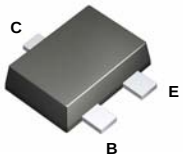
FAIRCHILD SEMICONDUCTOR®

November 2006

FJY3013R
NPN Epitaxial Silicon Transistor

Features

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R1=2.2KΩ, R2=47KΩ)
- Complement to FJY4013R



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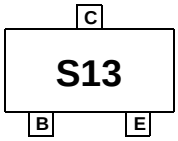
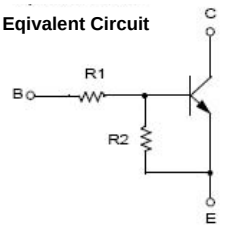


Eqivalent Circuit



Absolute Maximum Ratings * T_a = 25°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	°C
T_J	Junction Temperature	150	°C
P_C	Collector Power Dissipation, by $R_{\theta JA}$	200	mW

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

Thermal Characteristics* T_a=25°C unless otherwise noted

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	600	°C/W

* Minimum land pad size.

Electrical Characteristics* T_C = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	MIN	Typ	MAX	Units
$V_{(BR)CBO}$	Collector-Emitter Breakdown Voltage	I_C = 10 uA, I_E = 0	50			V
$V_{(BR)CEO}$	Collector-Base Breakdown Voltage	I_C = 100 uA, I_B = 0	50			V
I_{CBO}	Collector-Cutoff Current	V_{CB} = 40 V, I_E = 0			0.1	uA
h_{FE}	DC Current Gain	V_{CE} = 5 V, I_C = 5 mA	56			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10 mA, I_B = 0.5 mA			0.3	V
f_T	Current Gain - Bandwidth Product	V_{CE} = 10V, I_C = 5 mA		250		MHz
C_{cb}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz		3.7		pF
$V_{I(off)}$	Input Off Voltage	V_{CE} = 5 V, I_C = 100uA	0.5			V
$V_{I(on)}$	Input On Voltage	V_{CE} = 0.2V, I_C = 5mA			1.1	V
R_1	Input Resistor		1.5	2.2	2.9	KΩ
R_1/R_2	Resistor Ratio		0.042	0.047	0.052	

* Pulse Test: PW≤300μs, Duty Cycle≤2%

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Typical Performance Characteristics

Figure 1. DC current Gain

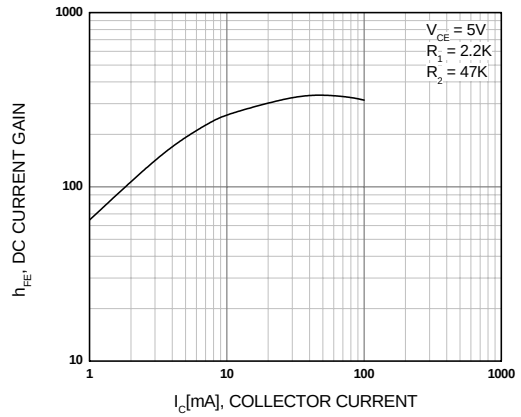


Figure 2. Input On Voltage

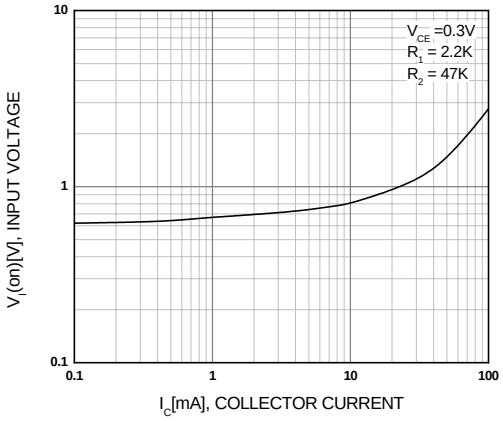


Figure 3. Collector-Emitter Saturation Voltage

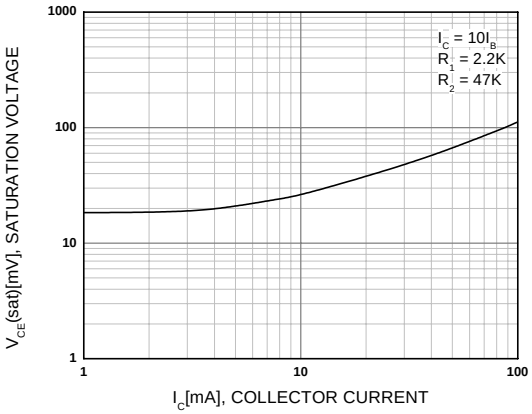
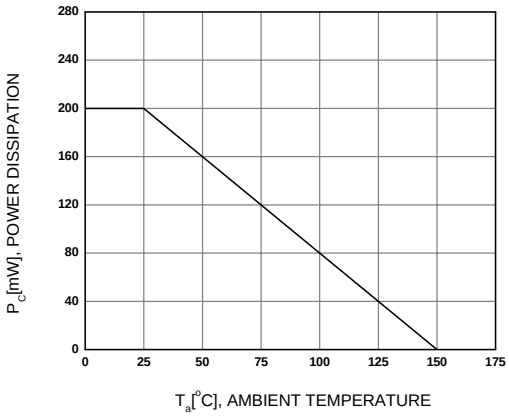
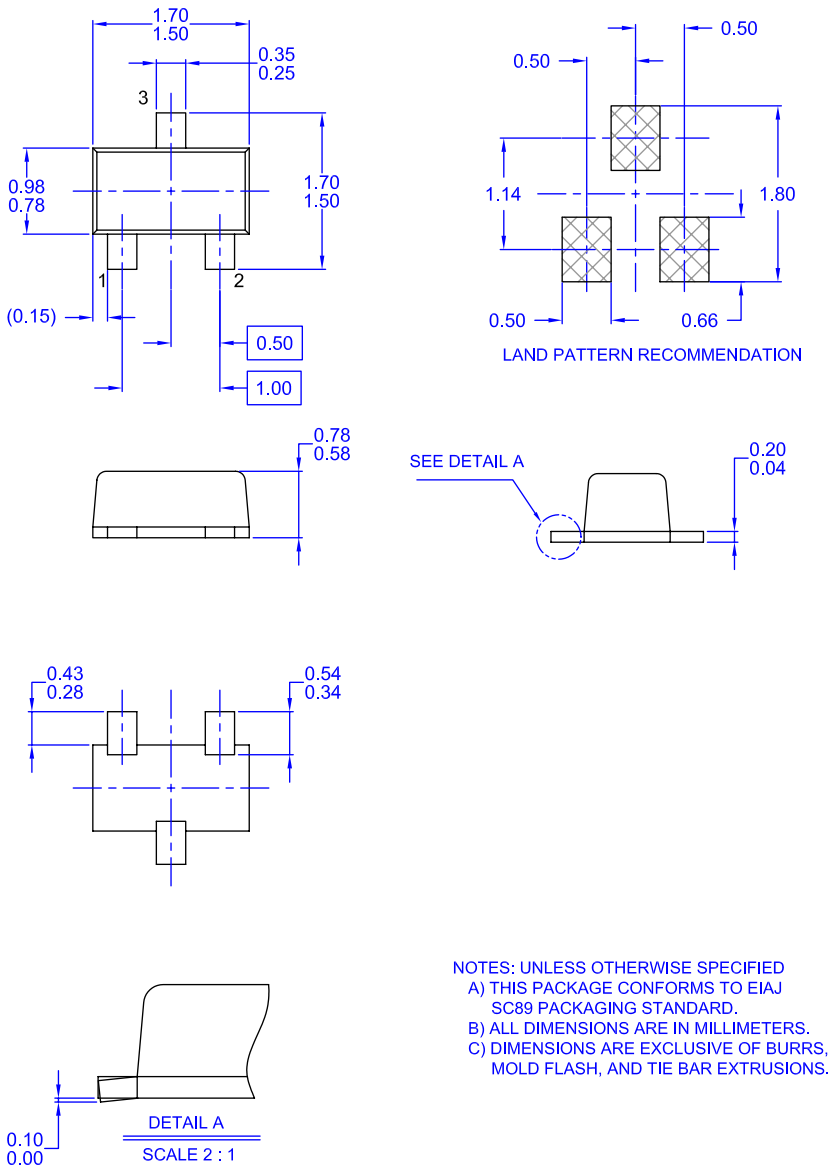


Figure 4. Power Derating



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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