

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

- Low Leakage Current
: $I_{CEX} = -50\text{nA}(\text{Max.})$, @ $V_{CE} = -30\text{V}$, $V_{EB} = -3\text{V}$.
- Low Saturation Voltage
: $V_{CE(\text{sat})} = -0.4\text{V}(\text{Max.})$ @ $I_C = -50\text{mA}$, $I_B = -5\text{mA}$.
- Complementary to KN3903.

MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|-----------|------|
| Collector-Base Voltage | V_{CBO} | -40 | V |
| Collector-Emitter Voltage | V_{CEO} | -40 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -200 | mA |
| Base Current | I_B | -50 | mA |
| Collector Power Dissipation | P_C | 625 | mW |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_{stg} | -55 ~ 150 | °C |



KN3905

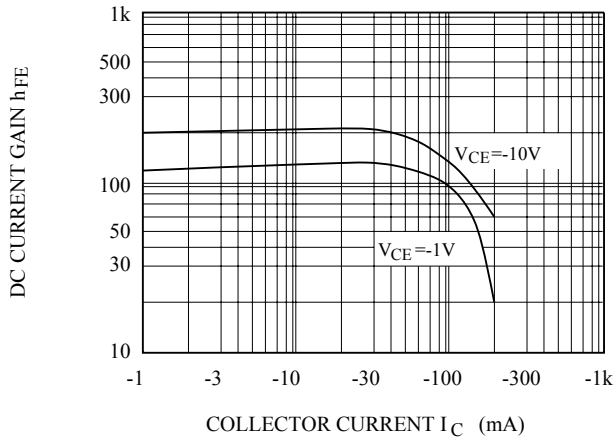
ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--|----------------|------------------------------------|-------|------|-------|------|
| Collector Cut-off Current | I_{CEX} | $V_{CE}=-30V, V_{EB}=-3V$ | - | - | -50 | nA |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=-10\mu A, I_E=0$ | -40 | - | - | V |
| Collector-Emitter Breakdown Voltage * | $V_{(BR)CEO}$ | $I_C=-1mA, I_B=0$ | -40 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=-10\mu A, I_C=0$ | -5 | - | - | V |
| DC Current Gain * | $h_{FE}(1)$ | $V_{CE}=-1V, I_C=-0.1mA$ | 30 | - | - | |
| | $h_{FE}(2)$ | $V_{CE}=-1V, I_C=-1mA$ | 40 | - | - | |
| | $h_{FE}(3)$ | $V_{CE}=-1V, I_C=-10mA$ | 50 | - | 150 | |
| | $h_{FE}(4)$ | $V_{CE}=-1V, I_C=-50mA$ | 30 | - | - | |
| | $h_{FE}(5)$ | $V_{CE}=-1V, I_C=-100mA$ | 15 | - | - | |
| Collector-Emitter Saturation Voltage * | $V_{CE(sat)1}$ | $I_C=-10mA, I_B=-1mA$ | - | - | -0.25 | V |
| | $V_{CE(sat)2}$ | $I_C=-50mA, I_B=-5mA$ | - | - | -0.4 | |
| Base-Emitter Saturation Voltage * | $V_{BE(sat)1}$ | $I_C=-10mA, I_B=-1mA$ | -0.65 | - | -0.85 | V |
| | $V_{BE(sat)2}$ | $I_C=-50mA, I_B=-5mA$ | - | - | -0.95 | |
| Transition Frequency | f_T | $V_{CE}=-20V, I_C=-10mA, f=100MHz$ | - | 200 | - | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=-5V, I_E=0, f=1MHz$ | - | - | 4.5 | pF |

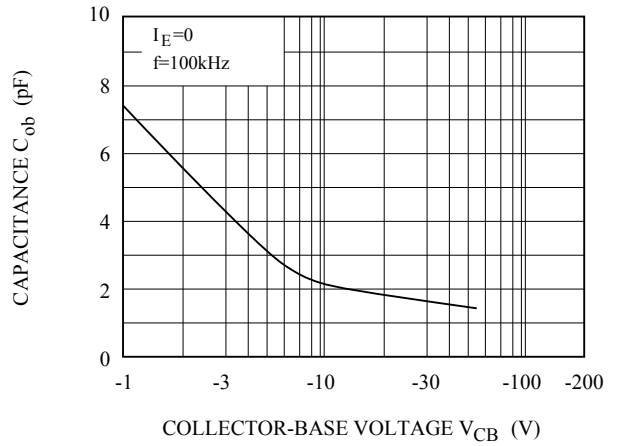
* Pulse Test : Pulse Width $\leq 300\mu S$, Duty Cycle $\leq 2\%$.

KN3905

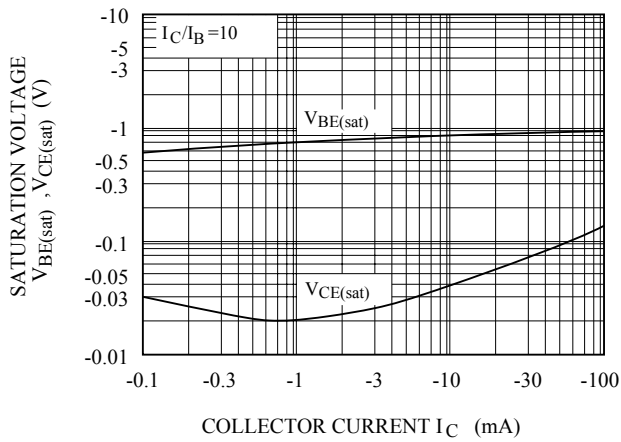
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



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



$P_c - T_a$

