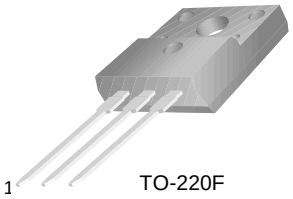
FAIRCHILD
SEMICONDUCTOR®

FJPF5027

High Voltage and High Reliability

- High Speed Switching
- Wide SOA



1 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	1100	V
V_{CEO}	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	3	A
I_{CP}	Collector Current (Pulse)	10	A
I_B	Base Current	1.5	A
P_C	Collector Dissipation (T_C=25°C)	40	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 1mA, I_E = 0	1100			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 5mA, I_B = 0	800			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 1mA, I_C = 0	7			V
V_{CEX}(sus)	Collector-Emitter Sustaining Voltage	I_C = 1.5A, I_{B1} = -I_{B2} = 0.3A L = 2mH, Clamped	800			V
I_{CBO}	Collector Cut-off Current	V_{CB} = 800V, I_E = 0			10	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			10	µA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE} = 5V, I_C = 0.2A V_{CE} = 5V, I_C = 1A	10 8		40	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 1.5A, I_B = 0.3A			2	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 1.5A, I_B = 0.3A			1.5	V
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz		60		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.2A		15		MHz
t_{ON}	Turn On Time	V_{CC} = 400V I_C = 5I_{B1} = -2.5I_{B2} = 2A R_L = 200Ω			0.5	µs
t_{STG}	Storage Time				3	µs
t_F	Fall Time				0.3	µs

h_{FE} Classification

Classification	N	R	O
h_{FE1}	10 ~ 20	15 ~ 30	20 ~ 40

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Typical Characteristics

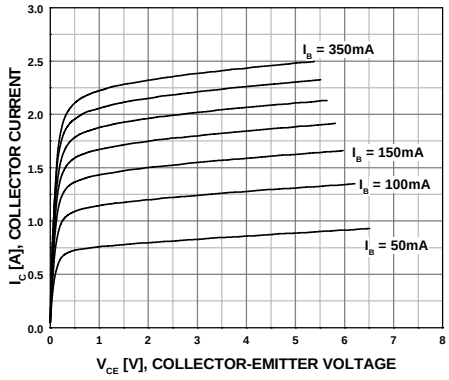

Figure 1. Static Characteristic

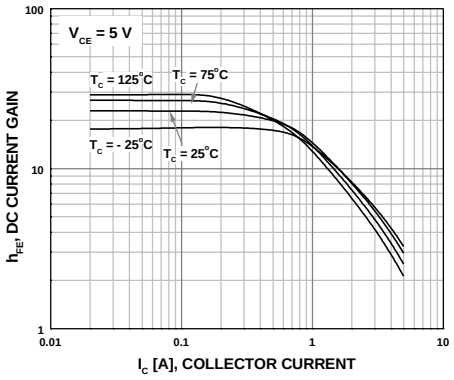

Figure 2. DC current Gain

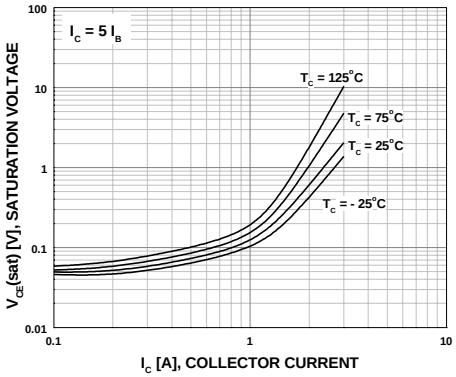

Figure 3. Saturation Voltage

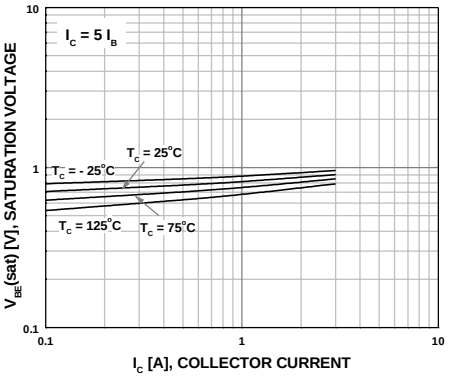

Figure 4. Saturation Voltage

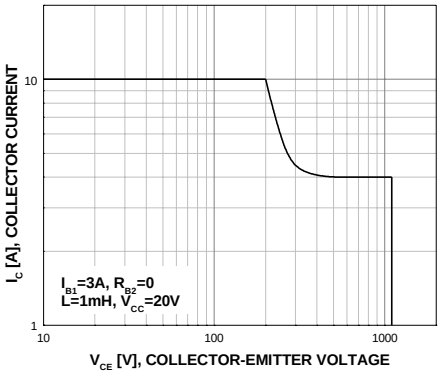

Figure 5. Reverse Bias Safe Operating Area

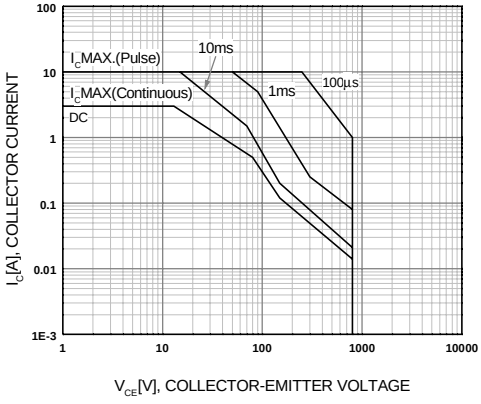

Figure 6. Forward Bias Safe Operating Area

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Typical Characteristics (Continued)

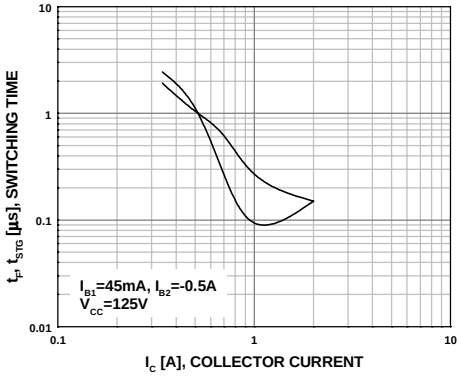

Figure 7. Resistive Load Switching Characteristics

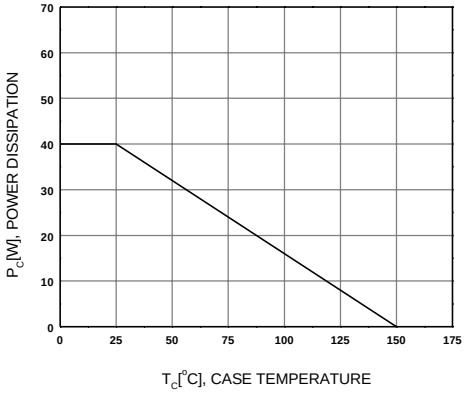

Figure 8. Power Derating

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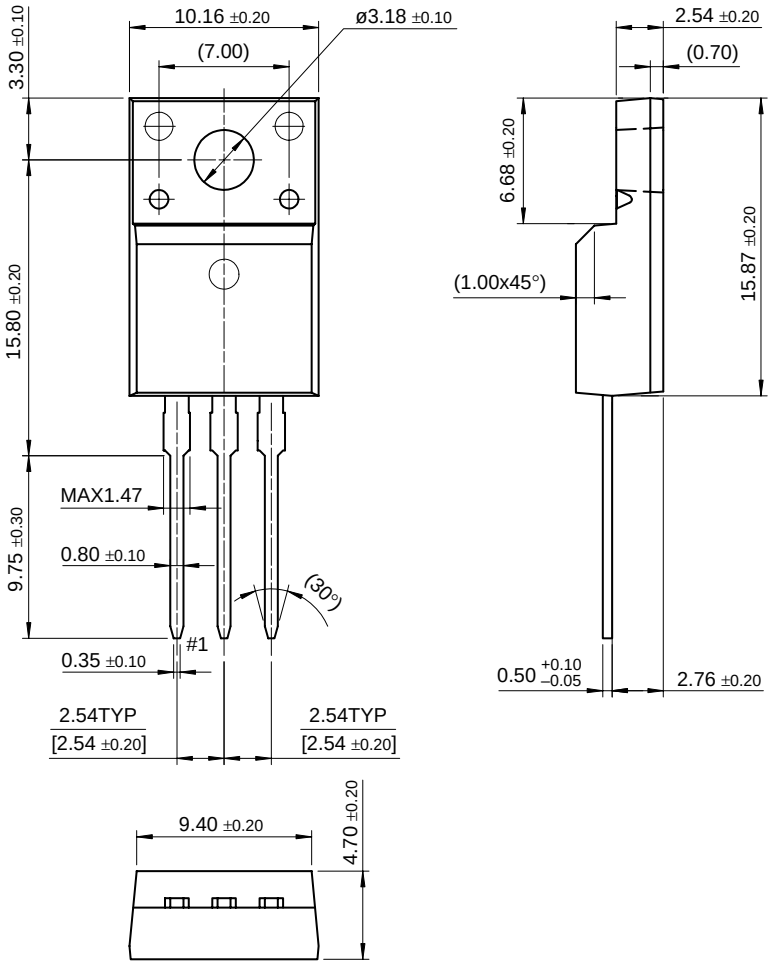
Package Dimensions

TO-220F



Dimensions in Millimeters

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CoolFET™	FRFET™	MicroPak™	QS™	SyncFET™
CROSSVOLT™	GlobalOptoisolator™	MICROWIRE™	QT Optoelectronics™	TinyLogic®
DOME™	GTO™	MSX™	Quiet Series™	TINYOPTO™
EcoSPARK™	HiSeC™	MSXPro™	RapidConfigure™	TruTranslation™
E^2CMOS™	I^2C™	OCX™	RapidConnect™	UHC™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	UltraFET®
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Programmable Active Droop™		POP™	SuperFET™	

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