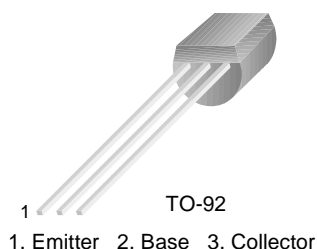


KSP5179

High Frequency Transistor



NPN Epitaxial Silicon Transistor

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

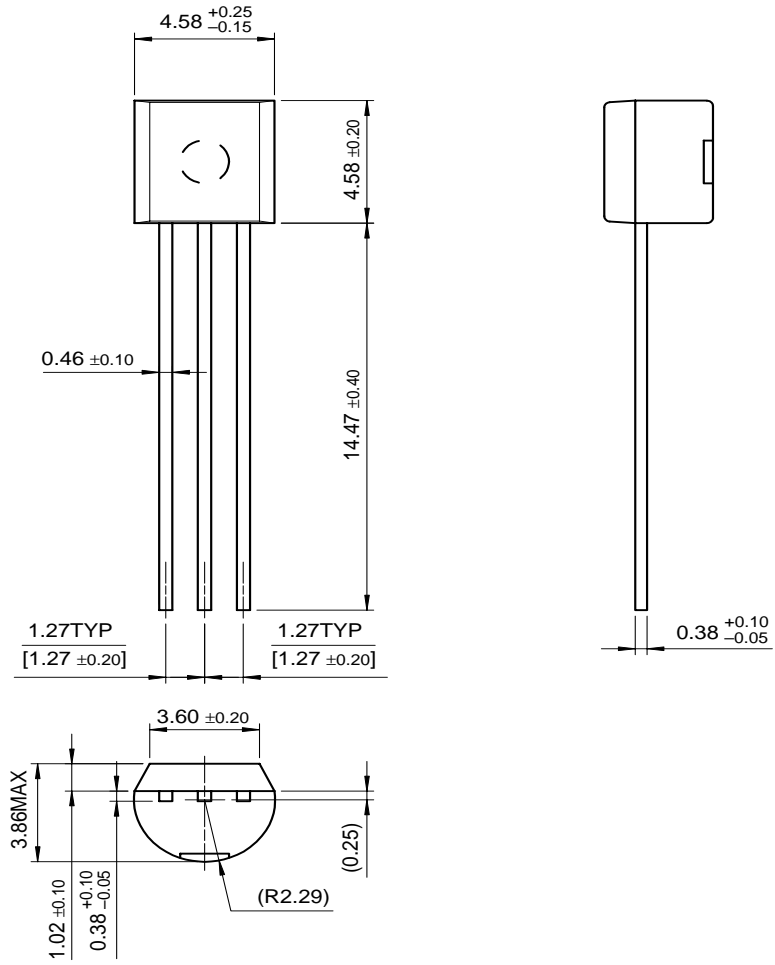
| Symbol | Parameter | Value | Units |
|-----------|--|-----------|----------------------|
| V_{CBO} | Collector-Base Voltage | 20 | V |
| V_{CEO} | Collector-Emitter Voltage | 12 | V |
| V_{EBO} | Emitter-Base Voltage | 2.5 | V |
| I_C | Collector Current | 50 | mA |
| P_C | Collector Power Dissipation ($T_a=25^\circ\text{C}$) | 200 | mW |
| | Derate above 25°C | 1.6 | mW/ $^\circ\text{C}$ |
| P_C | Collector Power Dissipation ($T_C=25^\circ\text{C}$) | 300 | mW |
| | Derate above 25°C | 2.4 | mW/ $^\circ\text{C}$ |
| 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 |
|-----------------------|--------------------------------------|---|------|------|---------------|
| $V_{CEO}(\text{sus})$ | Collector-Emitter Sustaining Voltage | $I_C=3\text{mA}, I_B=0$ | 12 | | V |
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=10\mu\text{A}, I_E=0$ | 20 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=10\mu\text{A}, I_C=0$ | 2.5 | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=15\text{V}, I_E=0$ | | 0.02 | μA |
| | | $V_{CB}=15\text{V}, I_E=0, T_a=150^\circ\text{C}$ | | 1 | μA |
| h_{FE} | DC Current Gain | $V_{CB}=1\text{V}, I_C=3\text{mA}$ | 25 | 250 | |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}, I_B=1\text{mA}$ | | 0.4 | V |
| $V_{BE}(\text{sat})$ | Base-Emitter Saturation Voltage | $I_C=10\text{mA}, I_B=1\text{mA}$ | | 1 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE}=6\text{V}, I_C=5\text{mA}$ | 900 | 2000 | MHz |
| C_{ob} | Output Capacitance | $V_{CB}=10\text{V}, I_E=0, f=0.1 \text{ to } 1 \text{ MHz}$ | | 1 | pF |
| h_{fe} | Small Signal Current Gain | $V_{CE}=6\text{V}, I_C=2\text{mA}, f=1\text{KHz}$ | 25 | 300 | |
| $C_C \cdot r_{bb'}$ | Collector Base Time Constant | $V_{CE}=6\text{V}, I_E=2\text{mA}, f=31.9\text{MHz}$ | 3 | 14 | ps |
| NF | Noise Figure | $V_{CE}=6\text{V}, I_C=1.5\text{mA}, f=200\text{MHz}$ $R_S=50\Omega$ | | 4.5 | dB |

Package Dimensions

TO-92



Dimensions in Millimeters

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