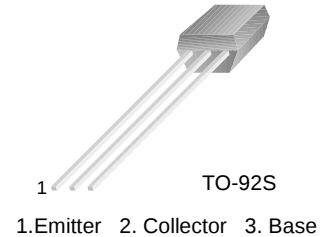


# FJNS4213R

FJNS4213R

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R_1=2.2K\Omega$ ,  $R_2=47K\Omega$ )
- Complement to FJNS3213R

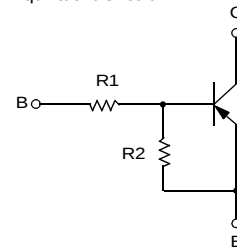


## PNP Epitaxial Silicon Transistor

### 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

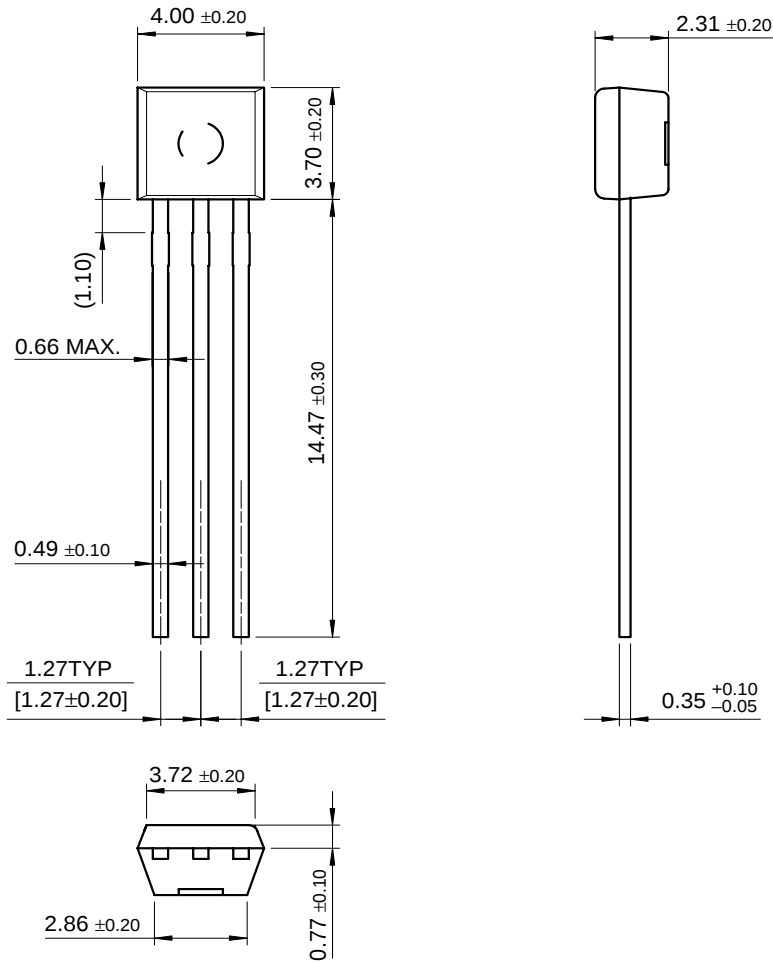


### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| 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 Cutoff Current             | $V_{CB} = -40\text{V}$ , $I_E = 0$                        |       |       | -0.1  | $\mu\text{A}$ |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = -5\text{V}$ , $I_C = -5\text{mA}$               | 68    |       |       |               |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -10\text{mA}$ , $I_B = -0.5\text{mA}$              |       |       | -0.3  | V             |
| $f_T$         | Current Gain Bandwidth Product       | $V_{CE} = -10\text{V}$ , $I_C = -5\text{mA}$              |       | 200   |       | MHz           |
| $C_{ob}$      | Output Capacitance                   | $V_{CB} = -10\text{V}$ , $I_E = 0$<br>$f = 1.0\text{MHz}$ |       | 5.5   |       | pF            |
| $V_{I(off)}$  | Input Off Voltage                    | $V_{CE} = -5\text{V}$ , $I_C = -100\mu\text{A}$           | -0.5  |       |       | V             |
| $V_{I(on)}$   | Input On Voltage                     | $V_{CE} = -0.2\text{V}$ , $I_C = -10\text{mA}$            |       |       | -1.1  | V             |
| $R_1$         | Input Resistor                       |                                                           | 1.5   | 2.2   | 2.9   | $K\Omega$     |
| $R_1/R_2$     | Resistor Ratio                       |                                                           | 0.042 | 0.047 | 0.052 |               |

# Package Dimensions

## TO-92S



Dimensions in Millimeters

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