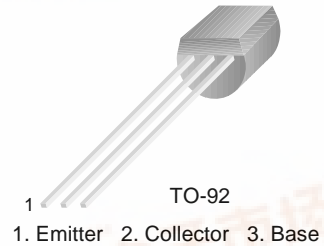


FAIRCHILD
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FJN3305R

Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ($R_1=4.7K\Omega$, $R_2=10K\Omega$)
- Complement to FJN4305R

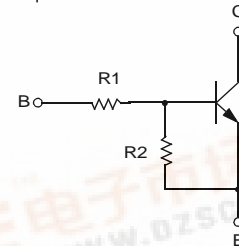


NPN Epitaxial Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|-----------|------------------|
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{CEO} | Collector-Emitter Voltage | 50 | V |
| V_{EBO} | Emitter-Base Voltage | 10 | V |
| I_C | Collector Current | 100 | mA |
| P_C | Collector Power Dissipation | 300 | mW |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 ~ 150 | $^\circ\text{C}$ |

Equivalent Circuit



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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|-------------------|--------------------------------------|---|------|------|------|---------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=10\mu\text{A}$, $I_E=0$ | 50 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C=100\mu\text{A}$, $I_B=0$ | 50 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=40\text{V}$, $I_E=0$ | | | 0.1 | μA |
| h_{FE} | DC Current Gain | $V_{CE}=5\text{V}$, $I_C=5\text{mA}$ | 30 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}$, $I_B=0.5\text{mA}$ | | | 0.3 | V |
| C_{ob} | Output Capacitance | $V_{CE}=10\text{V}$, $I_C=5\text{mA}$ $f=1\text{MHz}$ | | 3.7 | | pF |
| f_T | Current Gain Bandwidth Product | $V_{CE}=10\text{V}$, $I_C=5\text{mA}$ | | 250 | | MHz |
| $V_I(\text{off})$ | Input Off Voltage | $V_{CE}=5\text{V}$, $I_C=100\mu\text{A}$ | 0.3 | | | V |
| $V_I(\text{on})$ | Input On Voltage | $V_{CE}=0.3\text{V}$, $I_C=20\text{mA}$ | | | 2.5 | V |
| R_1 | Input Resistor | | 3.2 | 4.7 | 6.2 | $K\Omega$ |
| R_1/R_2 | Resistor Ratio | | 0.42 | 0.47 | 0.52 | |

Typical Characteristics

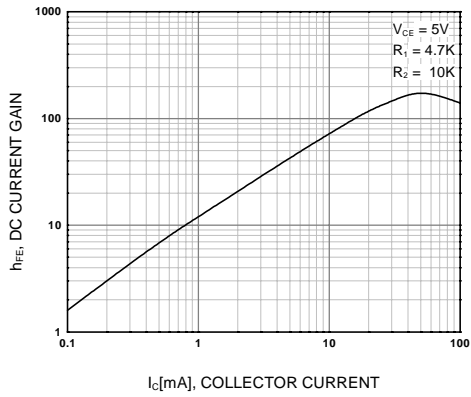


Figure 1. DC current Gain

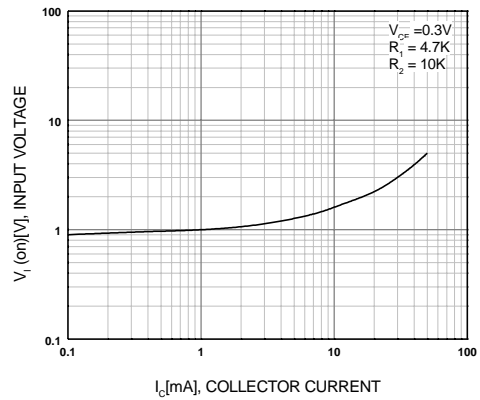


Figure 2. Input On Voltage

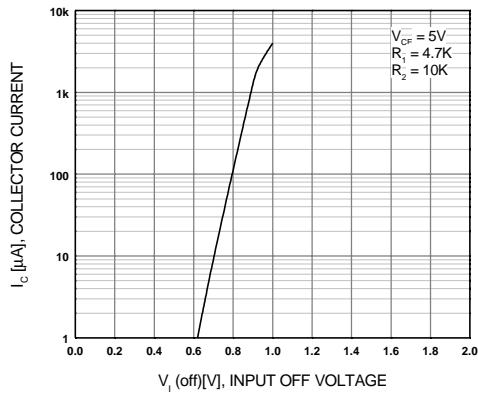


Figure 3. Input Off Voltage

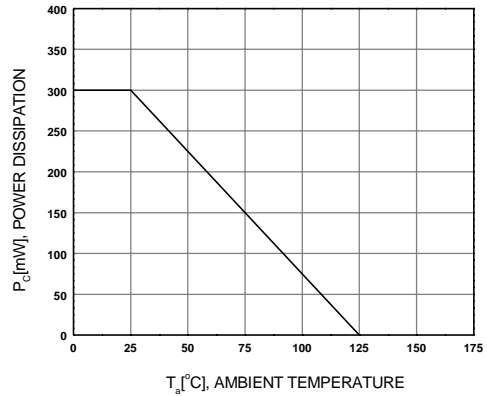
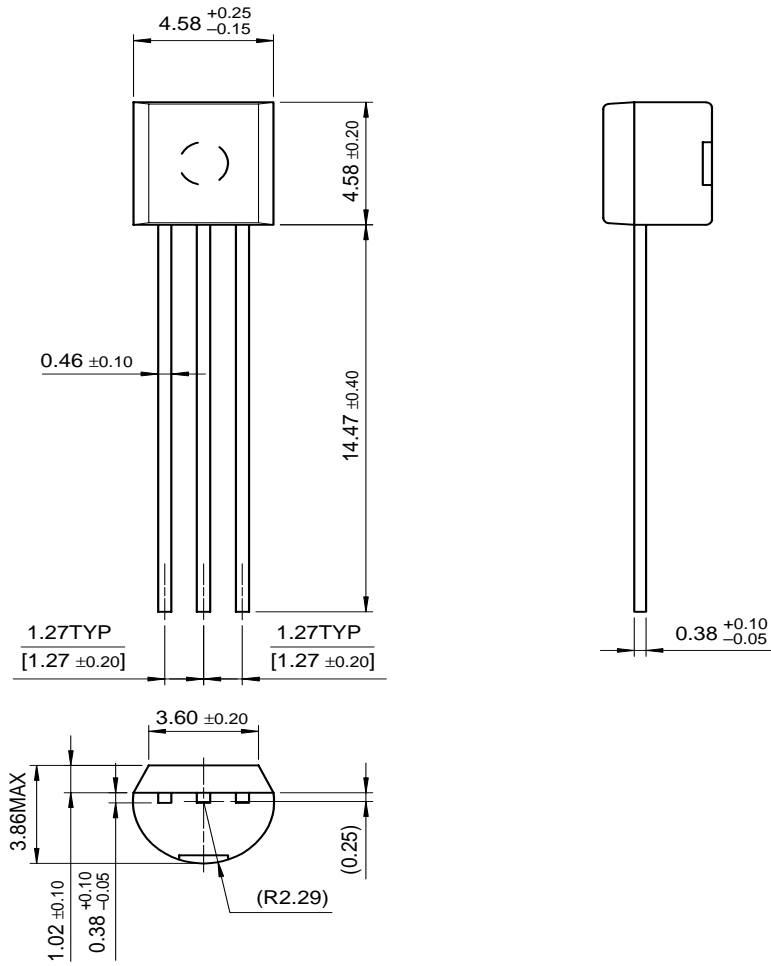


Figure 4. Power Derating

Package Dimensions

TO-92



Dimensions in Millimeters

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| | | | | |
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| Bottomless™ | FAST® | LittleFET™ | Power247™ | SuperSOT™-3 |
| CoolFET™ | FASTr™ | MicroFET™ | PowerTrench® | SuperSOT™-6 |
| CROSSVOLT™ | FRFET™ | MicroPak™ | QFET™ | SuperSOT™-8 |
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|--------------------------|------------------------|---|
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