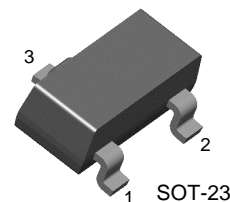


FJV3109R

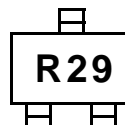
Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R=4.7KΩ)
- Complement to FJV4109R

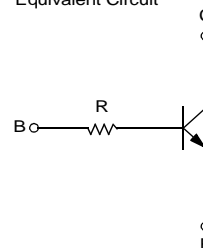


1. Base 2. Emitter 3. Collector

Marking



Equivalent Circuit



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 | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 100 | mA |
| P_C | Collector Power Dissipation | 200 | 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. | Typ. | Max. | Units |
|---------------|--------------------------------------|--|------|------|------|---------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=100\mu\text{A}$, $I_E=0$ | 40 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_E=1\text{mA}$, $I_B=0$ | 40 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=30\text{V}$, $I_E=0$ | | | 0.1 | μA |
| h_{FE} | DC Current Gain | $V_{CE}=5\text{V}$, $I_C=1\text{mA}$ | 100 | | 600 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}$, $I_B=1\text{mA}$ | | | 0.3 | V |
| C_{ob} | Output Capacitance | $V_{CB}=10\text{V}$, $I_E=0$ $f=1\text{MHz}$ | | 3.70 | | pF |
| f_T | Current Gain Bandwidth Product | $V_{CE}=10\text{V}$, $I_C=5\text{mA}$ | | 250 | | MHz |
| R | Input Resistor | | 3.2 | 4.7 | 6.2 | KΩ |

Typical Characteristics

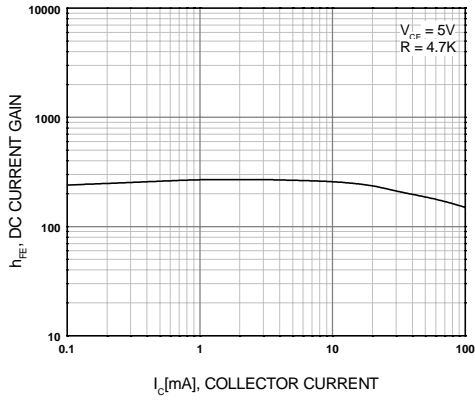


Figure 1. DC current Gain

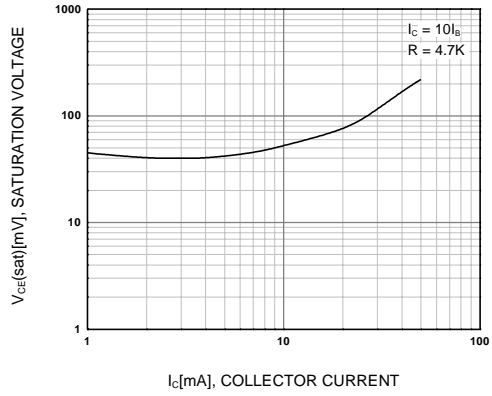


Figure 2. Collector-Emitter Saturation Voltage

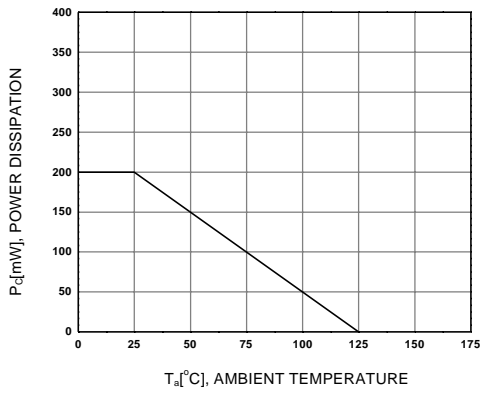
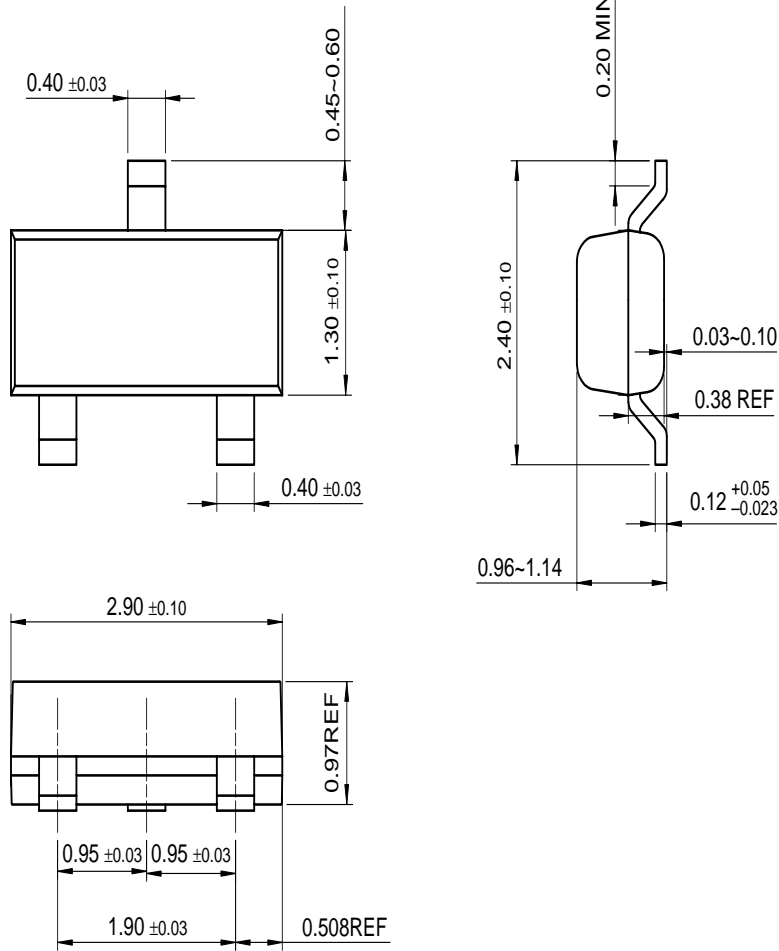


Figure 3. Power Derating

Package Dimensions

SOT-23



Dimensions in Millimeters

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