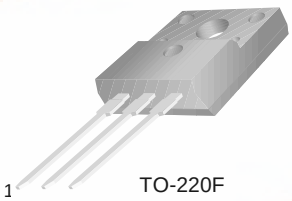
FAIRCHILD SEMICONDUCTOR®

FJPF13007

High Voltage Switch Mode Application

- High Speed Switching
- Suitable for Switching Regulator and Motor Control



TO-220F

1.Base 2.Collector 3.Emitter

NPN Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

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)	8	A
I_{CP}	Collector Current (Pulse)	16	A
I_B	Base Current	4	A
P_C	Collector Dissipation (T_C=25°C)	40	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Base Breakdown Voltage	I_C = 10mA, I_B = 0	400			V
I_{EBO}	Emitter Cut-off Current	V_{EB} = 9V, I_C = 0			1	mA
h_{FE}	DC Current Gain	V_{CE} = 5V, I_C = 2A V_{CE} = 5V, I_C = 5A	8 5		60 30	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 2A, I_B = 0.4A I_C = 5A, I_B = 1A I_C = 8A, I_B = 2A			1 2 3	V V V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 2A, I_B = 0.4A I_C = 5A, I_B = 1A			1.2 1.6	V V
C_{ob}	Output Capacitance	V_{CB} = 10V , f = 0.1MHz		110		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.5A	4			MHz
t_{ON}	Turn On Time	V_{CC} =125V, I_C = 5A I_{B1} = - I_{B2} = 1A R_L = 50Ω			1.6	µs
t_{STG}	Storage Time				3	µs
t_F	Fall Time				0.7	µs

* Pulse Test: PW≤300µs, Duty Cycle≤2%

h_{FE} Classification

Classification	R(H1)	O(H2)
h_{FE1}	15 ~ 28	26 ~ 39

Typical Characteristics

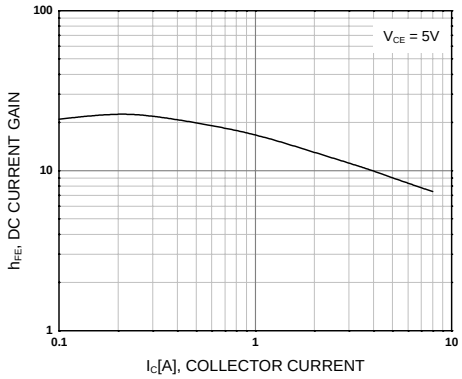


Figure 1. DC current Gain

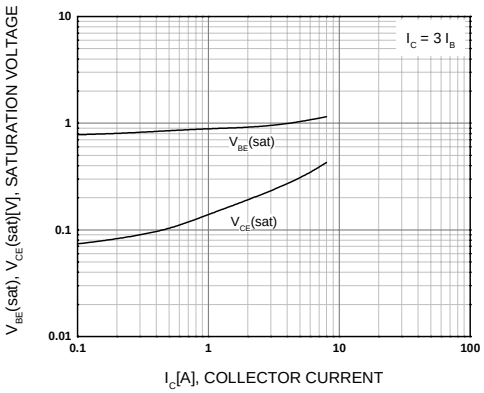


Figure 2. Saturation Voltage

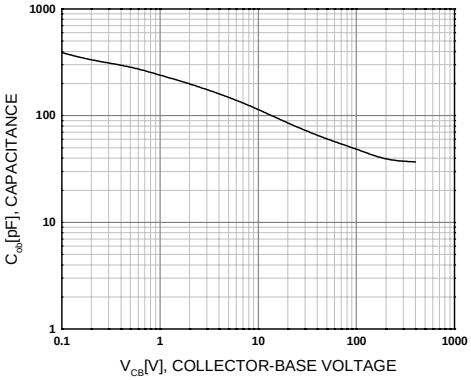


Figure 3. Collector Output Capacitance

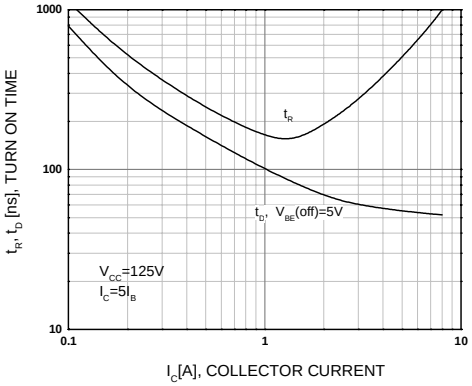


Figure 4. Turn On Time

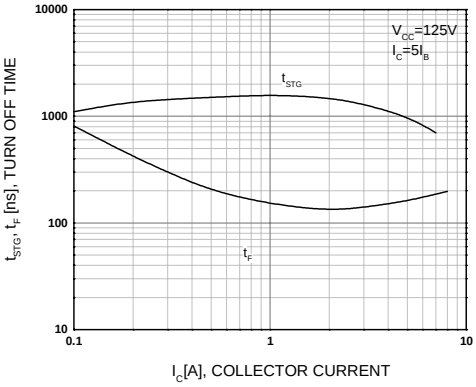


Figure 5. Turn Off Time

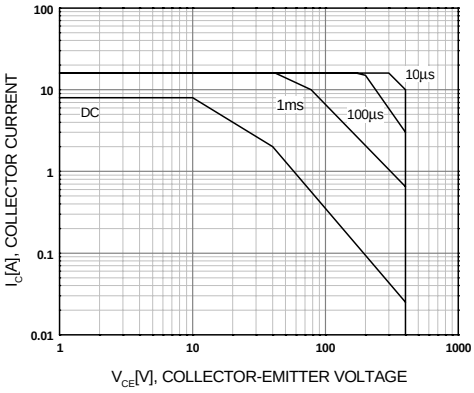


Figure 6. Forward Biased Safe Operating Area

Typical Characteristics (Continued)

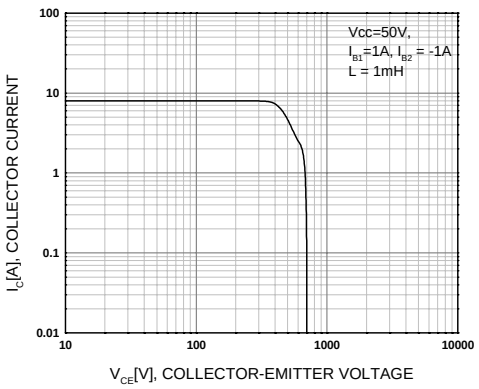


Figure 7. Reverse Biased Safe Operating Area

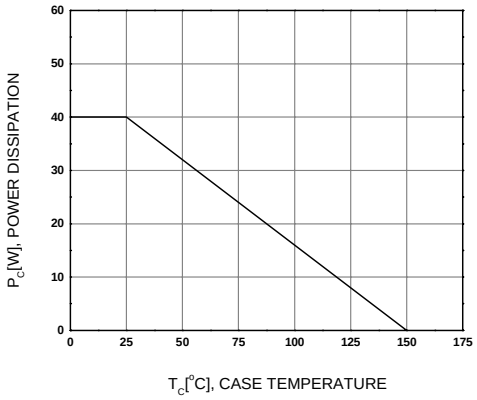
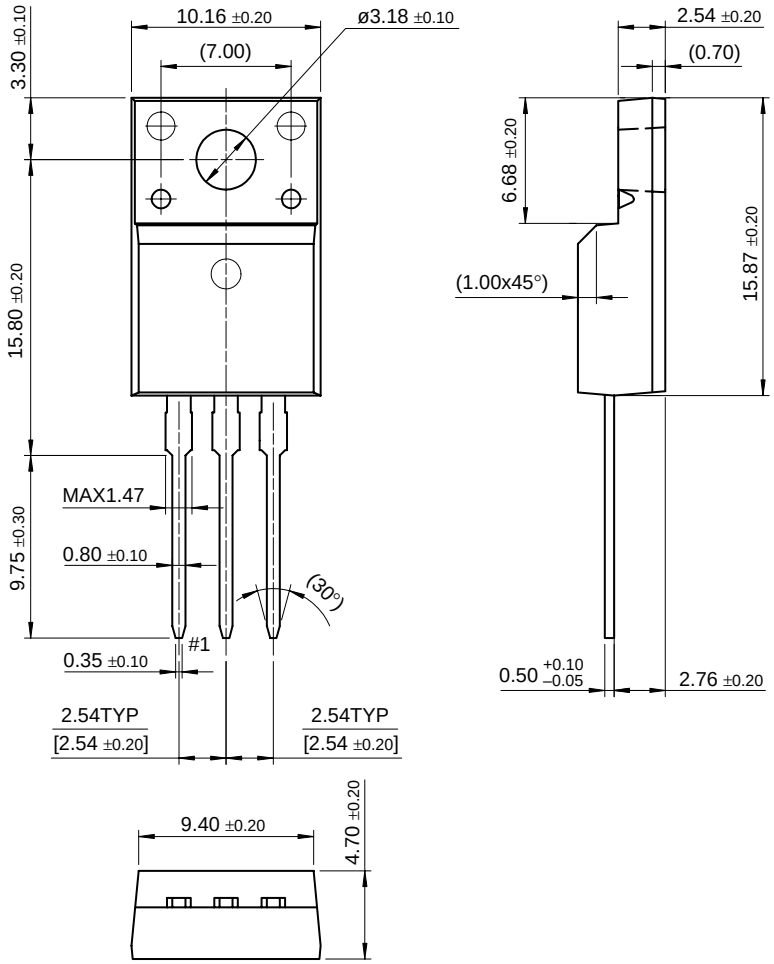


Figure 8. Power Derating

Package Dimensions

TO-220F



Dimensions in Millimeters

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CROSSVOLT™	GlobalOptoisolator™	MicroPak™	QS™	SyncFET™
DOME™	GTO™	MICROWIRE™	QT Optoelectronics™	TinyLogic®
EcoSPARK™	HiSeC™	MSX™	Quiet Series™	TINYOPTO™
E^2CMOS™	I^2C™	MSXPro™	RapidConfigure™	TruTranslation™
EnSigna™	*i-Lo*™	OCX™	RapidConnect™	UHC™
FACT™	ImpliedDisconnect™	OCXPro™	µSerDes™	UltraFET®
FACT Quiet Series™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
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The Power Franchise®		PACMAN™	SPM™	
Programmable Active Droop™		POP™	Stealth™	

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