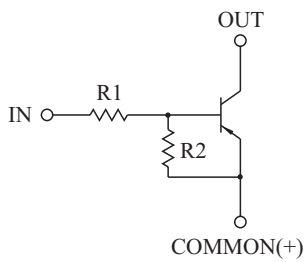


**SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.**

FEATURES

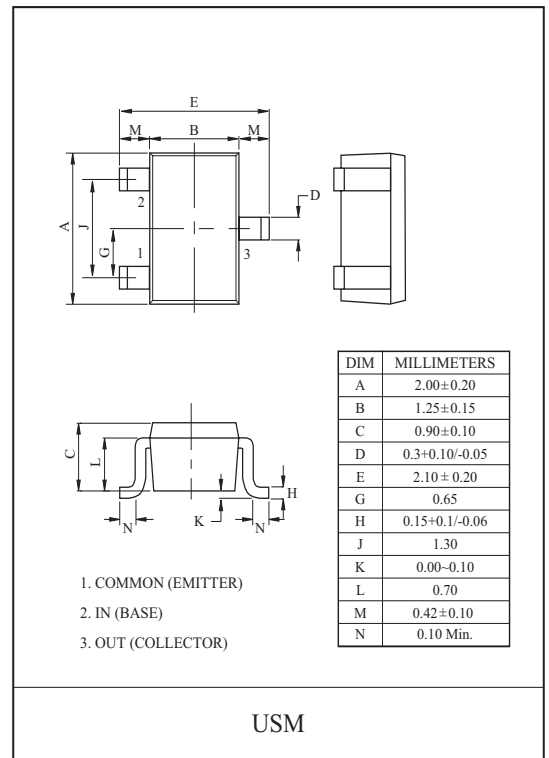
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- High Packing Density.
- Suffix U : Qualified to AEC-Q101.
ex) KRA301-RTK/HU

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

| TYPE NO. | R1(k Ω) | R2(k Ω) |
|----------|-----------------|-----------------|
| KRA301 | 4.7 | 4.7 |
| KRA302 | 10 | 10 |
| KRA303 | 22 | 22 |
| KRA304 | 47 | 47 |
| KRA305 | 2.2 | 47 |
| KRA306 | 4.7 | 47 |

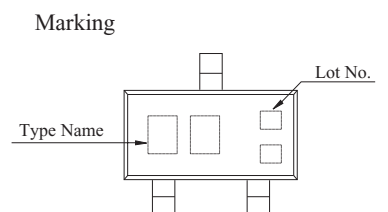


MAXIMUM RATING (Ta=25 $^{\circ}$ C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---------------------------|------------|-----------|---------|------|
| Output Voltage | KRA301 306 | V_O | -50 | V |
| Input Voltage | KRA301 | V_I | -20, 10 | V |
| | KRA302 | | -30, 10 | |
| | KRA303 | | -40, 10 | |
| | KRA304 | | -40, 10 | |
| | KRA305 | | -12, 5 | |
| | KRA306 | | -20, 5 | |
| Output Current | KRA301 306 | 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 | KRA301 | KRA302 | KRA303 | KRA304 | KRA305 | KRA306 |
|------|--------|--------|--------|--------|--------|--------|
| MARK | PA | PB | PC | PD | PE | PF |



KRA301~KRA306

ELECTRICAL CHARACTERISTICS (Ta=25)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|------------------------|------------|--------------|-------------------------|------|-------|-------|------|
| Output Cut-off Current | KRA301 306 | $I_{O(OFF)}$ | $V_O=-50V, V_I=0$ | - | - | -500 | nA |
| DC Current Gain | KRA301 | G_I | $V_O=-5V, I_O=-10mA$ | 30 | 55 | - | |
| | KRA302 | | | 50 | 80 | - | |
| | KRA303 | | | 70 | 120 | - | |
| | KRA304 | | | 80 | 200 | - | |
| | KRA305 | | | 80 | 200 | - | |
| | KRA306 | | | 80 | 200 | - | |
| Output Voltage | KRA301 306 | $V_{O(ON)}$ | $I_O=-10mA, I_I=-0.5mA$ | - | -0.1 | -0.3 | V |
| Input Voltage (ON) | KRA301 | $V_{I(ON)}$ | $V_O=-0.2V, I_O=-5mA$ | - | -1.5 | -2.0 | V |
| | KRA302 | | | - | -1.8 | -2.4 | |
| | KRA303 | | | - | -2.1 | -3.0 | |
| | KRA304 | | | - | -2.8 | -5.0 | |
| | KRA305 | | | - | -0.8 | -1.1 | |
| | KRA306 | | | - | -0.9 | -1.3 | |
| Input Voltage (OFF) | KRA301 304 | $V_{I(OFF)}$ | $V_O=-5V, I_O=-0.1mA$ | -1.0 | -1.2 | - | V |
| | KRA305 306 | | | -0.5 | -0.65 | - | |
| Transition Frequency | KRA301 306 | f_T^* | $V_O=-10V, I_O=-5mA$ | - | 200 | - | MHz |
| Input Current | KRA301 | I_I | $V_I=-5V$ | - | - | -1.8 | mA |
| | KRA302 | | | - | - | -0.88 | |
| | KRA303 | | | - | - | -0.36 | |
| | KRA304 | | | - | - | -0.18 | |
| | KRA305 | | | - | - | -3.6 | |
| | KRA306 | | | - | - | -1.8 | |
| Input Resistor | KRA301 | R1 | - | 3.29 | 4.7 | 6.11 | k |
| | KRA302 | | | 7 | 10 | 13 | |
| | KRA303 | | | 15.4 | 22 | 28.6 | |
| | KRA304 | | | 32.9 | 47 | 61.1 | |
| | KRA305 | | | 1.54 | 2.2 | 2.86 | |
| | KRA306 | | | 3.29 | 4.7 | 6.11 | |
| Resistor Ratio | KRA301~304 | R2/R1 | - | 0.8 | 1.0 | 1.2 | |
| | KRA305 | | | 17 | 21 | 26 | |
| | KRA306 | | | 8 | 10 | 12 | |

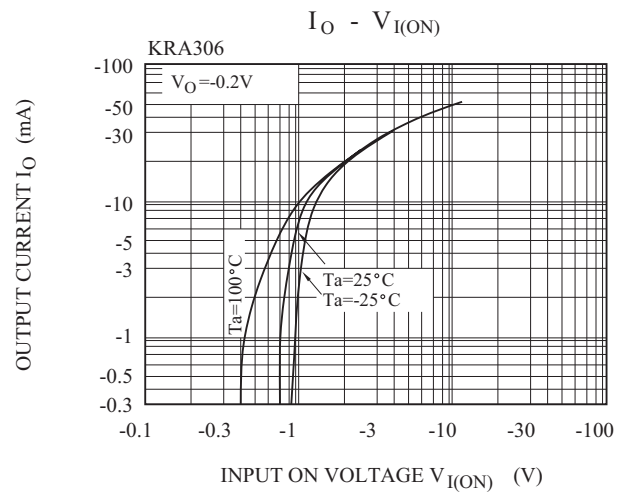
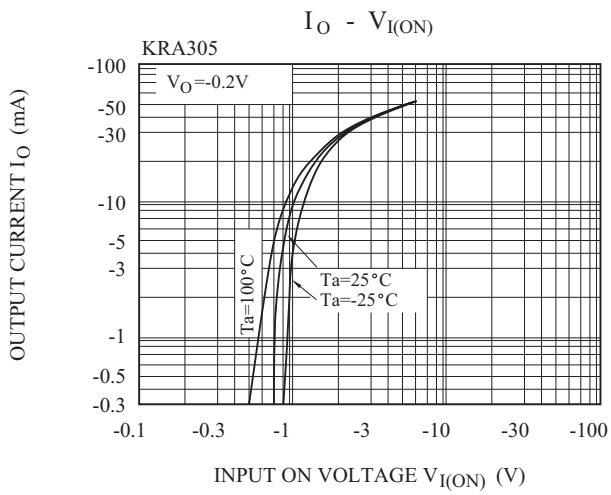
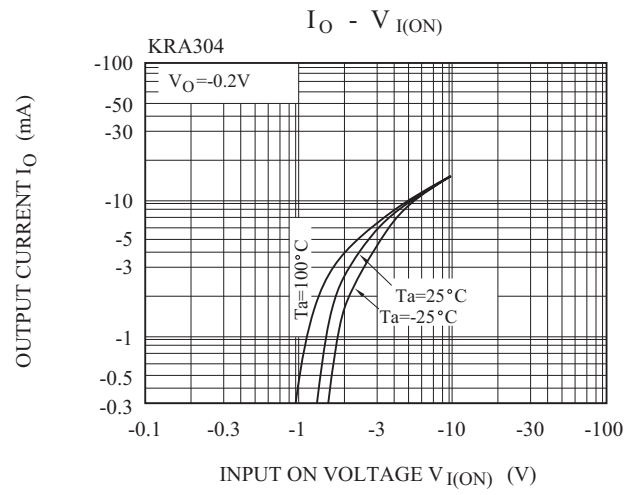
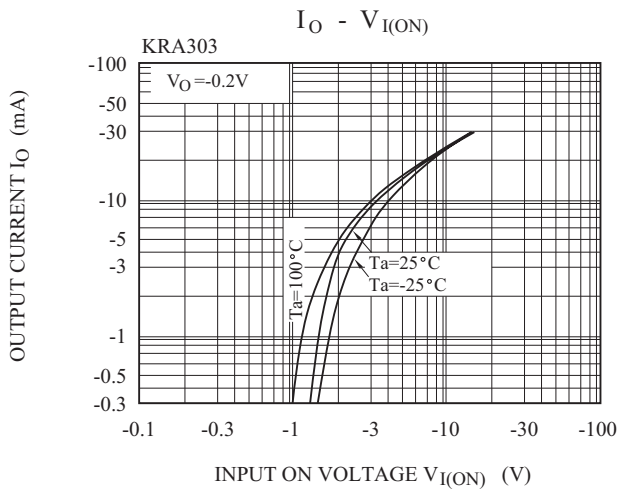
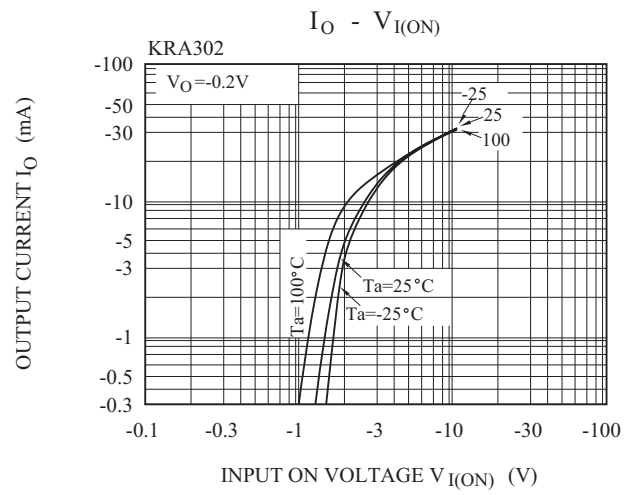
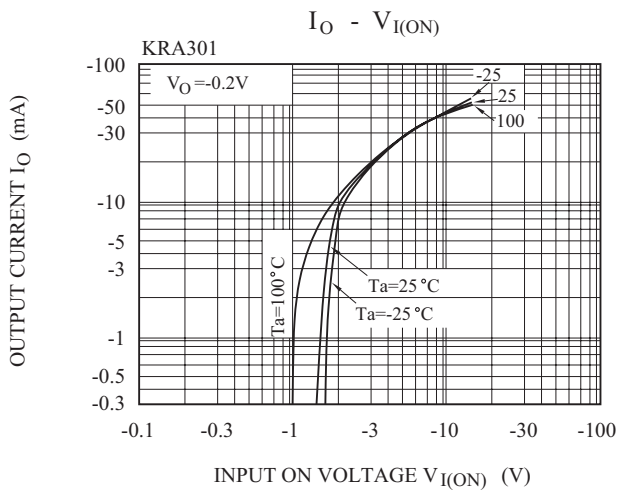
Note : * Characteristic of Transistor Only.

KRA301~KRA306

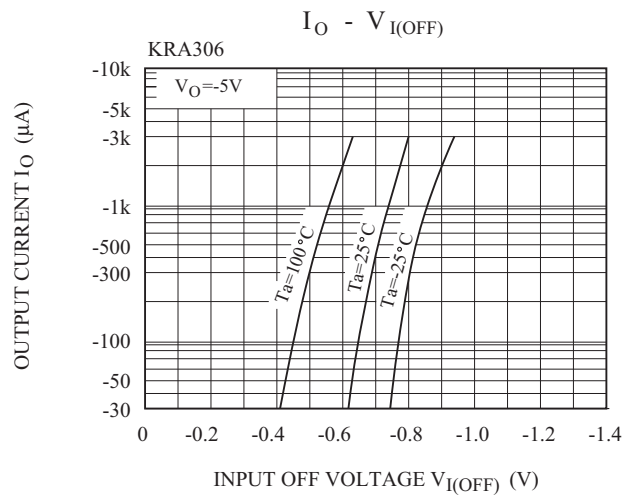
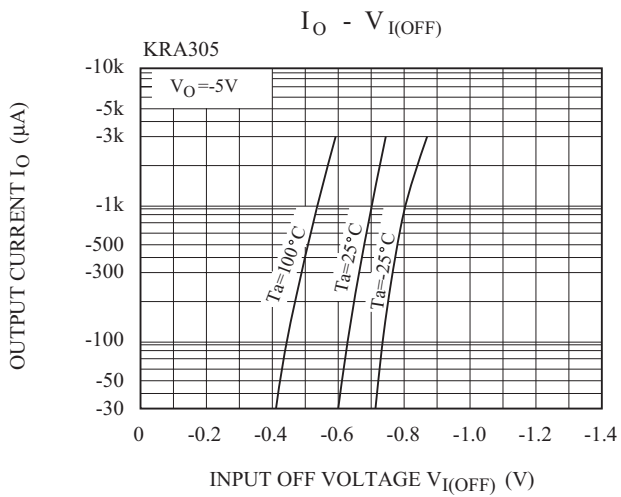
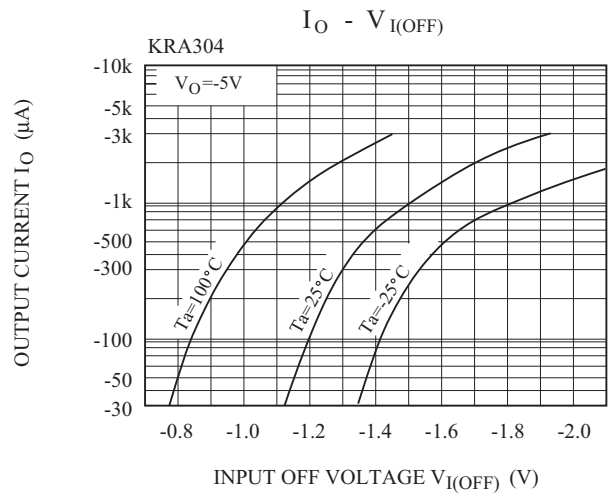
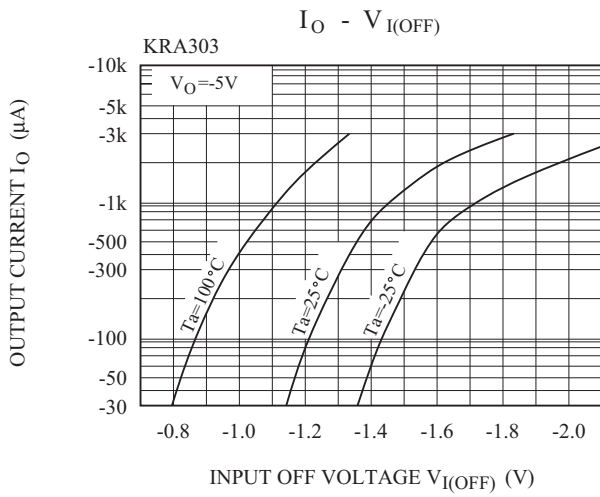
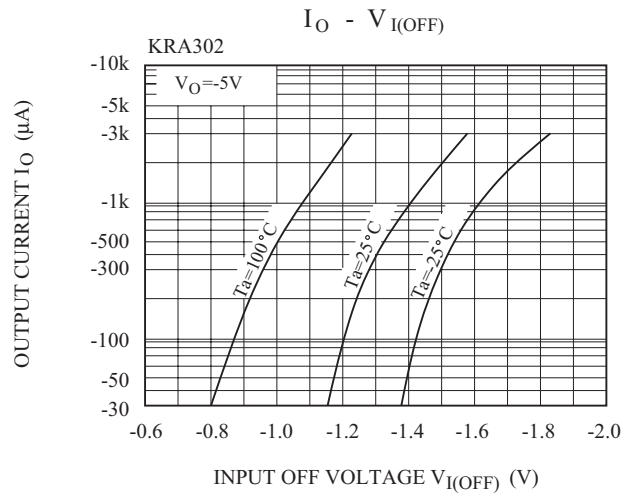
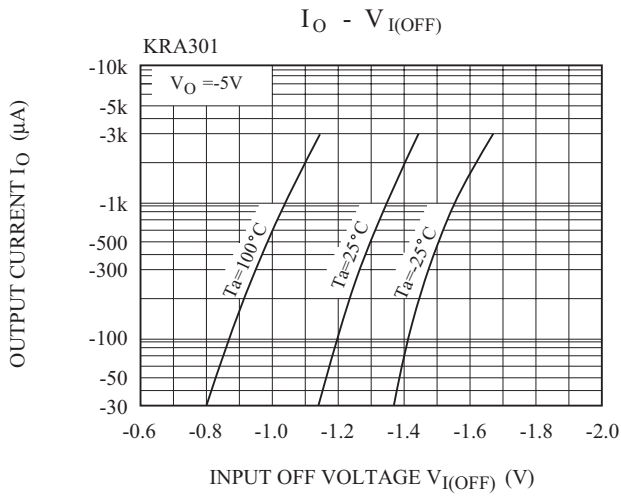
ELECTRICAL CHARACTERISTICS (Ta=25)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------|--------------|--------|---|------|------|------|------|
| Switching Time | Rise Time | KRA301 | V _O =-5V V _{IN} =-5V R _L =1k | - | 0.07 | - | μS |
| | | KRA302 | | - | 0.06 | - | |
| | | KRA303 | | - | 0.2 | - | |
| | | KRA304 | | - | 0.24 | - | |
| | | KRA305 | | - | 0.02 | - | |
| | | KRA306 | | - | 0.07 | - | |
| | Storage Time | KRA301 | | - | 1.1 | - | |
| | | KRA302 | | - | 1.1 | - | |
| | | KRA303 | | - | 1.1 | - | |
| | | KRA304 | | - | 1.1 | - | |
| | | KRA305 | | - | 1.1 | - | |
| | | KRA306 | | - | 1.1 | - | |
| | Fall Time | KRA301 | | - | 0.15 | - | |
| | | KRA302 | | - | 0.24 | - | |
| | | KRA303 | | - | 0.38 | - | |
| | | KRA304 | | - | 0.63 | - | |
| | | KRA305 | | - | 0.1 | - | |
| | | KRA306 | | - | 0.2 | - | |

KRA301~KRA306



KRA301~KRA306



KRA301~KRA306

