

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

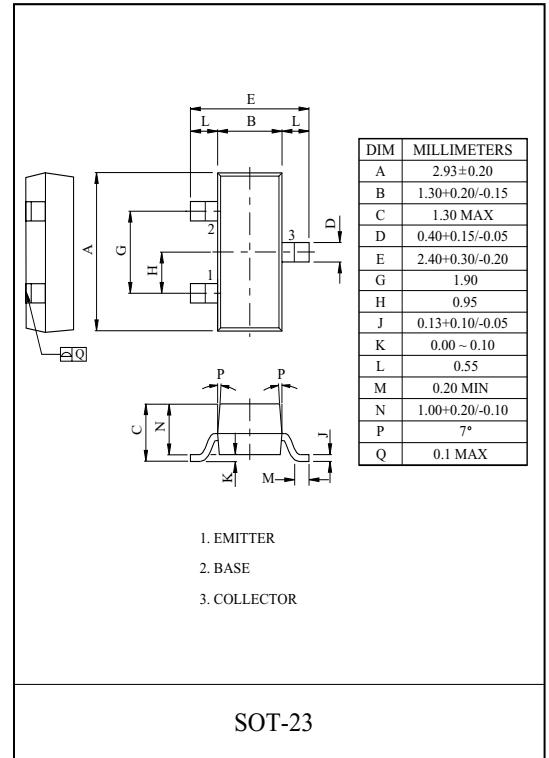
FEATURES

- Low Leakage Current
: $I_{CEX}=50\text{nA}(\text{Max.})$; @ $V_{CE}=30\text{V}$, $V_{EB}=3\text{V}$.
- Low Saturation Voltage
: $V_{CE(\text{sat})}=0.3\text{V}(\text{Max.})$; $I_C=50\text{mA}$, $I_B=5\text{mA}$.
- Complementary to the KN3906S.

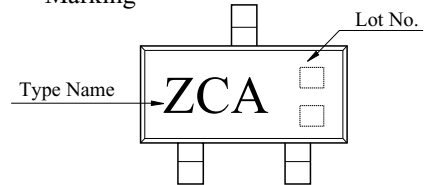
MAXIMUM RATING ($T_a=25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---------|------|
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 200 | mA |
| Base Current | I_B | 50 | mA |
| Collector Power Dissipation | P_C^* | 350 | mW |
| Junction Temperature | T_j | 150 | |
| Storage Temperature Range | T_{stg} | -55 150 | |

Note : * Package Mounted On 99.5% Alumina $10 \times 8 \times 0.6\text{mm}$)



Marking



KN3904S

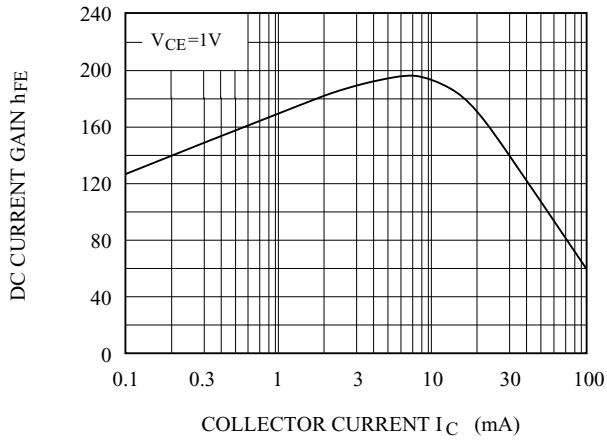
ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| 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 | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$ | 60 | - | - | V |
| Collector-Emitter Breakdown Voltage * | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$ | 40 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 6 | - | - | V |
| DC Current Gain * | $h_{FE(1)}$ | $V_{CE}=1V, I_C=0.1mA$ | 40 | - | - | |
| | $h_{FE(2)}$ | $V_{CE}=1V, I_C=1mA$ | 70 | - | - | |
| | $h_{FE(3)}$ | $V_{CE}=1V, I_C=10mA$ | 100 | - | 300 | |
| | $h_{FE(4)}$ | $V_{CE}=1V, I_C=50mA$ | 60 | - | - | |
| | $h_{FE(5)}$ | $V_{CE}=1V, I_C=100mA$ | 30 | - | - | |
| Collector-Emitter Saturation Voltage * | $V_{CE(sat)1}$ | $I_C=10mA, I_B=1mA$ | - | - | 0.2 | V |
| | $V_{CE(sat)2}$ | $I_C=50mA, I_B=5mA$ | - | - | 0.3 | |
| 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 | $V_{CE}=20V, I_C=10mA, f=100MHz$ | - | 300 | - | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=5V, I_E=0, f=1MHz$ | - | - | 4.0 | pF |

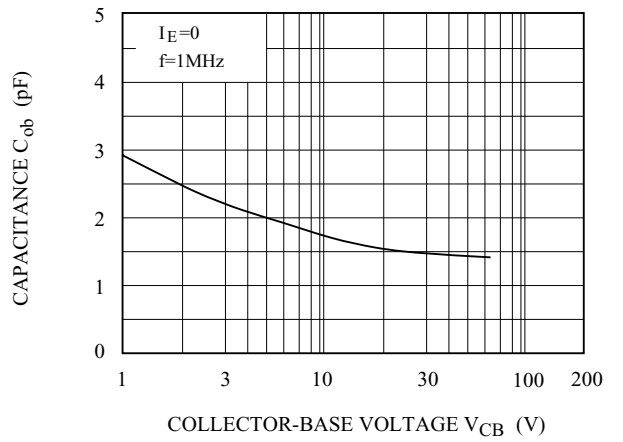
* Pulse Test : Pulse Width 300 μs , Duty Cycle 2%.

KN3904S

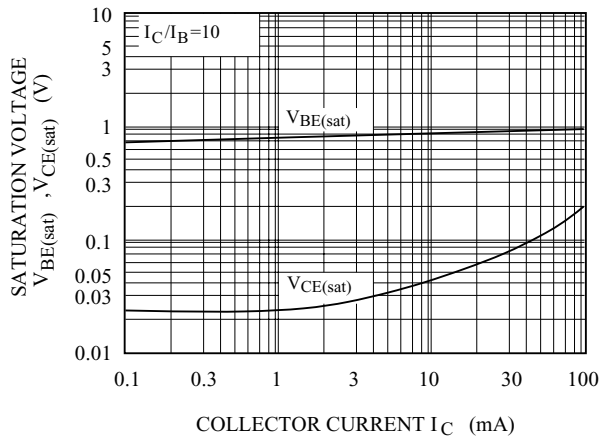
$h_{FE} - I_C$



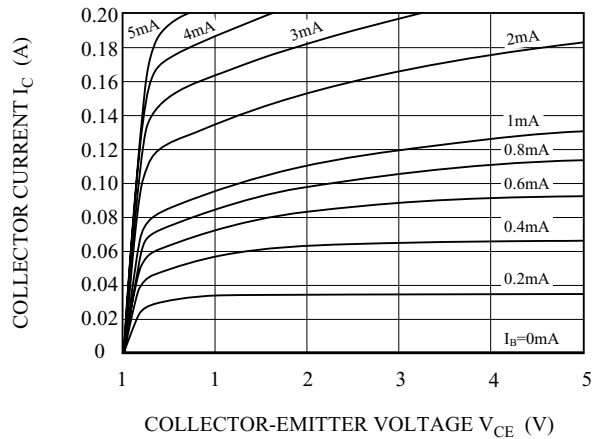
$C_{ob} - V_{CB}$



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



$I_C - V_{CE}$



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