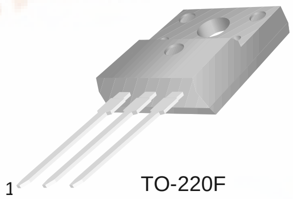
FAIRCHILD SEMICONDUCTOR®

FJPF5321

High Voltage and High Reliability

- High speed Switching
- Wide Safe Operating Area



TO-220F

1.Base 2.Collector 3.Emitter

NPN Triple Diffused Planar Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	5	A
I_{CP}	*Collector Current (Pulse)	10	A
I_B	Base Current (DC)	2	A
I_{BP}	*Base Current (Pulse)	4	A
P_C	Power Dissipation(T_C=25°C)	40	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* Pulse Test: Pulse Width = 5ms, Duty Cycle≤10%

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	800	-	-	V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 5mA, I_B = 0	500	-	-	V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_C =1mA, I_C = 0	7	-	-	V
I_{CBO}	Collector Cut-off Current	V_{CB} = 800V, I_E = 0	-	-	100	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 7V, I_C = 0	-	-	10	µA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE} = 5V, I_C = 0.6A V_{CE} = 5V, I_C = 3A	15 8	- -	40 -	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 3A, I_B = 0.6A	-	-	1.0	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 3A, I_B = 0.6A	-	-	1.5	V
f_T	Current Gain bandwidth Product	V_{CE}= 10V, I_C = 0.6A	-	14	-	MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz	-	65	100	pF
C_{ib}	Input Capacitance	V_{EB} = 7V, I_C = 0, f = 1MHz	-	1400	2000	pF
t_{ON}	Turn On Time	V_{CC} = 125V, I_C = 1A I_{B1} = -I_{B2} = 0.2A R_L = 125Ω	-	-	0.5	µs
t_{STG}	Storage Time			-	6.5	µs
t_F	Fall Time		-	-	0.3	µs
t_{ON}	Turn On Time	V_{CC} = 250V, I_C = 4A I_{B1} = 0.8A, I_{B2} = -1.6A R_L = 62.5Ω	-	-	0.5	µs
t_{STG}	Storage Time		-	-	3.0	µs
t_F	Fall Time		-	-	0.3	µs

Thermal Characteristics T_C=25°C unless otherwise noted

Symbol	Characteristics		Rating	Unit
$R_{\theta jc}$	Thermal Resistance	Junction to Case	3.1	°C/W
$R_{\theta ja}$		Junction to Ambient	62.5	

Typical Characteristics

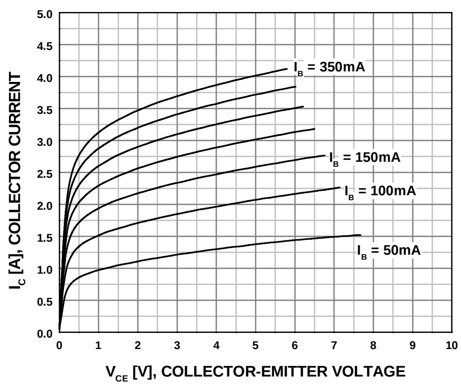


Figure 1. Static Characteristic

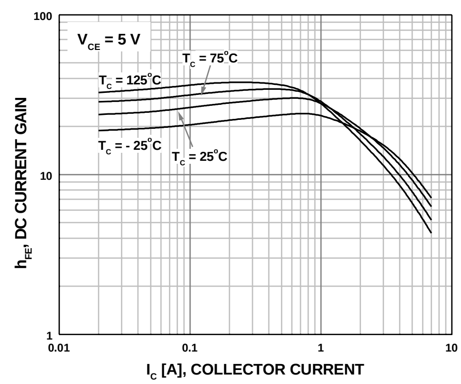


Figure 2. DC current Gain

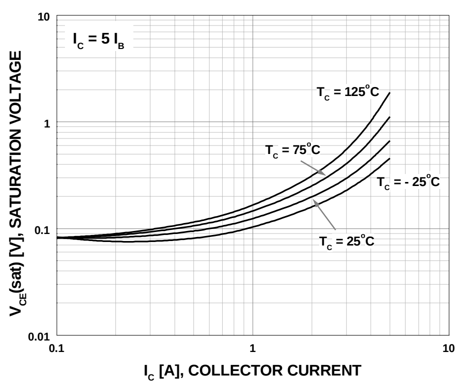


Figure 3. Saturation Voltage

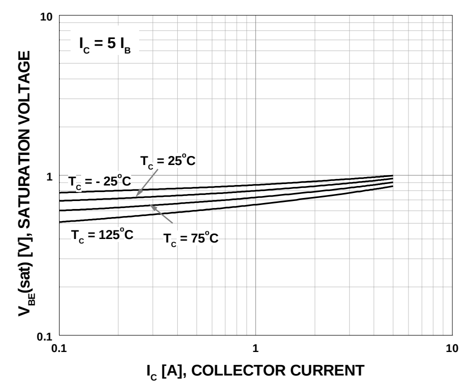


Figure 4. Saturation Voltage

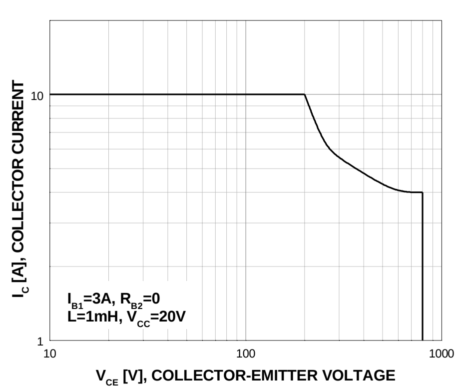


Figure 5. Reverse Bias Safe Operating Area

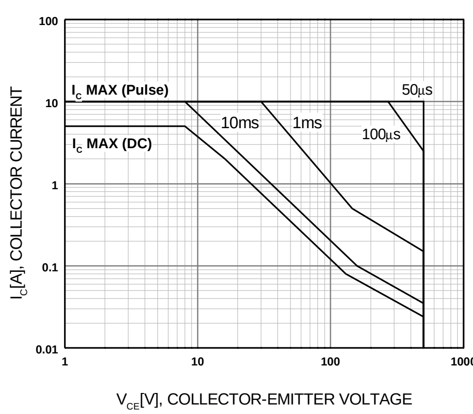


Figure 6. Forward Bias Safe Operating Area

Typical Characteristics (Continued)

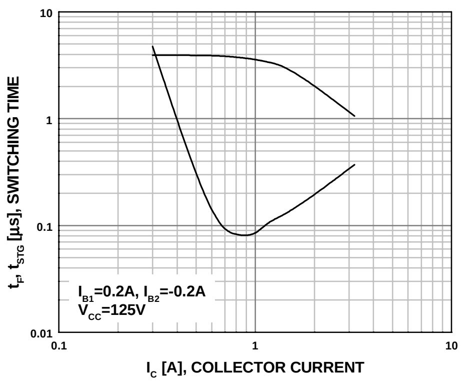


Figure 7. Resistive Load Switching Time

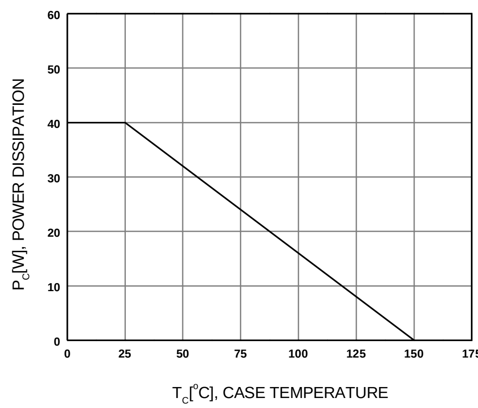
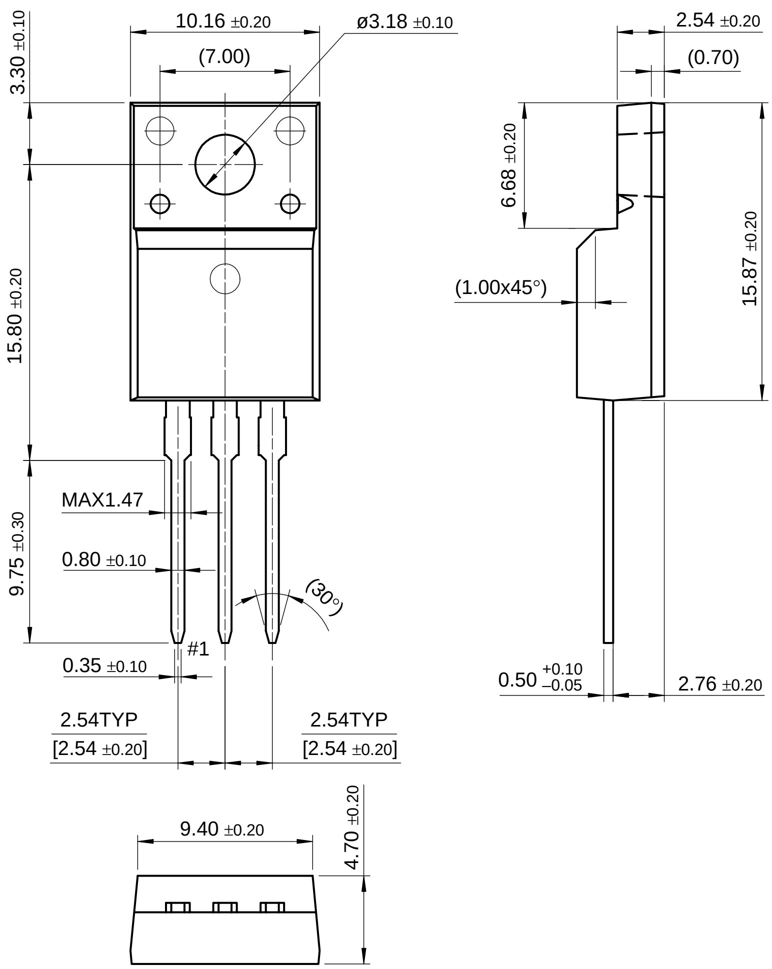


Figure 8. Power Derating

Package Dimensions

TO-220F



Dimensions in Millimeters

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EcoSPARK™	HiSeC™	MSXPro™	RapidConfigure™	TruTranslation™
E^2CMOS™	I^2C™	OCX™	RapidConnect™	UHC™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	UltraFET®
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