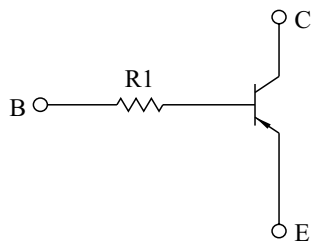


SWITCHING APPLICATION.  
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

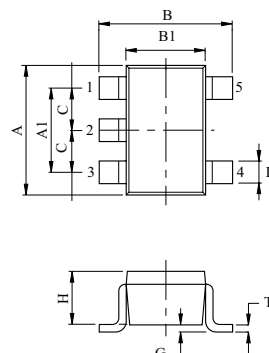
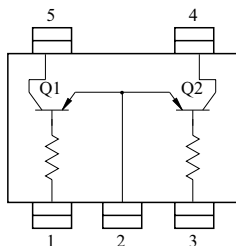
### FEATURES

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

### EQUIVALENT CIRCUIT



### EQUIVALENT CIRCUIT (TOP VIEW)



| DIM | MILLIMETERS    |
|-----|----------------|
| A   | 2.00±0.20      |
| A1  | 1.3±0.1        |
| B   | 2.1±0.1        |
| B1  | 1.25±0.1       |
| C   | 0.65           |
| D   | 0.2+0.10/-0.05 |
| G   | 0-0.1          |
| H   | 0.9±0.1        |
| T   | 0.15+0.1/-0.05 |

1. Q<sub>1</sub> IN (BASE)
2. Q<sub>1</sub>, Q<sub>2</sub> COMMON (EMITTER)
3. Q<sub>2</sub> IN (BASE)
4. Q<sub>2</sub> OUT (COLLECTOR)
5. Q<sub>1</sub> OUT (COLLECTOR)

USV

### MAXIMUM RATING (Ta=25 °C)

| CHARACTERISTIC            | SYMBOL           | RATING | UNIT |
|---------------------------|------------------|--------|------|
| Collector-Base Voltage    | V <sub>CBO</sub> | -50    | V    |
| Collector-Emitter Voltage | V <sub>CEO</sub> | -50    | V    |
| Emitter-Base Voltage      | V <sub>EBO</sub> | -5     | V    |
| Collector Current         | I <sub>C</sub>   | -100   | mA   |

| CHARACTERISTIC              | SYMBOL           | RATING    | UNIT |
|-----------------------------|------------------|-----------|------|
| Collector Power Dissipation | P <sub>C</sub> * | 200       | mW   |
| Junction Temperature        | T <sub>j</sub>   | 150       | °C   |
| Storage TemperatureRange    | T <sub>stg</sub> | -55 ~ 150 | °C   |

\* Total Rating.

### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

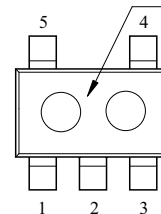
| CHARACTERISTIC                       |         | SYMBOL               | TEST CONDITION                                | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---------|----------------------|-----------------------------------------------|------|------|------|------|
| Collector Cut-off Current            |         | I <sub>CBO</sub>     | V <sub>CB</sub> =-50V, I <sub>E</sub> =0      | -    | -    | -100 | nA   |
| Emitter Cut-off Current              |         | I <sub>EBO</sub>     | V <sub>EB</sub> =-5V, I <sub>C</sub> =0       | -    | -    | -100 | nA   |
| DC Current Gain                      |         | h <sub>FE</sub>      | V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA    | 120  | -    | -    |      |
| Collector-Emitter Saturation Voltage |         | V <sub>CE(sat)</sub> | I <sub>C</sub> =-10mA, I <sub>B</sub> =-0.5mA | -    | -0.1 | -0.3 | V    |
| Transition Frequency                 |         | f <sub>T</sub> *     | V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA   | -    | 250  | -    | MHz  |
| Input Resistor                       | KRA560U | R <sub>i</sub>       |                                               | -    | 4.7  | -    | kΩ   |
|                                      | KRA561U |                      |                                               | -    | 10   | -    |      |
|                                      | KRA562U |                      |                                               | -    | 100  | -    |      |
|                                      | KRA563U |                      |                                               | -    | 22   | -    |      |
|                                      | KRA564U |                      |                                               | -    | 47   | -    |      |

### MARK SPEC

| TYPE | KRA560U | KRA561U | KRA562U | KRA563U | KRA564U |
|------|---------|---------|---------|---------|---------|
| MARK | PK      | PM      | PN      | PO      | PP      |

### Marking

Type Name

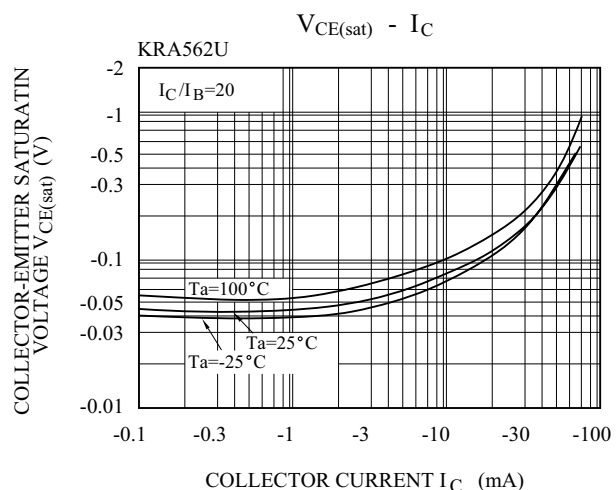
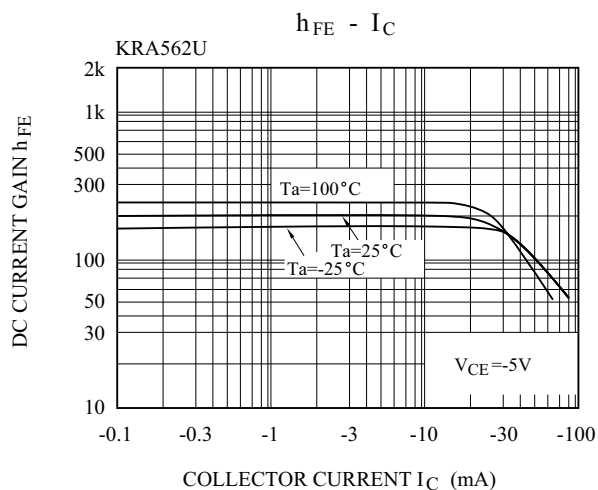
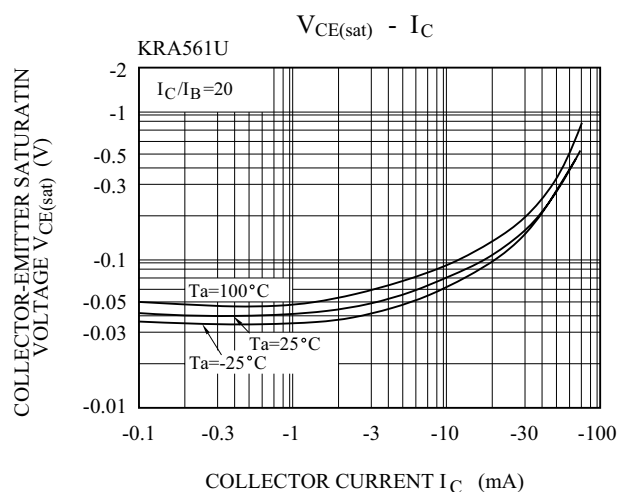
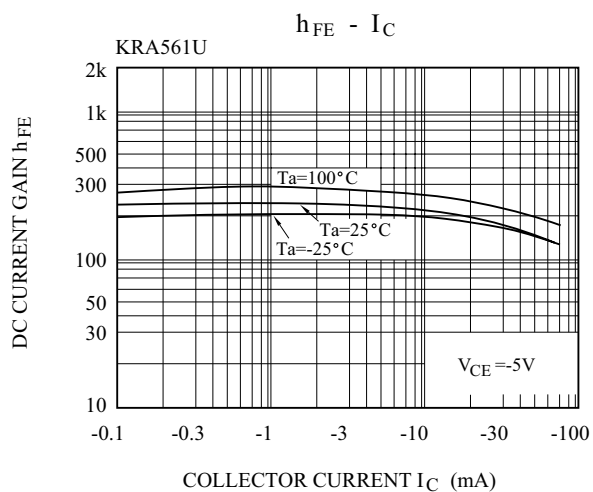
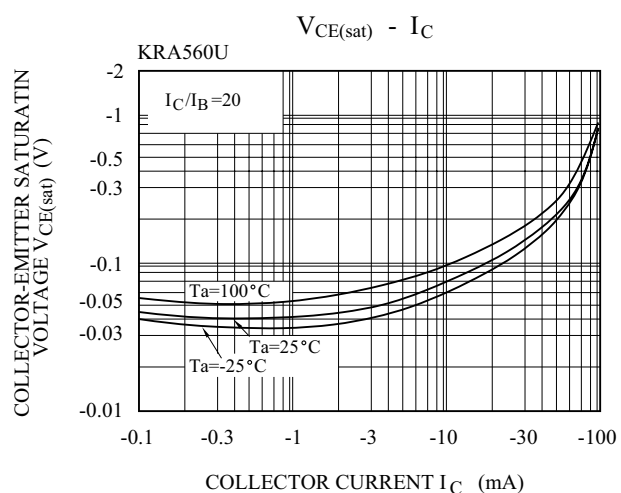
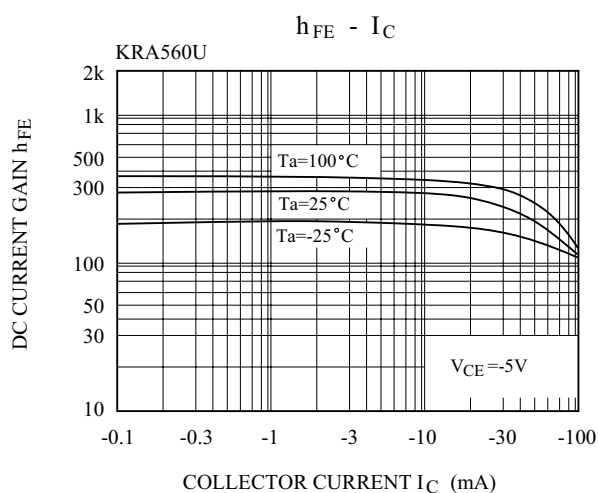


# KRA560U~KRA564U

## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| CHARACTERISTIC |              |         | SYMBOL           | TEST CONDITION                                                      | MIN. | TYP.  | MAX. | UNIT |
|----------------|--------------|---------|------------------|---------------------------------------------------------------------|------|-------|------|------|
| Switching Time | Rise Time    | KRA560U | t <sub>r</sub>   | V <sub>O</sub> =-5V<br>V <sub>IN</sub> =-5V<br>R <sub>L</sub> =1k Ω | -    | 0.2   | -    | μS   |
|                |              | KRA561U |                  |                                                                     | -    | 0.065 | -    |      |
|                |              | KRA562U |                  |                                                                     | -    | 0.4   | -    |      |
|                |              | KRA563U |                  |                                                                     | -    | 0.1   | -    |      |
|                |              | KRA564U |                  |                                                                     | -    | 0.15  | -    |      |
|                | Storage Time | KRA560U | t <sub>stg</sub> |                                                                     | -    | 2.0   | -    |      |
|                |              | KRA561U |                  |                                                                     | -    | 1.7   | -    |      |
|                |              | KRA562U |                  |                                                                     | -    | 3.0   | -    |      |
|                |              | KRA563U |                  |                                                                     | -    | 2.0   | -    |      |
|                |              | KRA564U |                  |                                                                     | -    | 1.5   | -    |      |
|                | Fall Time    | KRA560U | t <sub>f</sub>   |                                                                     | -    | 0.3   | -    |      |
|                |              | KRA561U |                  |                                                                     | -    | 0.3   | -    |      |
|                |              | KRA562U |                  |                                                                     | -    | 1.7   | -    |      |
|                |              | KRA563U |                  |                                                                     | -    | 0.8   | -    |      |
|                |              | KRA564U |                  |                                                                     | -    | 1.5   | -    |      |

# KRA560U~KRA564U



# KRA560U~KRA564U

