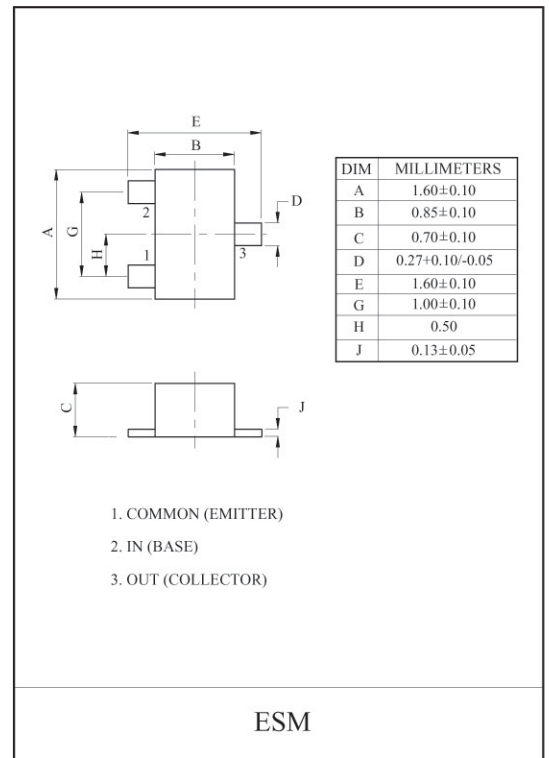
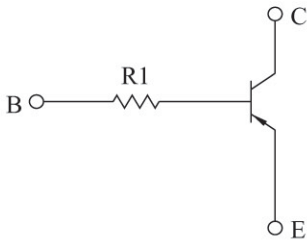


SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES

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

EQUIVALENT CIRCUIT



MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC | S MBOL | 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 | S MBOL | RATING | UNIT |
|-----------------------------|------------------|-----------|------|
| Collector Power Dissipation | P _C | 100 | mW |
| Junction Temperature | T | 150 | °C |
| Storage Temperature Range | T _{stg} | -55 ~ 150 | °C |

ELECTRICAL CHARACTERISTICS (Ta=25°C)

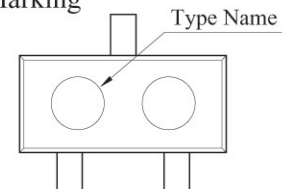
| CHARACTERISTIC | S MBOL | TEST CONDITION | MIN. | T P . | MAX. | UNIT |
|--------------------------------------|----------------------|--|------|-------|------|------|
| Collector Cut-off Current | I _{CBO} | V _{CB} =-50V I _E =0 | - | - | -100 | nA |
| Emitter Cut-off Current | I _{EBO} | V _{EB} =-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 | - | MH |
| Input Resistor | KRA310E | R ₁ | 3.2 | 4.7 | 6.11 | kΩ |
| | KRA311E | | 7 | 10 | 13 | |
| | KRA312E | | 70 | 100 | 130 | |
| | KRA313E | | 15.4 | 22 | 28.6 | |
| | KRA314E | | 32. | 47 | 61.1 | |

Note : Characteristic of Transistor Only.

MARK SPEC

| T PE | KRA310E | KRA311E | KRA312E | KRA313E | KRA314E |
|------|---------|---------|---------|---------|---------|
| MARK | PK | PM | PN | PO | PP |

Marking



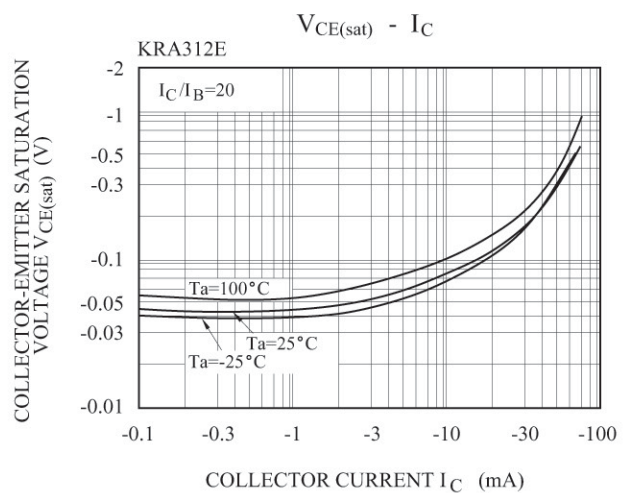
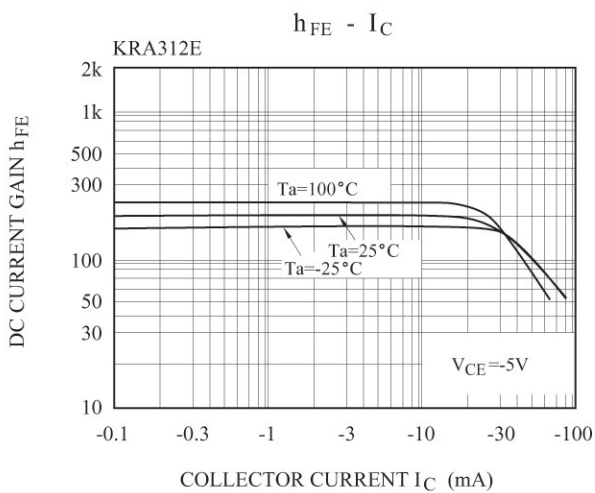
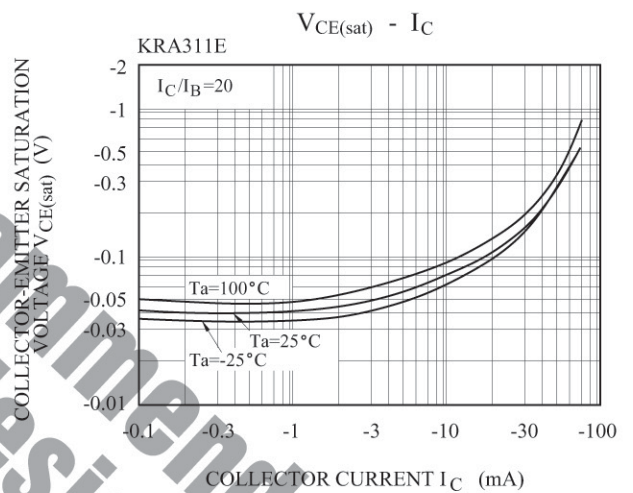
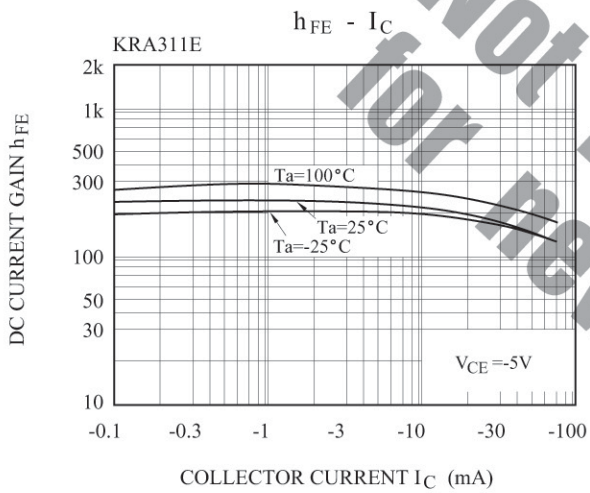
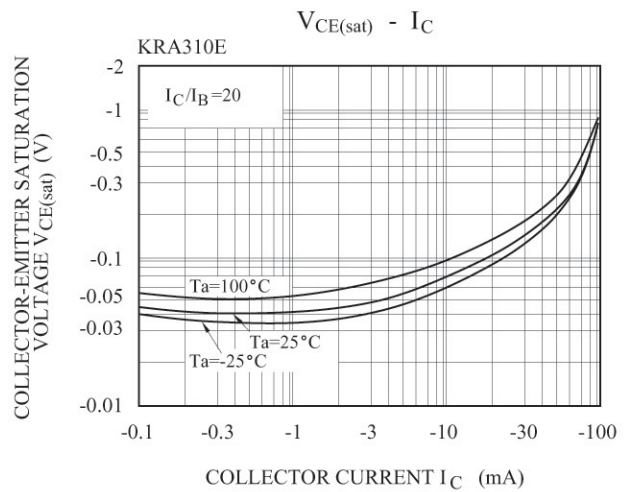
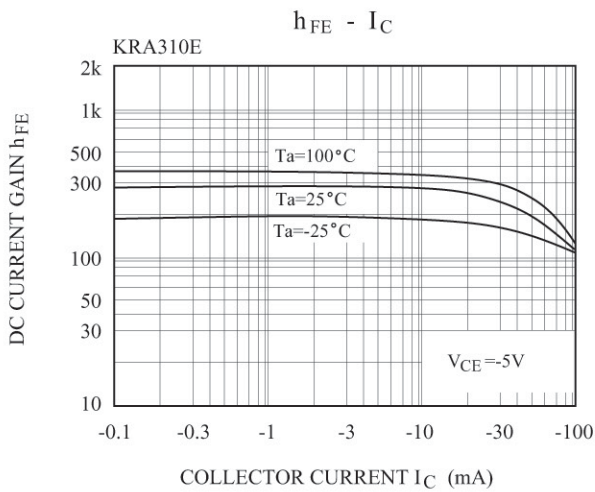
KRA310E~KRA314E

ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------|--------------|---------|--|------|-------|------|------|
| Switching Time | Rise Time | KRA310E | V _O =-5V V _{IN} =-5V R _L =1kΩ | - | 0.2 | - | μS |
| | | KRA311E | | - | 0.065 | - | |
| | | KRA312E | | - | 0.4 | - | |
| | | KRA313E | | - | 0.1 | - | |
| | | KRA314E | | - | 0.15 | - | |
| | Storage Time | KRA310E | | - | 2.0 | - | |
| | | KRA311E | | - | 1.7 | - | |
| | | KRA312E | | - | 3.0 | - | |
| | | KRA313E | | - | 2.0 | - | |
| | | KRA314E | | - | 1.5 | - | |
| | Fall Time | KRA310E | | - | 0.3 | - | |
| | | KRA311E | | - | 0.3 | - | |
| | | KRA312E | | - | 1.7 | - | |
| | | KRA313E | | - | 0.8 | - | |
| | | KRA314E | | - | 1.5 | - | |

Not recommend for new design

KRA310E~314E



KRA310E~314E

