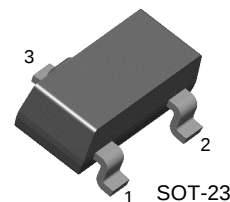


# FJV3112R

FJV3112R

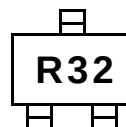
## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R=47K\Omega$ )
- Complement to FJV4112R

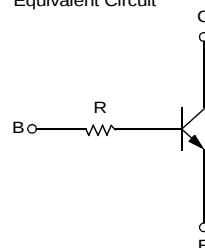


1. Base 2. Emitter 3. Collector

Marking



Equivalent Circuit



## NPN Epitaxial Silicon Transistor

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

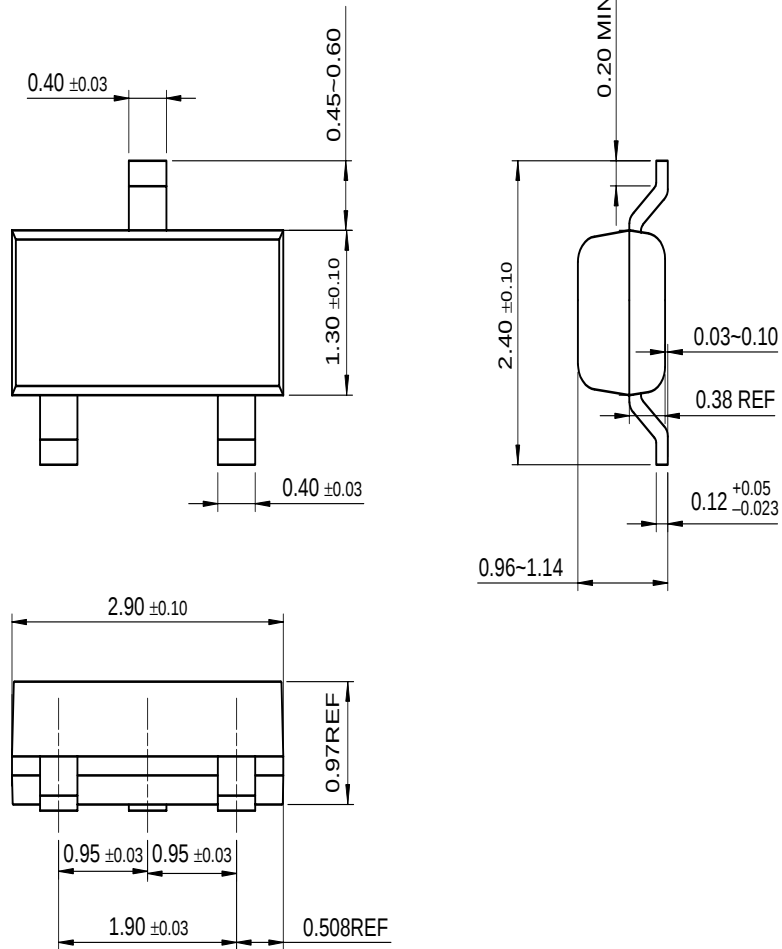
| Symbol    | Parameter                   | Value     | Units            |
|-----------|-----------------------------|-----------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | 40        | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | 40        | V                |
| $V_{EBO}$ | 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  | $\mu\text{A}$ |
| $h_{FE}$             | DC Current Gain                      | $V_{CE}=5\text{V}$ , $I_C=1\text{mA}$            | 100  |      | 600  |               |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}$ , $I_B=1\text{mA}$             |      |      | 0.3  | V             |
| $C_{ob}$             | Output Capacitance                   | $V_{CB}=10\text{V}$ , $I_E=0$<br>$f=1\text{MHz}$ |      | 3.7  |      | pF            |
| $f_T$                | Current Gain Bandwidth Product       | $V_{CE}=10\text{V}$ , $I_C=5\text{mA}$           |      | 250  |      | MHz           |
| R                    | Input Resistor                       |                                                  | 32   | 47   | 62   | K $\Omega$    |

## Package Dimensions

## SOT-23



Dimensions in Millimeters

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| Bottomless <sup>™</sup>                          | FAST <sup>®</sup>               | LittleFET <sup>™</sup>         | Power247 <sup>™</sup>           | SuperSOT <sup>™</sup> -3    |
| CoolFET <sup>™</sup>                             | FAST <sup>™</sup>               | MicroFET <sup>™</sup>          | PowerTrench <sup>®</sup>        | SuperSOT <sup>™</sup> -6    |
| CROSSVOLT <sup>™</sup>                           | FRFET <sup>™</sup>              | MicroPak <sup>™</sup>          | QFET <sup>™</sup>               | SuperSOT <sup>™</sup> -8    |
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| EcoSPARK <sup>™</sup>                            | GTO <sup>™</sup>                | MSX <sup>™</sup>               | QT Optoelectronics <sup>™</sup> | TinyLogic <sup>™</sup>      |
| E <sup>2</sup> CMOS <sup>™</sup>                 | HiSeC <sup>™</sup>              | MSXPro <sup>™</sup>            | Quiet Series <sup>™</sup>       | TruTranslation <sup>™</sup> |
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| The Power Franchise <sup>™</sup>                 |                                 | OPTOLOGIC <sup>®</sup>         | SILENT SWITCHER <sup>®</sup>    | VCX <sup>™</sup>            |
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|--------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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