# KRC830U~KRC834U

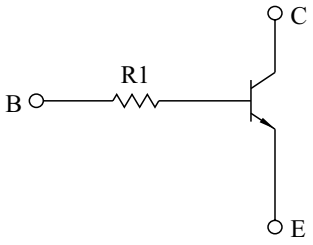
**EPITAXIAL PLANAR NPN TRANSISTOR**

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

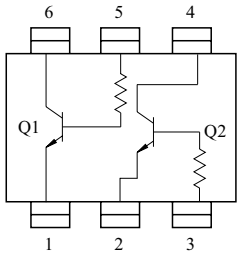
FEATURES

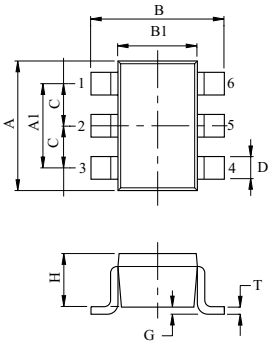
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- High Packing Density.

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. $Q_1$ EMITTER
2. $Q_2$ EMITTER
3. $Q_2$ BASE
4. $Q_2$ COLLECTOR
5. $Q_1$ BASE
6. $Q_1$ COLLECTOR

US6

MAXIMUM RATING (Ta=25℃)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 50 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 100 | mA |

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector Power Dissipation | $P_C$ * | 200 | mW |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55 ~ 150 | ℃ |

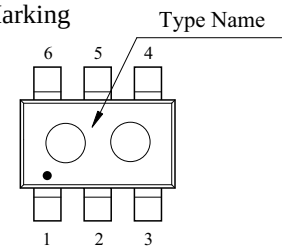
* Total Raing.

ELECTRICAL CHARACTERISTICS (Ta=25℃)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|
| Collector Cut-off Current | | $I_{CBO}$ | $V_{CB}$=50V, $I_E$=0 | - | - | 100 | nA |
| Emitter Cut-off Current | | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | - | - | 100 | nA |
| DC Current Gain | | $h_{FE}$ | $V_{CE}$=5V, $I_C$=1mA | 120 | - | - | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C$=10mA, $I_B$=0.5mA | - | 0.1 | 0.3 | V |
| Transition Frequency | | $f_T$ * | $V_{CE}$=10V, $I_C$=5mA | - | 250 | - | MHz |
| Input Resistor | KRC830U | $R_1$ | | - | 4.7 | - | kΩ |
| | KRC831U | | | - | 10 | - | |
| | KRC832U | | | - | 100 | - | |
| | KRC833U | | | - | 22 | - | |
| | KRC834U | | | - | 47 | - | |

Note : * Characteristic of Transistor Only.

Marking



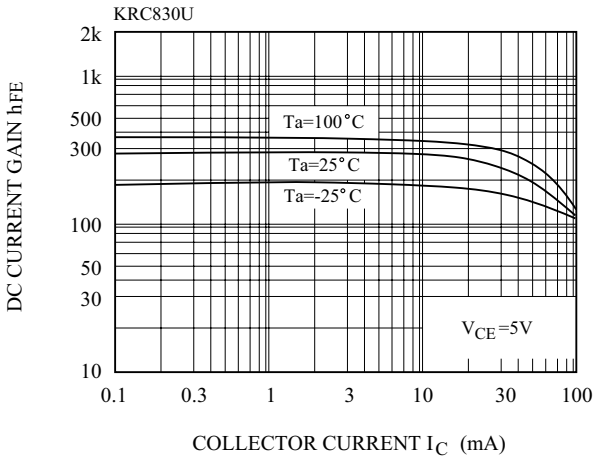

MARK SPEC

| TYPE | KRC830U | KRC831U | KRC832U | KRC833U | KRC834U |
|---|---|---|---|---|---|
| MARK | YK | YM | YN | YO | YP |

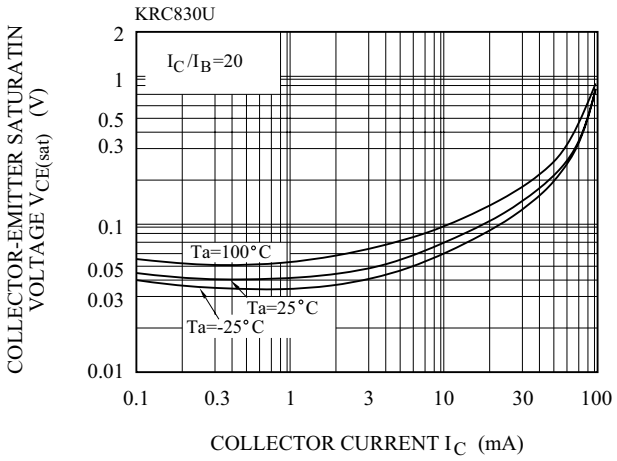
ELECTRICAL CHARACTERISTICS (Ta=25℃)

| CHARACTERISTIC | | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| Switching Time | Rise Time | KRC830U | $t_r$ | $V_O$=5V<br>$V_{IN}$=5V<br>$R_L$=1kΩ | - | 0.025 | - | μS |
| | | KRC831U | | | - | 0.03 | - | |
| | | KRC832U | | | - | 0.3 | - | |
| | | KRC833U | | | - | 0.06 | - | |
| | | KRC834U | | | - | 0.11 | - | |
| | Storage Time | KRC830U | $t_{stg}$ | | - | 3.0 | - | |
| | | KRC831U | | | - | 2.0 | - | |
| | | KRC832U | | | - | 6.0 | - | |
| | | KRC833U | | | - | 4.0 | - | |
| | | KRC834U | | | - | 5.0 | - | |
| | Fall Time | KRC830U | $t_f$ | | - | 0.2 | - | |
| | | KRC831U | | | - | 0.12 | - | |
| | | KRC832U | | | - | 2.0 | - | |
| | | KRC833U | | | - | 0.9 | - | |
| | | KRC834U | | | - | 1.4 | - | |

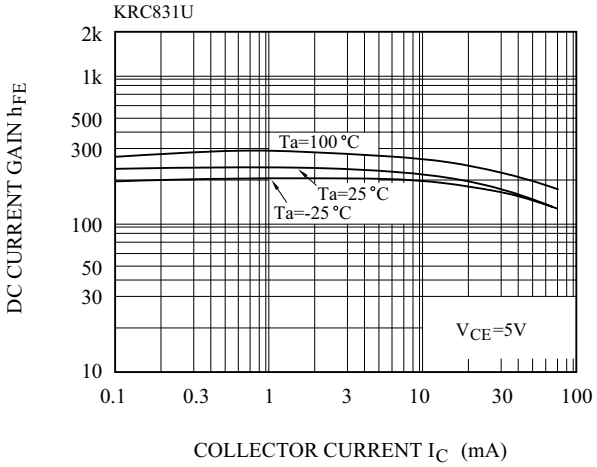
$h_{FE}$ - $I_C$



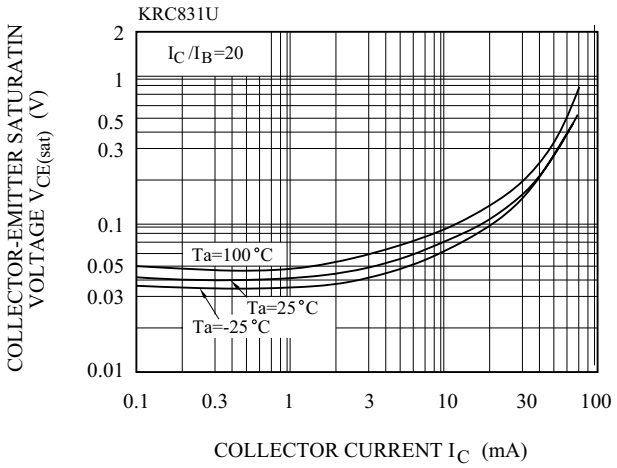

$V_{CE(sat)}$ - $I_C$



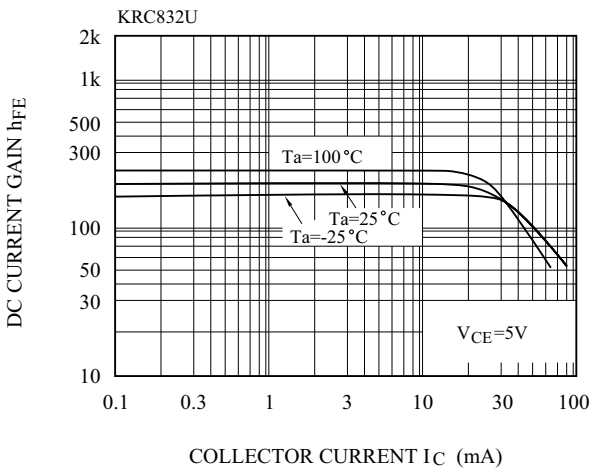

$h_{FE}$ - $I_C$



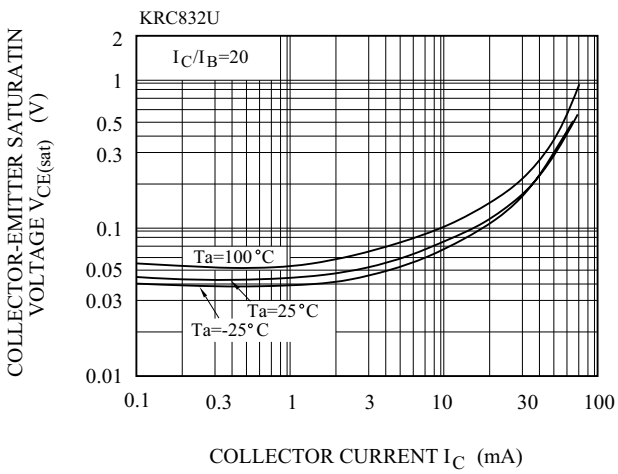

$V_{CE(sat)}$ - $I_C$



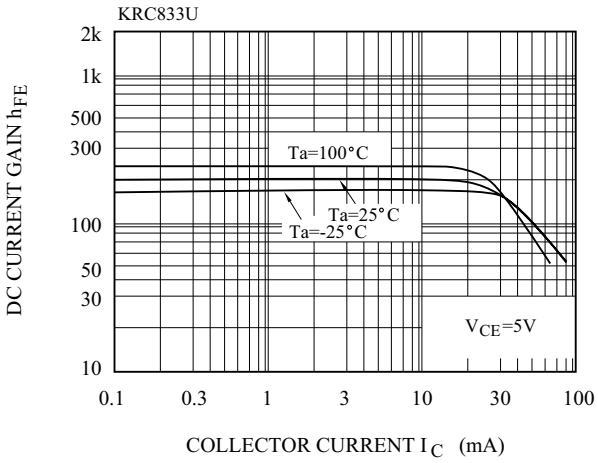

$h_{FE}$ - $I_C$



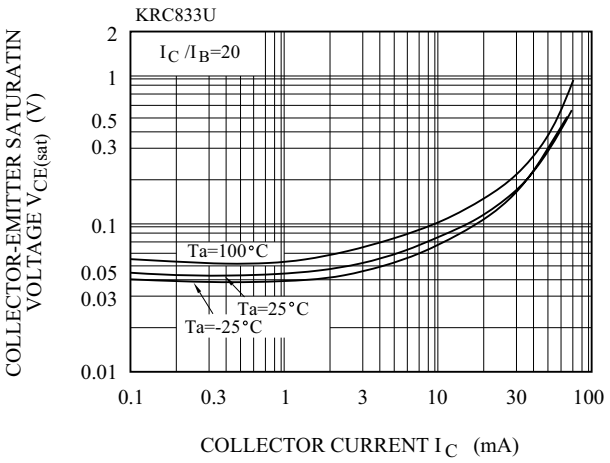

$V_{CE(sat)}$ - $I_C$



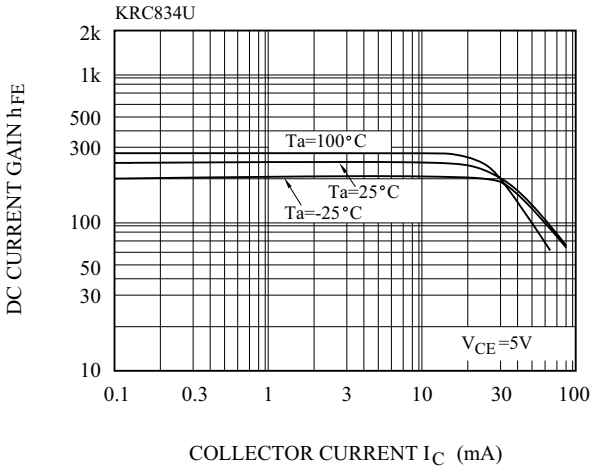
$h_{FE}$ - $I_C$

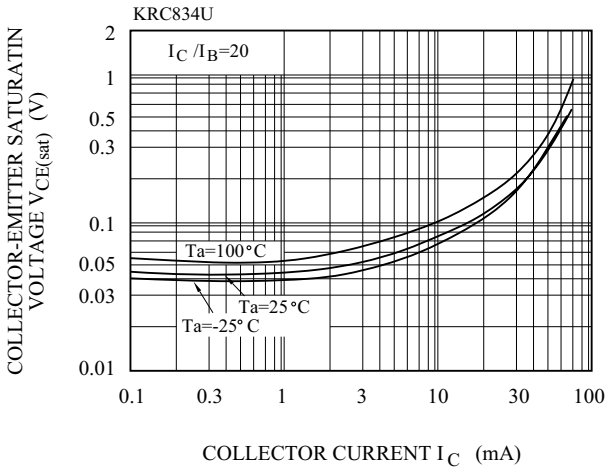



$V_{CE(sat)}$ - $I_C$




$h_{FE}$ - $I_C$




$V_{CE(sat)}$ - $I_C$