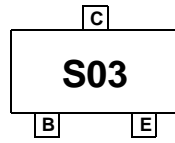
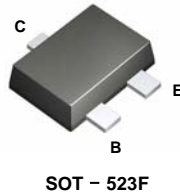


# FJY3003R

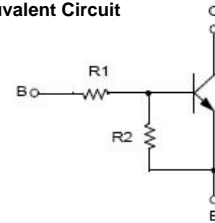
## NPN Epitaxial Silicon Transistor

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

\* Minimum land pad size.

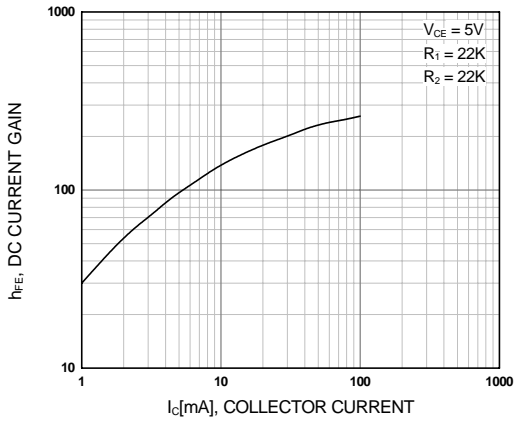
### Electrical Characteristics\* $T_C = 25^\circ\text{C}$ unless otherwise noted

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	$V_{CE} = 5 \text{V}, I_C = 5 \text{mA}$	56			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10 \text{mA}, I_B = 0.5 \text{mA}$			0.3	V
$f_r$	Current Gain - Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 5 \text{mA}$		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	KΩ
$R_1/R_2$	Resistor Ratio		0.9	1.0	1.1	

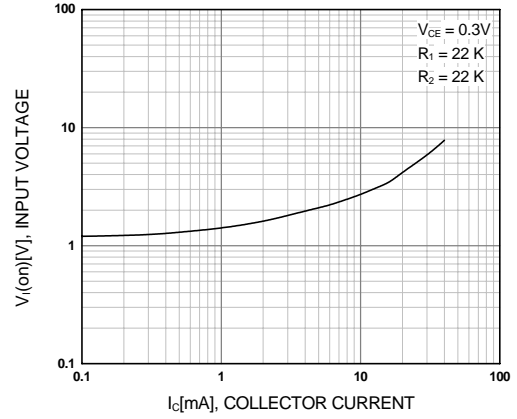
\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

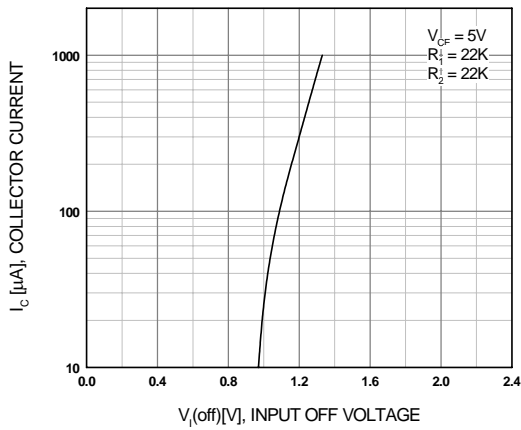
**Figure 1. DC current Gain**



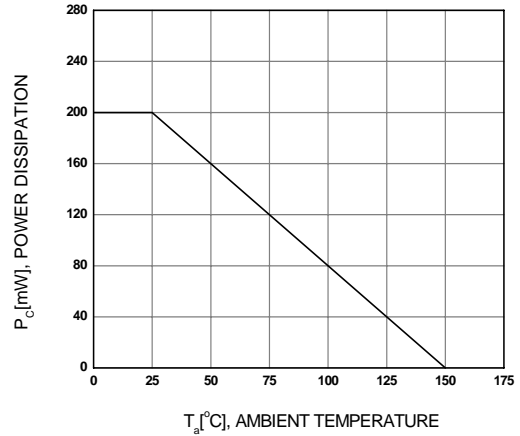
**Figure 2. Input On Voltage**



**Figure 3. Input off Voltage**

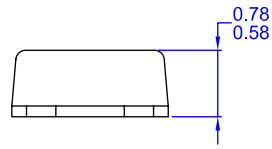


**Figure 4. Power Derating**



# Package Dimensions

## SOT-523F




- NOTES: UNLESS OTHERWISE SPECIFIED
- A) THIS PACKAGE CONFORMS TO EIAJ SC89 PACKAGING STANDARD.
  - 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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FAST <sup>®</sup>	PACMAN <sup>™</sup>	SuperSOT <sup>™</sup> -6	
FASTr <sup>™</sup>	PDP-SPM <sup>™</sup>	SuperSOT <sup>™</sup> -8	
FPS <sup>™</sup>	POP <sup>™</sup>	SyncFET <sup>™</sup>	
FRFET <sup>®</sup>	Power220 <sup>®</sup>	TCM <sup>™</sup>	
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