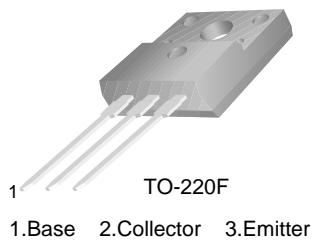


FJPF13009

NPN Silicon Transistor

High Voltage Switch Mode Application

- High Voltage Capability
- High Switching Speed
- Suitable for Motor Control and Switching Mode Power Supply



Absolute Maximum Ratings*

$T_C = 25^\circ\text{C}$ unless otherwise noted (notes_1)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	12	A
I_{CP}	Collector Current (Pulse)	24	A
I_B	Base Current	6	A
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-65 ~ 150	$^\circ\text{C}$

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

NOTES_1:

1) These ratings are based on a maximum junction temperature of 150°C .

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

h_{FE} Classification

Classification	H1	H2
h_{FE1}	8 ~ 17	15 ~ 28

Electrical Characteristics

$T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
$V_{CEO}(\text{sus})$	Collector-Emitter Sustaining Voltage	$I_C = 10\text{mA}, I_B = 0$	400			V
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 9\text{V}, I_C = 0$			1	mA
h_{FE}	* DC Current Gain	$V_{CE} = 5\text{V}, I_C = 5\text{A} (h_{FE1})$ $V_{CE} = 5\text{V}, I_C = 8\text{A}$	8 6		40 30	
$V_{CE}(\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C = 5\text{A}, I_B = 1\text{A}$ $I_C = 8\text{A}, I_B = 1.6\text{A}$ $I_C = 12\text{A}, I_B = 3\text{A}$			1 1.5 3	V V V
$V_{BE}(\text{sat})$	* Base-Emitter Saturation Voltage	$I_C = 5\text{A}, I_B = 1\text{A}$ $I_C = 8\text{A}, I_B = 1.6\text{A}$			1.2 1.6	V V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, f = 0.1\text{MHz}$		180		pF
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$	4			MHz
t_{ON}	Turn On Time	$V_{CC} = 125\text{V}, I_C = 8\text{A}$ $I_{B1} = -I_{B2} = 1.6\text{A}, R_L = 15,6\Omega$			1.1	μs
t_{STG}	Storage Time				3	μs
t_F	Fall Time				0.7	μs

* Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 2%

Package Marking and Ordering Information

Device Item (notes_2)	Device Marking	Package	Packing Method	Remarks
FJPF13009TU	J13009	TO-220F	TUBE	
FJPF13009TTU	J13009	TO-220F	TUBE	Potting Type
FJPF13009H2TU	J130092	TO-220F	TUBE	

Notes_2 :

- 1) The Affix “-H2” means the hFE classification.
- 2) The Affix “-T” means the TO220F Potting type package option.
- 3) The Suffix “-TU” means the Tube packing method, which can be on fairchildsemi website at <http://www.fairchildsemi.com/packaging>.

Typical Performance Characteristics

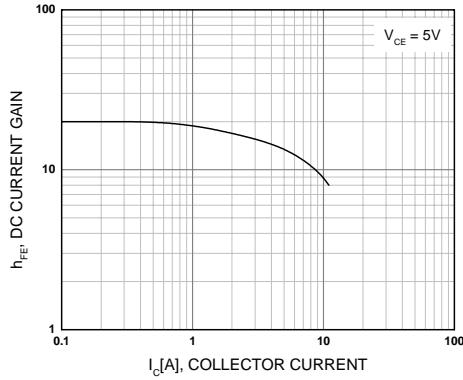


Figure 1. DC current Gain

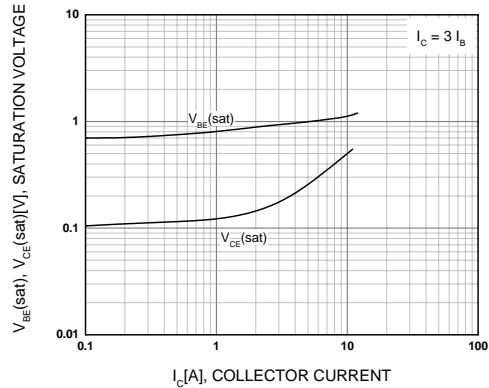


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

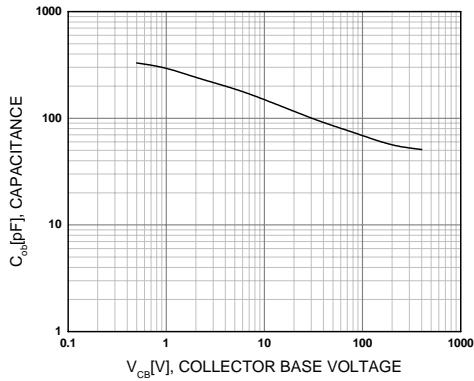


Figure 3. Collector Output Capacitance

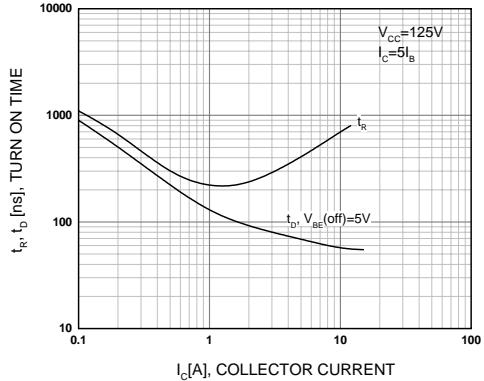


Figure 4. Turn On Time

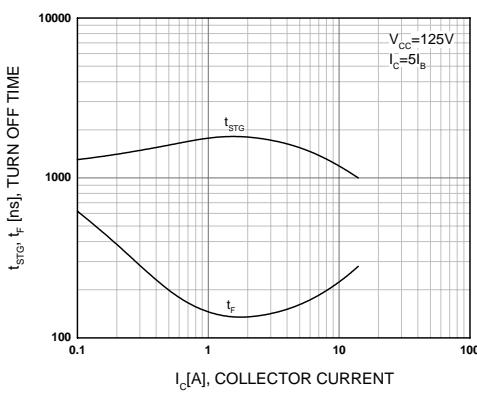


Figure 5. Turn Off Time

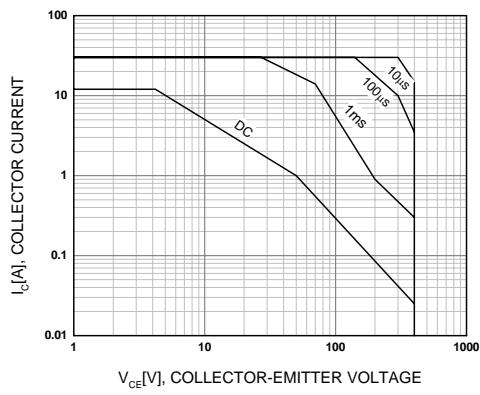


Figure 6. Forward Bias Safe Operating Area

Typical Performance Characteristics (Continued)

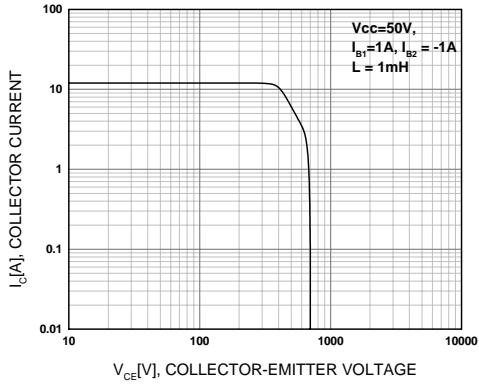


Figure 7. Reverse Bias Safe Operating Area

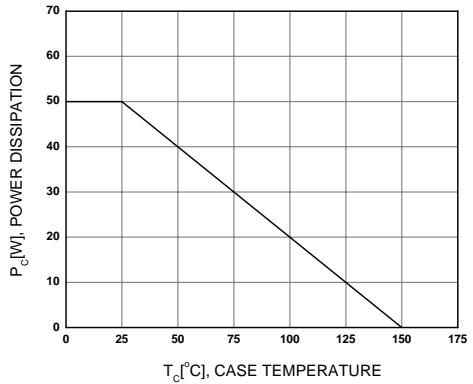


Figure 8. Power Derating



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2. A critical component is 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.

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Datasheet Identification	Product Status	Definition
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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. I31

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"LifeElectronics" LLC

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- Работу по проектам и поставку образцов.
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- Техническую поддержку проекта.
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- Изготовление тестовой платы монтаж и пусконаладочные работы.



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