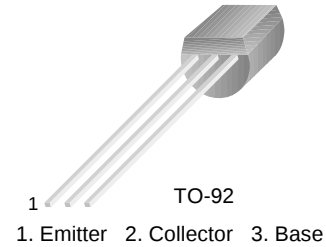


# FJN4303R

FJN4303R

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R_1=22K\Omega$ ,  $R_2=22K\Omega$ )
- Complement to FJN3303R

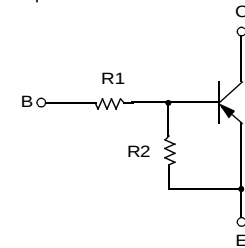


## PNP Epitaxial Silicon Transistor

### 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 Cut-off Current            | $V_{CB} = -40\text{V}$ , $I_E = 0$                        |      |      | -0.1 | $\mu\text{A}$ |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = -5\text{V}$ , $I_C = -5\text{mA}$               | 56   |      |      |               |
| $V_{CE(sat)}$ | 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                     | $V_{CE} = -0.3\text{V}$ , $I_C = -5\text{mA}$             |      |      | -3.0 | V             |
| $R_1$         | Input Resistor                       |                                                           | 15   | 22   | 29   | $K\Omega$     |
| $R_1/R_2$     | Resistor Ratio                       |                                                           | 0.9  | 1    | 1.1  |               |

## Typical Characteristics

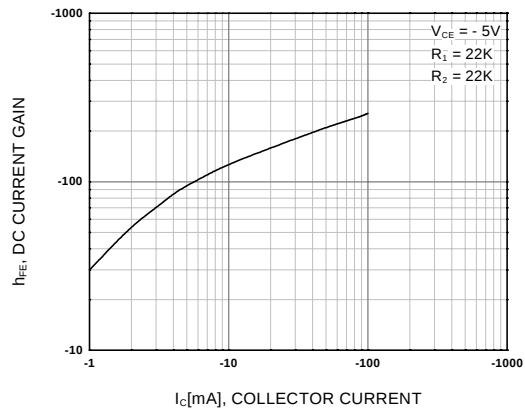


Figure 1. DC current Gain

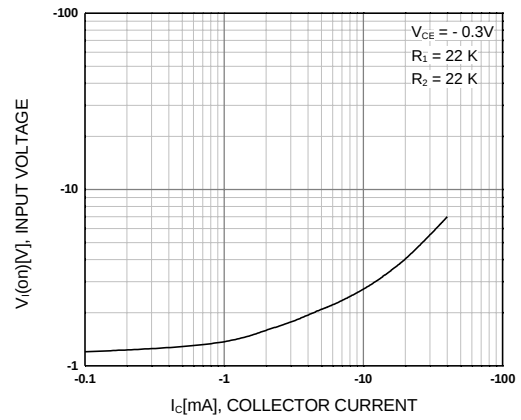


Figure 2. Input On Voltage

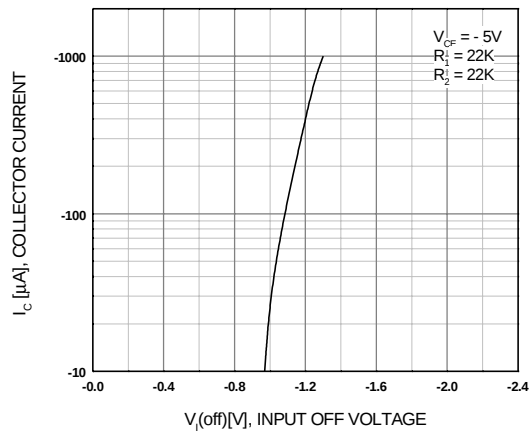


Figure 3. Input Off Voltage

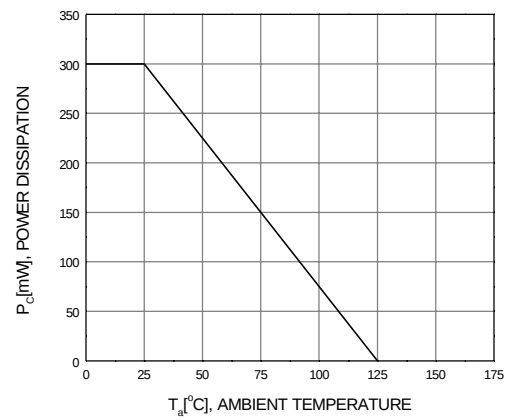


Figure 4. Power Derating

# Package Dimensions

TO-92



Dimensions in Millimeters

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| Bottomless™          | FRFET™              | OPTOPLANAR™                  | SPM™                  |      |
| CoolFET™             | GlobalOptoisolator™ | PACMAN™                      | Stealth™              |      |
| CROSSVOLT™           | GTO™                | POP™                         | SuperSOT™-3           |      |
| DOME™                | HiSeC™              | Power247™                    | SuperSOT™-6           |      |
| EcoSPARK™            | I <sup>2</sup> C™   | PowerTrench <sup>®</sup>     | SuperSOT™-8           |      |
| E <sup>2</sup> CMOS™ | ISOPPLANAR™         | QFET™                        | SyncFET™              |      |
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