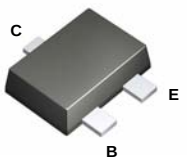
FAIRCHILD SEMICONDUCTOR®

July 2007

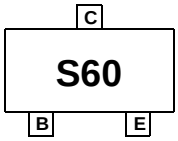
FJY4010R
PNP Epitaxial Silicon Transistor

Features

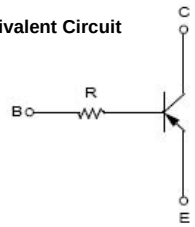
- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R=10KΩ)
- Complement to FJY3010R



SOT − 523F



Equivalent Circuit



Absolute Maximum Ratings * T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	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

* 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 = -100 uA, I_E = 0	-40			V
$V_{(BR)CEO}$	Collector-Base Breakdown Voltage	I_C = -1mA, I_B = 0	-40			V
I_{CBO}	Collector-Cutoff Current	V_{CB} = -30 V, I_E = 0			-0.1	uA
h_{FE}	DC Current Gain	V_{CE} = -5 V, I_C = -1 mA	100		600	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = -10 mA, I_B = -1 mA			-0.3	V
f_T	Current Gain - Bandwidth Product	V_{CE} = -10V, I_C =- 5 mA		200		MHz
C_{cb}	Output Capacitance	V_{CB} = -10 V, I_E = 0, f = 1.0 MHz		5.5		pF
R	Input Resistor		7	10	13	KΩ

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

Figure 1. DC current Gain

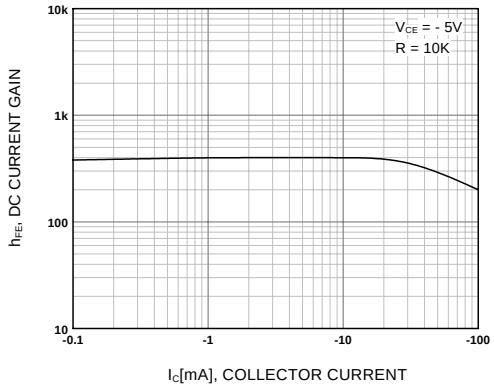


Figure 2. Collector-Emitter Saturation Voltage

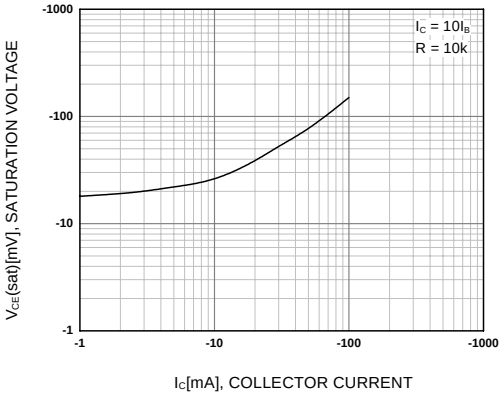
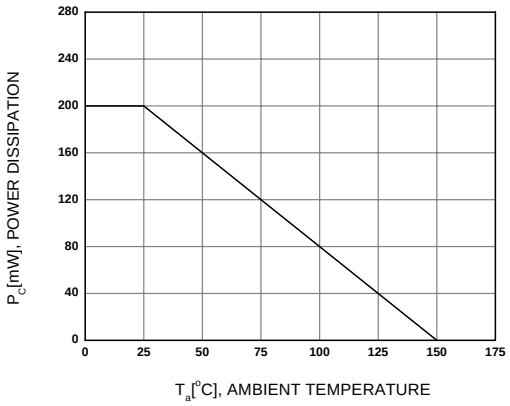
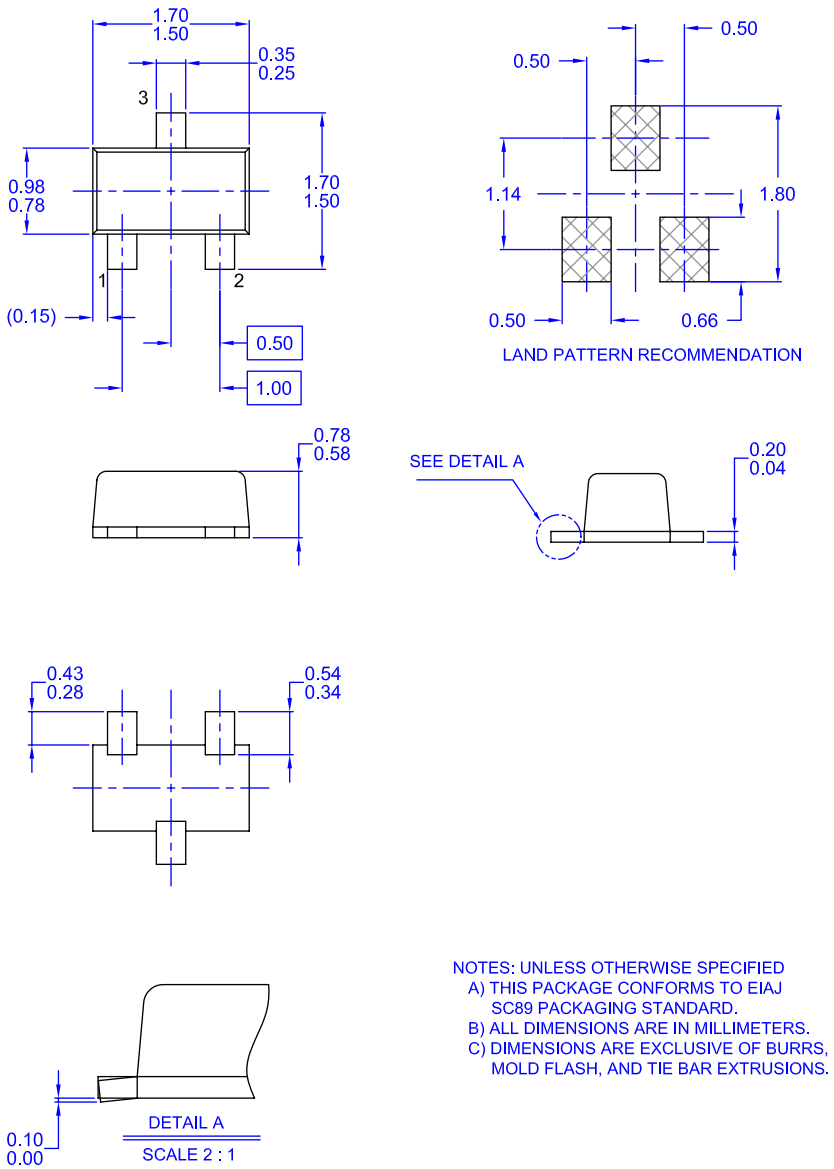


Figure 3. Power Derating



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

FAIRCHILD
SEMICONDUCTOR®

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx®
Across the board. Around the world.™
ActiveArray™
Bottomless™
Build it Now™
CoolFET™
CROSSVOLT™
CTL™
Current Transfer Logic™
DOME™
E²CMOS™
EcoSPARK®
EnSigna™
FACT Quiet Series™
FACT®
FAST®
FASTr™
FPS™
FRFET®
GlobalOptoisolator™
GTO™
HiSeC™
i-Lo™
ImpliedDisconnect™
IntelliMAX™
ISOPLANAR™
MICROCOUPLER™
MicroPak™
MICROWIRE™
Motion-SPM™
MSX™
MSXPro™
OCX™
OCXPro™
OPTOLOGIC®
OPTOPLANAR®
PACMAN™
PDP-SPM™
POP™
Power220®
Power247®
PowerEdge™
PowerSaver™
PowerTrench®
Programmable Active Droop™
QFET®
QS™
QT Optoelectronics™
Quiet Series™
RapidConfigure™
RapidConnect™
ScalarPump™
SMART START™
SPM®
STEALTH™
SuperFET™
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
SyncFET™
TCM™
The Power Franchise®
™
TinyBoost™
TinyBuck™
TinyLogic®
TINYOPTO™
TinyPower™
TinyWire™
TruTranslation™
μSerDes™
UHC®
UniFET™
VCX™
Wire™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild Semiconductor. The datasheet is printed for reference information only.

Rev. I25