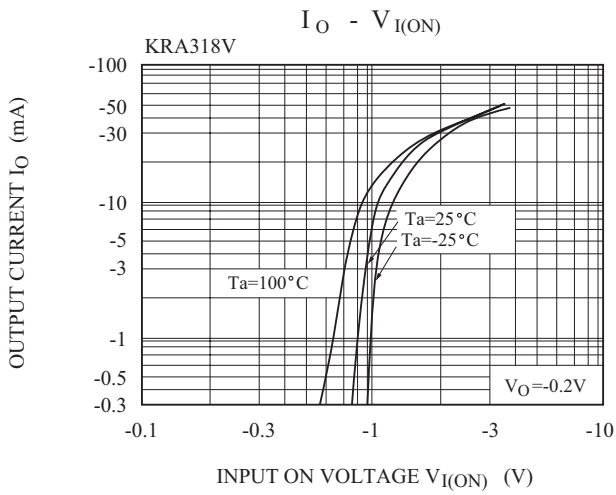
| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|------------------------|--------------|--------------|-----------------------------|------|-------|-------|------|
| Output Cut-off Current | KRA316V 322V | $I_{O(OFF)}$ | $V_O=-50V, V_I=0$ | - | - | -500 | nA |
| DC Current Gain | KRA316V | G_I | $V_O=-5V, I_O=-5mA$ | 33 | - | - | |
| | KRA317V | | $V_O=-5V, I_O=-20mA$ | 20 | - | - | |
| | KRA318V | | $V_O=-5V, I_O=-10mA$ | 33 | - | - | |
| | KRA319V | | $V_O=-5V, I_O=-10mA$ | 30 | - | - | |
| | KRA320V | | $V_O=-5V, I_O=-10mA$ | 24 | - | - | |
| | KRA321V | | $V_O=-5V, I_O=-5mA$ | 33 | - | - | |
| | KRA322V | | $V_O=-5V, I_O=-5mA$ | 62 | - | - | |
| Output Voltage | KRA316V | $V_{O(ON)}$ | $I_O=-10mA, I_I=-0.5mA$ | - | - | -0.3 | V |
| | KRA317V | | $I_O=-10mA, I_I=-0.5mA$ | - | -0.1 | -0.3 | |
| | KRA318V | | $I_O=-10mA, I_I=-0.5mA$ | - | - | -0.3 | |
| | KRA319V | | $I_O=-10mA, I_I=-0.5mA$ | - | -0.1 | -0.3 | |
| | KRA320V | | $I_O=-10mA, I_I=-0.5mA$ | - | -0.1 | -0.3 | |
| | KRA321V | | $I_O=-10mA, I_I=-0.5mA$ | - | -0.1 | -0.3 | |
| | KRA322V | | $I_O=-5mA, I_I=-0.25mA$ | - | -0.1 | -0.3 | |
| Input Voltage (ON) | KRA316V | $V_{I(ON)}$ | $V_O=-0.3V, I_O=-20mA$ | - | -0.98 | -3 | V |
| | KRA317V | | $V_O=-0.3V, I_O=-20mA$ | - | -1.83 | -3 | |
| | KRA318V | | $V_O=-0.3V, I_O=-20mA$ | - | -1.22 | -3 | |
| | KRA319V | | $V_O=-0.3V, I_O=-20mA$ | - | -1.76 | -2.5 | |
| | KRA320V | | $V_O=-0.3V, I_O=-2mA$ | - | -2 | -3 | |
| | KRA321V | | $V_O=-0.3V, I_O=-2mA$ | - | -3.9 | -5 | |
| | KRA322V | | $V_O=-0.3V, I_O=-1mA$ | - | -1.64 | -3 | |
| Input Voltage (OFF) | KRA316V | $V_{I(OFF)}$ | $V_{CC}=-5V, I_O=-100\mu A$ | -0.3 | -0.63 | - | V |
| | KRA317V | | | -0.5 | -1.15 | - | |
| | KRA318V | | | -0.3 | -0.67 | - | |
| | KRA319V | | | -0.3 | -0.82 | - | |
| | KRA320V | | | -0.8 | -1.68 | - | |
| | KRA321V | | | -1 | -3.09 | - | |
| | KRA322V | | | -0.5 | -1.17 | - | |
| Transition Frequency | KRA316V 322V | f_T^* | $V_O=-10V, I_O=-5mA$ | - | 250 | - | MHz |
| Input Current | KRA316V | I_I | $V_I=-5V$ | - | - | -7.2 | mA |
| | KRA317V | | | - | - | -3.8 | |
| | KRA318V | | | - | - | -3.8 | |
| | KRA319V | | | - | - | -1.8 | |
| | KRA320V | | | - | - | -0.88 | |
| | KRA321V | | | - | - | -0.16 | |
| | KRA322V | | | - | - | -0.15 | |
| Input Resistor | KRA316V | R1 | - | 0.7 | 1 | 1.3 | k |
| | KRA317V | | | 1.54 | 2.2 | 2.86 | |
| | KRA318V | | | 1.54 | 2.2 | 2.86 | |
| | KRA319V | | | 3.29 | 4.7 | 6.11 | |
| | KRA320V | | | 7 | 10 | 13 | |
| | KRA321V | | | 32.9 | 47 | 61.1 | |
| | KRA322V | | | 70 | 100 | 130 | |
| Resistor Ratio | KRA316V | R2/R1 | - | 8 | 10 | 12 | |
| | KRA317V | | | 0.8 | 1.0 | 1.2 | |
| | KRA318V | | | 3.6 | 4.5 | 5.5 | |
| | KRA319V | | | 1.7 | 2.1 | 2.6 | |
| | KRA320V | | | 0.37 | 0.47 | 0.57 | |
| | KRA321V | | | 0.17 | 0.21 | 0.26 | |
| | KRA322V | | | 0.8 | 1.0 | 1.2 | |

Note : * Characteristic of Transistor Only.

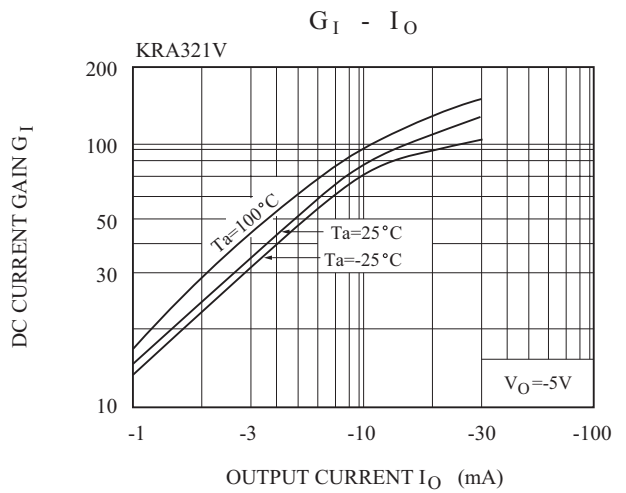
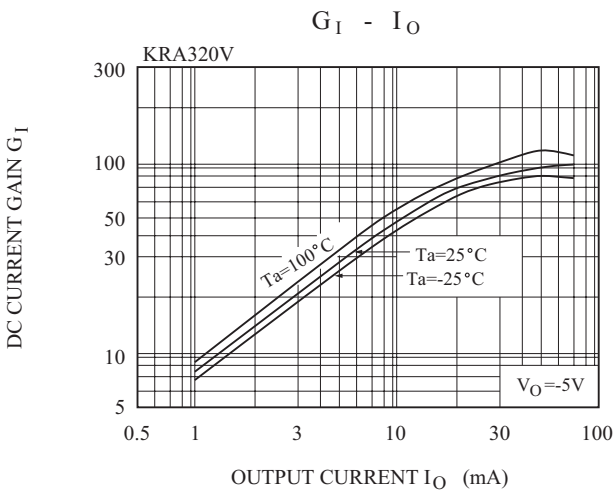
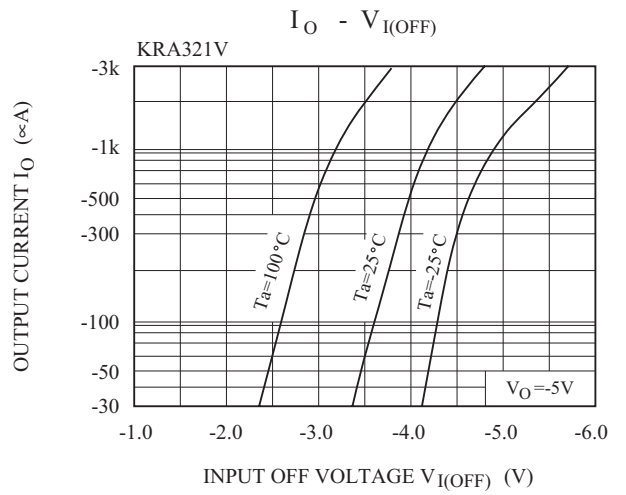
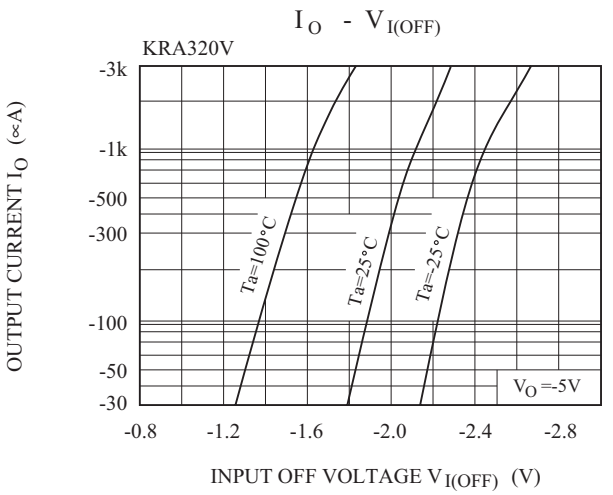
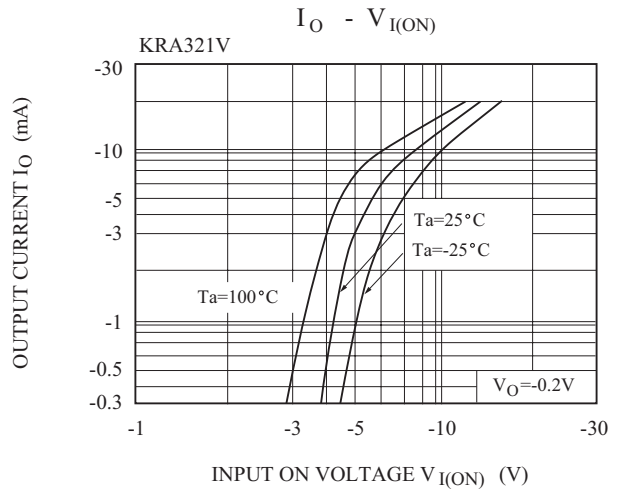
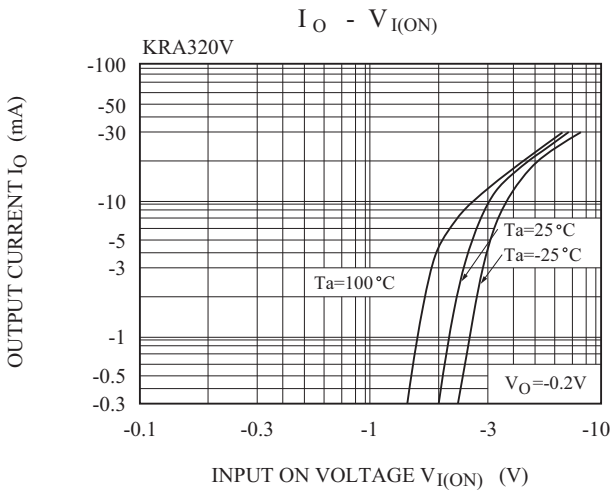
KRA316V~KRA322V



KRA316V~KRA322V



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KRA316V~KRA322V

