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[Fairchild Semiconductor](#)

[FJY3003R](#)

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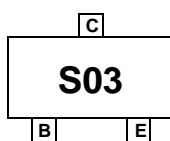
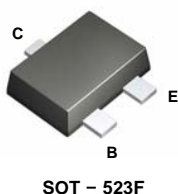


FJY3003R

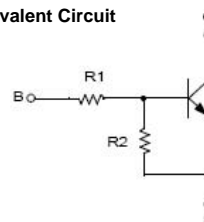
NPN Epitaxial Silicon Transistor

Features

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R1=22KΩ, R2=22KΩ)
- Complement to FJY4003R



Equivalent Circuit



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	$^\circ\text{C}/\text{W}$

* 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-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	μA
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	$V_{CE} = 10\text{V}, I_C = 5 \text{mA}$		250		MHz
C_{cb}	Output Capacitance	$V_{CB} = 10 \text{V}, I_E = 0, f = 1.0 \text{MHz}$		3.7		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	V
R_1	Input Resistor		15	22	29	$\text{K}\Omega$
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

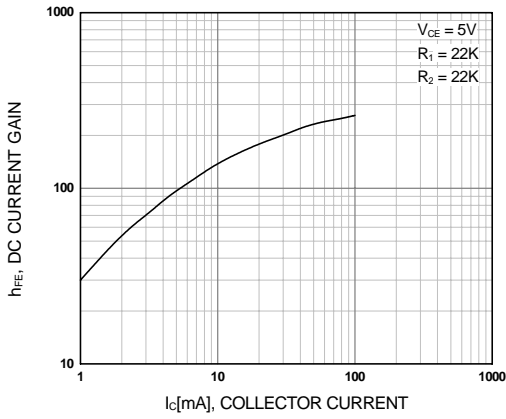


Figure 2. Input On Voltage

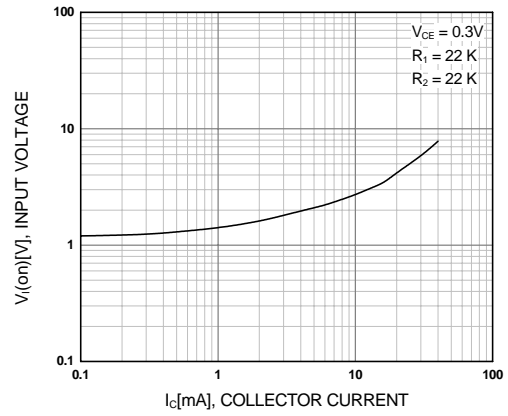


Figure 3. Input off Voltage

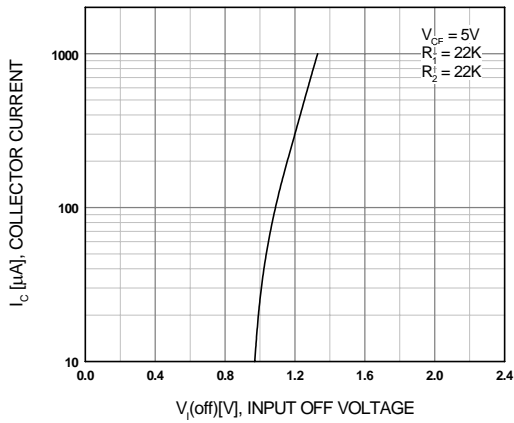
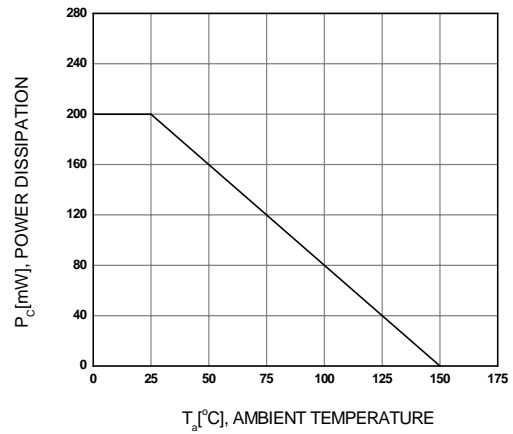
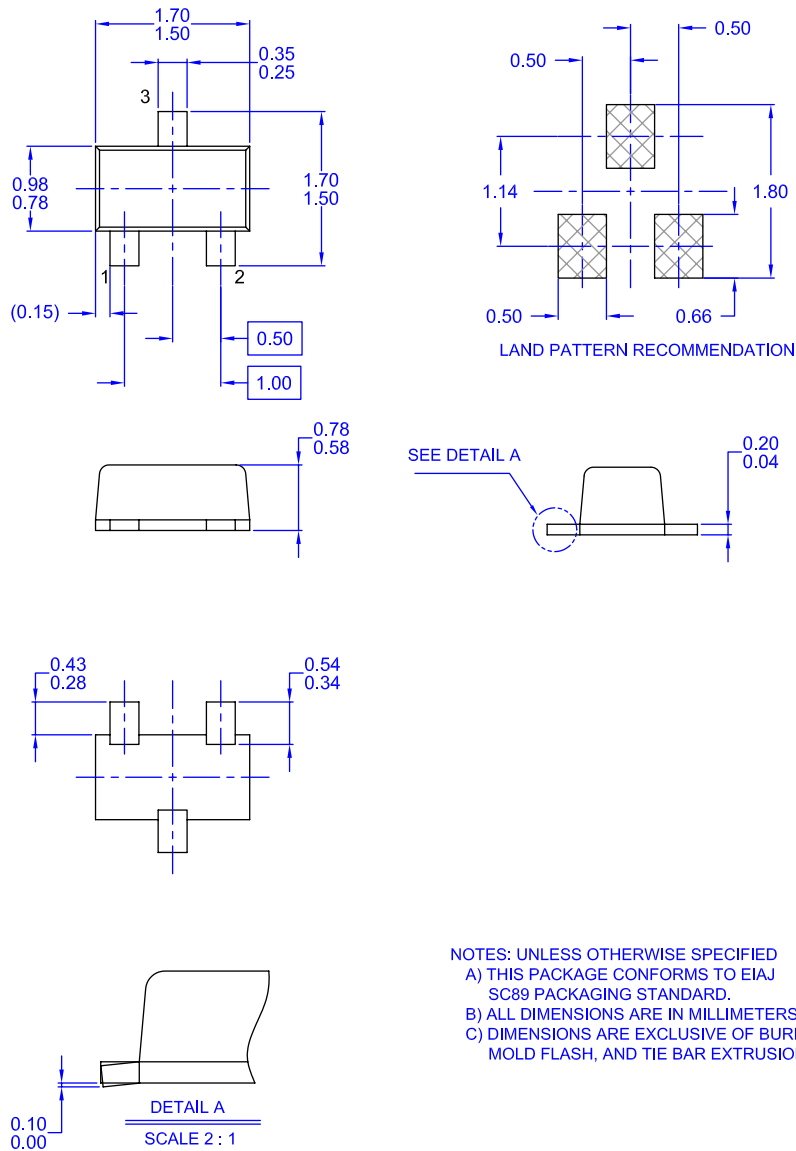


Figure 4. Power Derating



Package Dimensions

SOT-523F




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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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Rev. I25