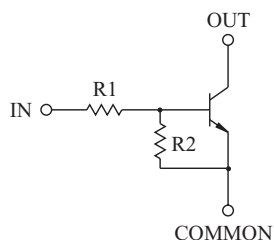


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

### FEATURES

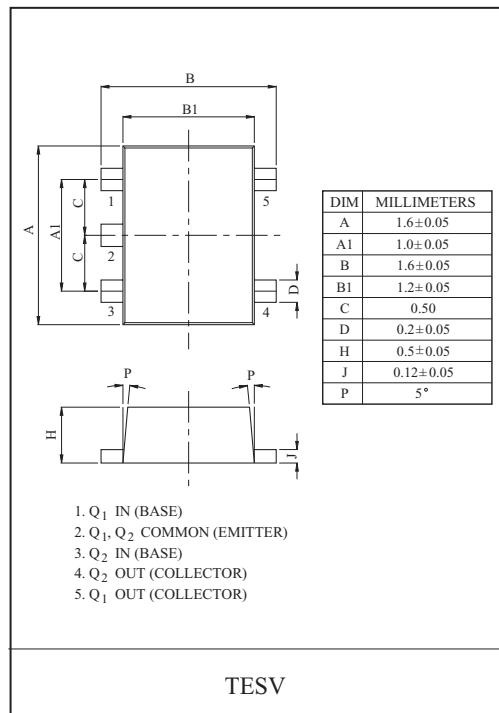
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- High Packing Density.

### EQUIVALENT CIRCUIT

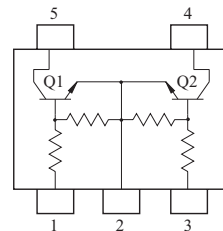


### BIAS RESISTOR VALUES

| TYPE NO. | R1(k Ω) | R2(k Ω) |
|----------|---------|---------|
| KRC657E  | 10      | 47      |
| KRC658E  | 22      | 47      |
| KRC659E  | 47      | 22      |



### EQUIVALENT CIRCUIT (TOP VIEW)



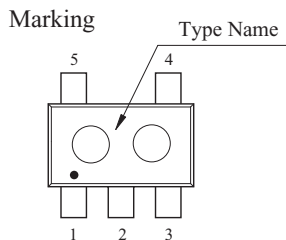
### MAXIMUM RATING (Ta=25 °C)

| CHARACTERISTIC            |              | SYMBOL           | RATING  | UNIT |
|---------------------------|--------------|------------------|---------|------|
| Output Voltage            | KRC657E~659E | V <sub>O</sub>   | 50      | V    |
| Input Voltage             | KRC657E      | V <sub>I</sub>   | 30, -6  | V    |
|                           | KRC658E      |                  | 40, -7  |      |
|                           | KRC659E      |                  | 40, -15 |      |
| Output Current            | KRC657E~659E | I <sub>O</sub>   | 100     | mA   |
| Power Dissipation         |              | P <sub>D</sub> * | 200     | mW   |
| Junction Temperature      |              | T <sub>j</sub>   | 150     | °C   |
| Storage Temperature Range |              | T <sub>stg</sub> | -55~150 | °C   |

\* Total Rating.

### MARK SPEC

| TYPE | KRC657E | KRC658E | KRC659E |
|------|---------|---------|---------|
| MARK | NH      | NI      | NJ      |



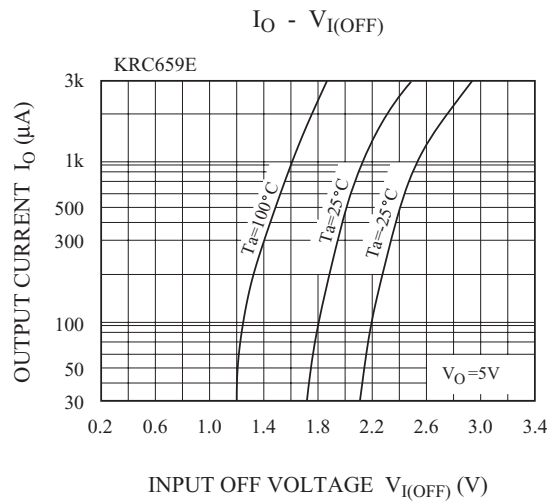
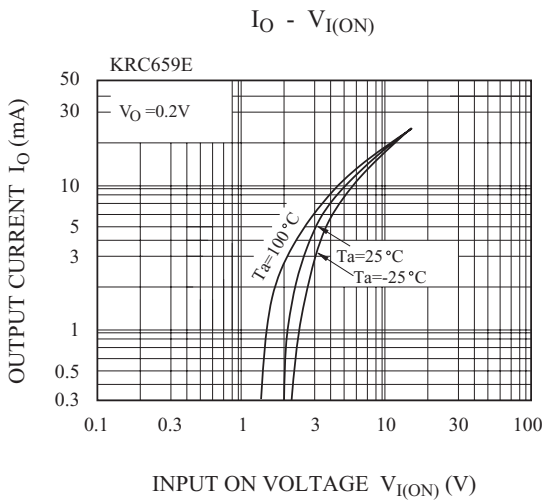
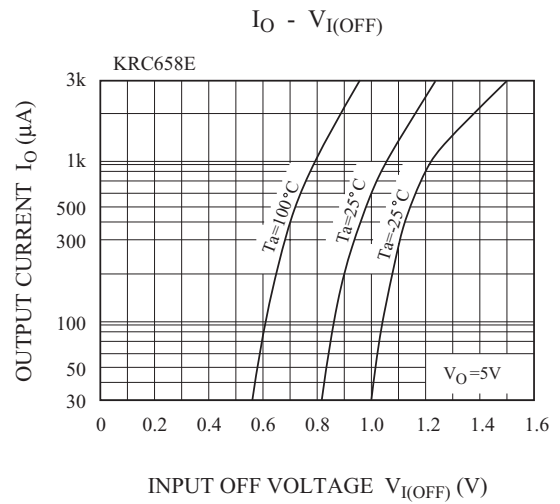
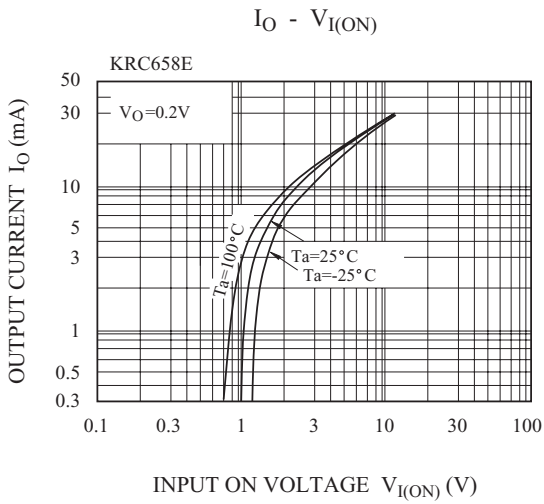
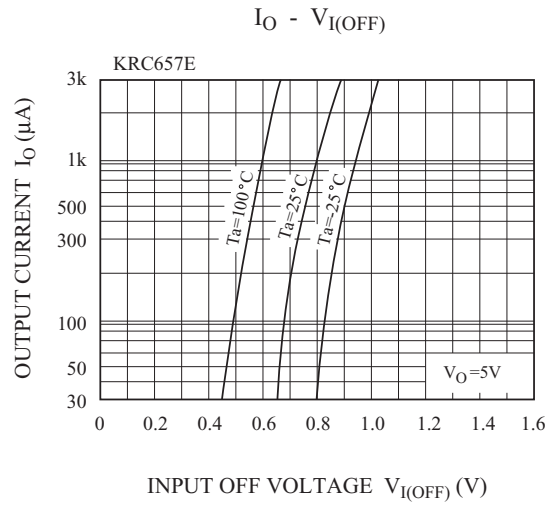
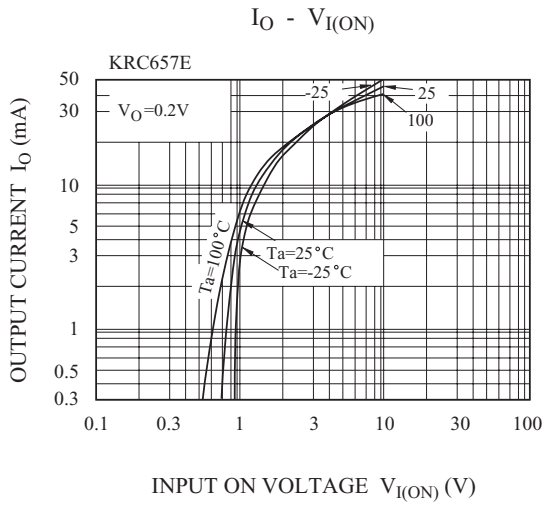
# KRC657E~KRC659E

## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| CHARACTERISTIC         |               | SYMBOL       | TEST CONDITION                         | MIN.      | TYP. | MAX. | UNIT    |   |
|------------------------|---------------|--------------|--|-----------|------|------|---------|---|
| Output Cut-off Current | KRC657E ~659E | $I_{O(OFF)}$ | $V_O=50V, V_I=0$                       | -         | -    | 500  | nA      |   |
| DC Current Gain        | KRC657E       | $G_I$        | $V_O=5V, I_O=10mA$                     | 80        | 150  | -    |         |   |
|                        | KRC658E       |              |  | 80        | 150  | -    |         |   |
|                        | KRC659E       |              |  | 70        | 140  | -    |         |   |
| Output Voltage         | KRC657E ~659E | $V_{O(ON)}$  | $I_O=10mA, I_I=0.5mA$                  | -         | 0.1  | 0.3  | V       |   |
| Input Voltage (ON)     | KRC657E       | $V_{I(ON)}$  | $V_O=0.2V, I_O=5mA$                    | -         | 1.2  | 1.8  | V       |   |
|                        | KRC658E       |              |  | -         | 1.8  | 2.6  |         |   |
|                        | KRC659E       |              |  | -         | 3.0  | 5.8  |         |   |
| Input Voltage (OFF)    | KRC657E       | $V_{I(OFF)}$ | $V_O=5V, I_O=0.1mA$                    | 0.5       | 0.75 | -    | V       |   |
|                        | KRC658E       |              |  | 0.6       | 0.88 | -    |         |   |
|                        | KRC659E       |              |  | 1.5       | 1.82 | -    |         |   |
| Transition Frequency   | KRC657E ~659E | $f_T^*$      | $V_O=10V, I_O=5mA$                     | -         | 200  | -    | MHz     |   |
| Input Current          | KRC657E       | $I_I$        | $V_I=5V$                               | -         | -    | 0.88 | mA      |   |
|                        | KRC658E       |              |  | -         | -    | 0.36 |         |   |
|                        | KRC659E       |              |  | -         | -    | 0.16 |         |   |
| Switching Time         | Rise Time     | KRC657E      | $V_O=5V, V_{IN}=5V$<br>$R_L=1k \Omega$ | -         | 0.05 | -    | $\mu S$ |   |
|                        |               | KRC658E      |  | -         | 0.12 | -    |         |   |
|                        |               | KRC659E      |  | -         | 0.26 | -    |         |   |
|                        | Storage Time  | KRC657E      |  | $t_{stg}$ | -    | 2.0  |         | - |
|                        |               | KRC658E      |  |           | -    | 2.4  |         | - |
|                        |               | KRC659E      |  |           | -    | 1.5  |         | - |
|                        | Fall Time     | KRC657E      |  | $t_f$     | -    | 0.36 |         | - |
|                        |               | KRC658E      |  |           | -    | 0.4  |         | - |
|                        |               | KRC659E      |  |           | -    | 0.41 |         | - |

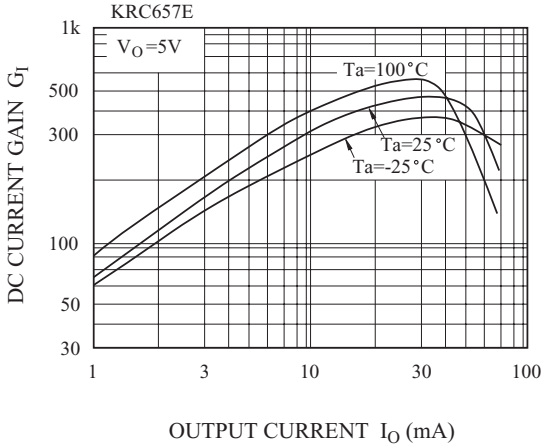
Note : \* Characteristic of Transistor Only.

# KRC657E~KRC659E

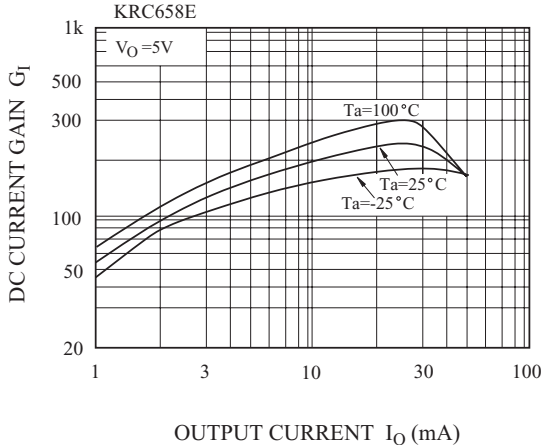


# KRC657E~KRC659E

$G_I - I_O$



$G_I - I_O$



$G_I - I_O$

