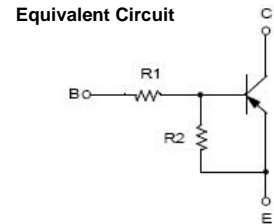
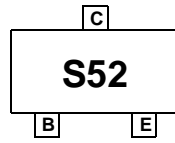
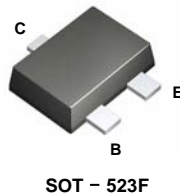


# FJY4002R

## PNP Epitaxial Silicon Transistor

### Features

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R_1=10K\Omega$ ,  $R_2=10K\Omega$ )
- Complement to FJY3002R



### 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               |
| $T_{STG}$ | Storage Temperature Range                       | -55~150 | $^\circ\text{C}$ |
| $T_J$     | Junction Temperature                            | 150     | $^\circ\text{C}$ |
| $P_C$     | Collector Power Dissipation, by $R_{\theta JA}$ | 200     | mW               |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

| Symbol          | Parameter                               | Max | Units              |
|-----------------|---|-----|--------------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 600 | $^\circ\text{C/W}$ |

\* Minimum land pad size.

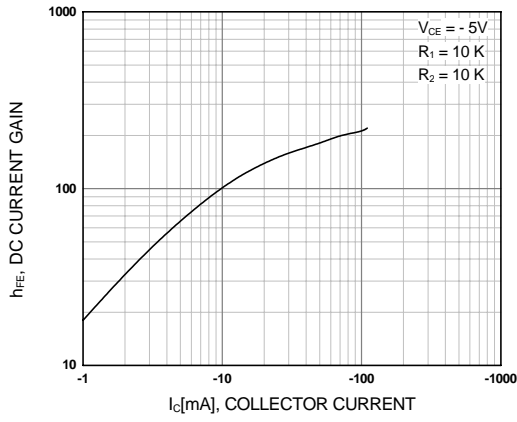
### Electrical Characteristics\* $T_C = 25^\circ\text{C}$ unless otherwise noted

| Symbol        | Parameter                            | Test Condition   | MIN  | Typ | MAX  | Units         |
|---------------|--------------------------------------|--|------|-----|------|---------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage     | $I_C = -10 \mu\text{A}$ , $I_E = 0$                        | -50  |     |      | V             |
| $V_{(BR)CEO}$ | Collector-Base 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                      | $V_{CE} = -5 \text{V}$ , $I_C = -5 \text{mA}$              | 30   |     |      |               |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -10 \text{mA}$ , $I_B = -0.5 \text{mA}$             |      |     | -0.3 | V             |
| $f_r$         | Current Gain - Bandwidth Product     | $V_{CE} = -10 \text{V}$ , $I_C = -5 \text{mA}$             |      | 200 |      | MHz           |
| $C_{cb}$      | Output Capacitance                   | $V_{CB} = -10 \text{V}$ , $I_E = 0$ , $f = 1.0 \text{MHz}$ |      | 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                     | $V_{CE} = -0.3 \text{V}$ , $I_C = -10 \text{mA}$           |      |     | -3   | V             |
| $R_1$         | Input Resistor                       |  | 7    | 10  | 13   | $K\Omega$     |
| $R_1/R_2$     | Resistor Ratio                       |  | 0.9  | 1.0 | 1.1  |               |

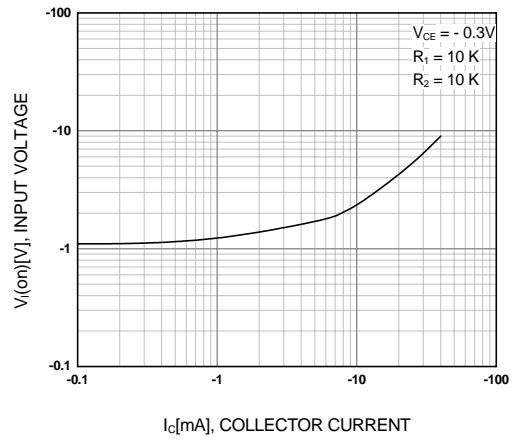
\* Pulse Test:  $PW \leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

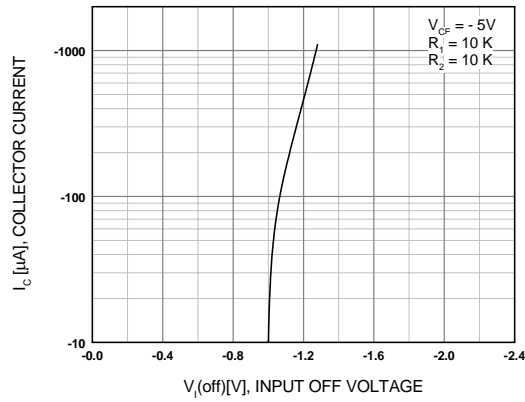
**Figure 1. DC current Gain**



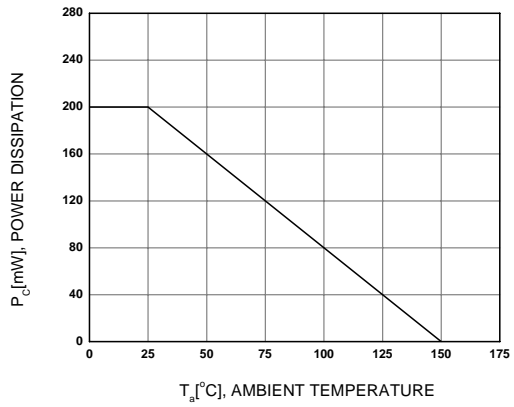
**Figure 2. Input On Voltage**



**Figure 3. Input off Voltage**

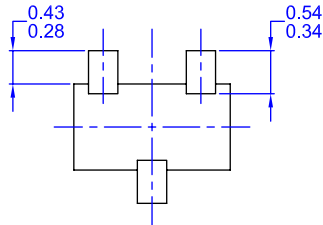
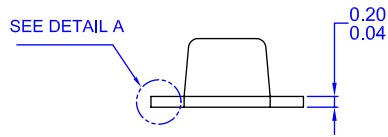
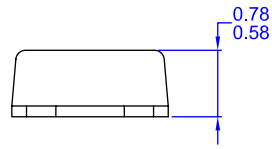
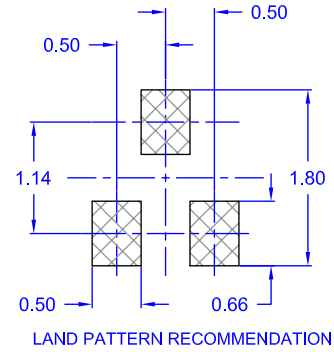
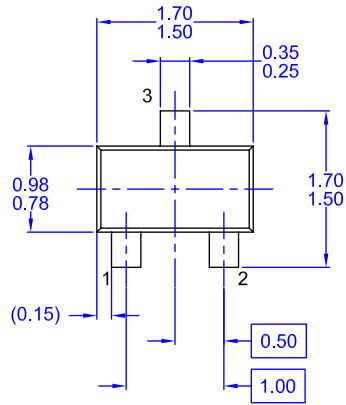


**Figure 4. Power Derating**



# Package Dimensions

## SOT-523F




- NOTES: UNLESS OTHERWISE SPECIFIED  
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 B) ALL DIMENSIONS ARE IN MILLIMETERS.  
 C) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.

Dimensions in Millimeters



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| Build it Now™                        | ISOPLANAR™         | QS™   | TinyPower™      |
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| Current Transfer Logic™              | Motion-SPM™        | RapidConnect™   | UHC®            |
| DOME™                                | MSX™               | ScalarPump™   | UniFET™         |
| E <sup>2</sup> CMOS™                 | MSXPro™            | SMART START™  | VCX™            |
| EcoSPARK®                            | OCX™               | SPM®  | Wire™           |
| EnSigna™                             | OCXPro™            | STEALTH™  |                 |
| FACT Quiet Series™                   | OPTOLOGIC®         | SuperFET™   |                 |
| FACT®                                | OPTOPLANAR®        | SuperSOT™-3   |                 |
| FAST®                                | PACMAN™            | SuperSOT™-6   |                 |
| FASTr™                               | PDP-SPM™           | SuperSOT™-8   |                 |
| FPS™                                 | POP™               | SyncFET™  |                 |
| FRFET®                               | Power220®          | TCM™  |                 |
| GlobalOptoisolator™                  | Power247®          | The Power Franchise®  |                 |
| GTO™                                 | PowerEdge™         |  |                 |

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