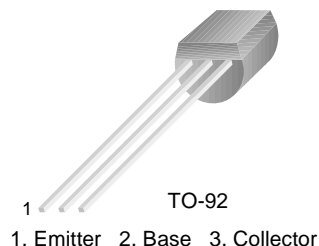


KSP42/43

KSP42/43

High Voltage Transistor

- Collector-Emitter Voltage: V_{CEO} =KSP42: 300V
KSP43: 200V
- Collector Power Dissipation: $P_C(\text{max})$ =625mW



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|-----------|------------------|
| V_{CBO} | Collector Base Voltage | | |
| | : KSP42 | 300 | V |
| | : KSP43 | 200 | V |
| V_{CEO} | Collector-Emitter Voltage | | |
| | : KSP42 | 300 | V |
| | : KSP43 | 200 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current | 500 | mA |
| P_C | Collector Power Dissipation | 625 | mW |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 ~ 150 | $^\circ\text{C}$ |

Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|----------------------|--|--|----------------|--------|----------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=100\mu\text{A}$, $I_E=0$ | | | |
| | : KSP42 | | 300 | | V |
| | : KSP43 | | 200 | | V |
| BV_{CEO} | * Collector -Emitter Breakdown Voltage | $I_C=1\text{mA}$, $I_B=0$ | | | |
| | : KSP42 | | 300 | | V |
| | : KSP43 | | 200 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=100\mu\text{A}$, $I_C=0$ | 6 | | V |
| I_{CBO} | Collector Cut-off Current | | | | |
| | : KSP42 | $V_{CB}=200\text{V}$, $I_E=0$ | | 100 | nA |
| | : KSP43 | $V_{CB}=160\text{V}$, $I_E=0$ | | 100 | nA |
| I_{EBO} | Emitter Cut-off Current | | | | |
| | : KSP42 | $V_{BE}=6\text{V}$, $I_C=0$ | | 100 | nA |
| | : KSP43 | $V_{BE}=4\text{V}$, $I_C=0$ | | 100 | nA |
| h_{FE} | * DC Current Gain | $V_{CE}=10\text{V}$, $I_C=1\text{mA}$ $V_{CE}=10\text{V}$, $I_C=10\text{mA}$ $V_{CE}=10\text{V}$, $I_C=30\text{mA}$ | 25 40 40 | | |
| $V_{CE}(\text{sat})$ | * Collector-Emitter Saturation Voltage | $I_C=20\text{mA}$, $I_B=2\text{mA}$ | | 0.5 | V |
| $V_{BE}(\text{sat})$ | * Base-Emitter Saturation Voltage | $I_C=20\text{mA}$, $I_B=2\text{mA}$ | | 0.9 | V |
| C_{ob} | Output Capacitance | $V_{CB}=20\text{V}$, $I_E=0$ $f=1\text{MHz}$ | | 3 4 | pF pF |
| f_T | Current Gain Bandwidth Product | $V_{CE}=20\text{V}$, $I_C=10\text{mA}$ $f=100\text{MHz}$ | 50 | | MHz |

* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycles $\leq 2\%$

Typical Characteristics

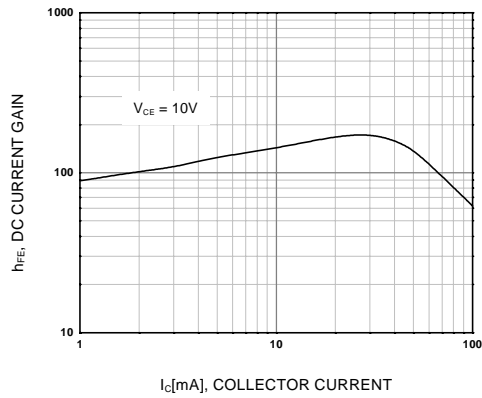


Figure 1. DC current Gain

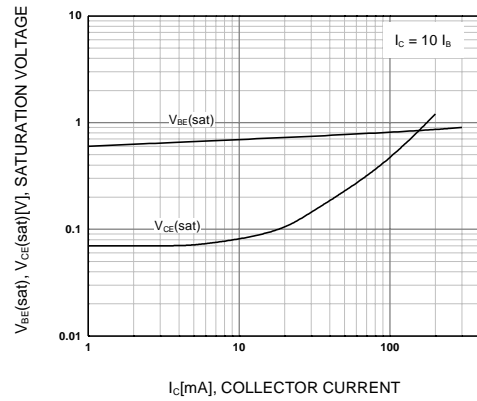


Figure 2. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

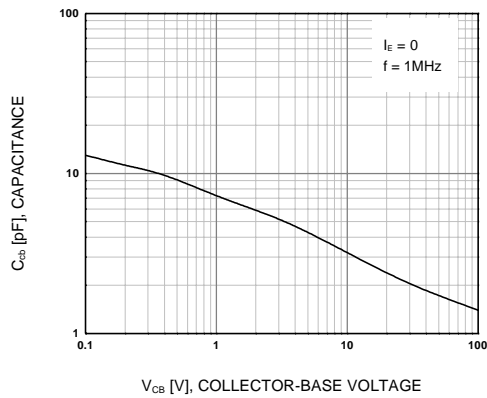


Figure 3. Collector-Base Capacitance

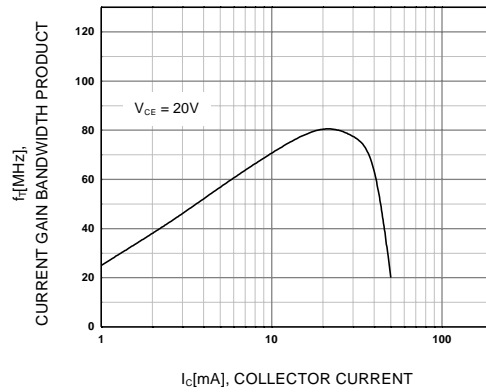


Figure 4. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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