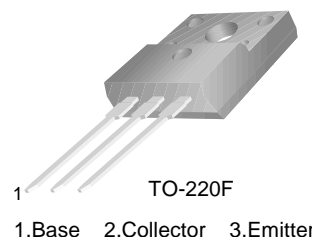


# FJPF5027

## High Voltage and High Reliability

- High Speed Switching
- Wide SOA



## NPN Silicon Transistor

### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ 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 ( $T_C=25^\circ\text{C}$ )	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

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

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

## $h_{FE}$ Classification

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

# Typical Characteristics

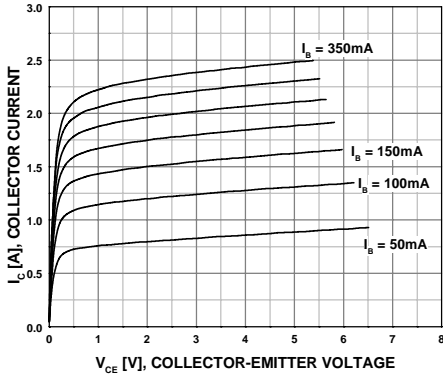


Figure 1. Static Characteristic

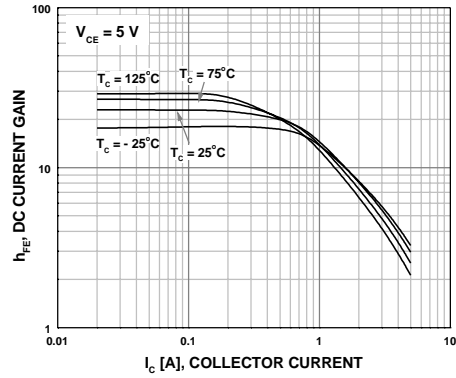


Figure 2. DC current Gain

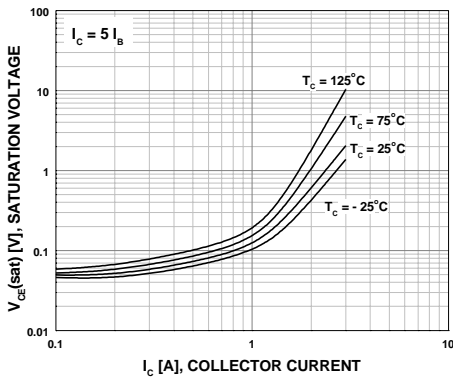


Figure 3. Saturation Voltage

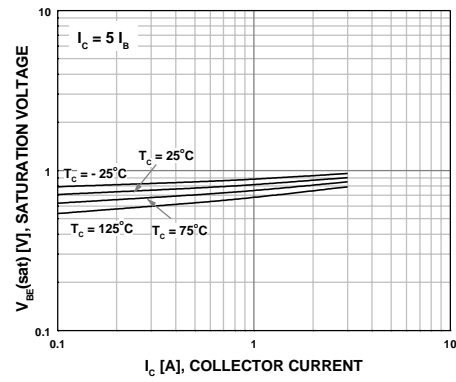


Figure 4. Saturation Voltage

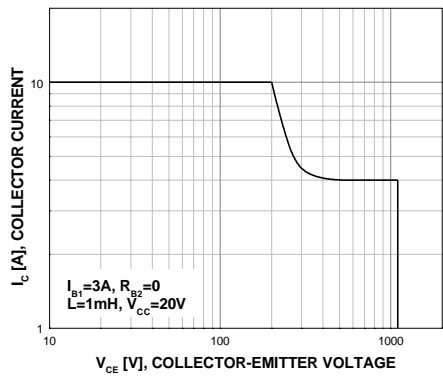


Figure 5. Reverse Bias Safe Operating Area

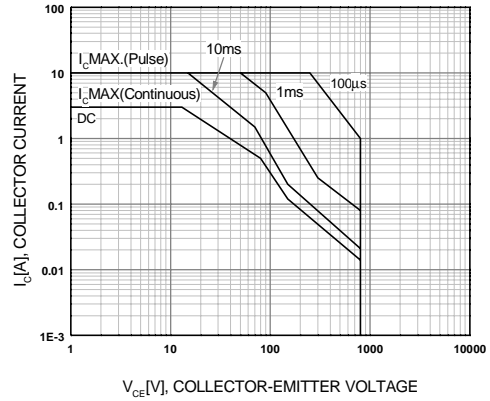


Figure 6. Forward Bias Safe Operating Area

Typical Characteristics (Continued)

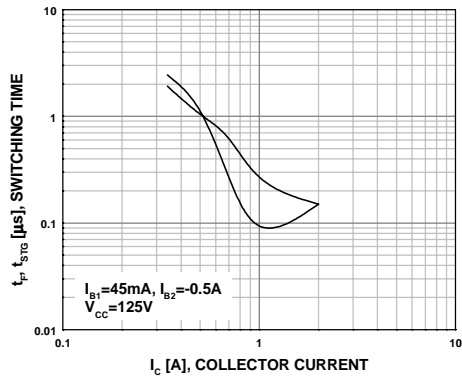


Figure 7. Resistive Load Switching Characteristics

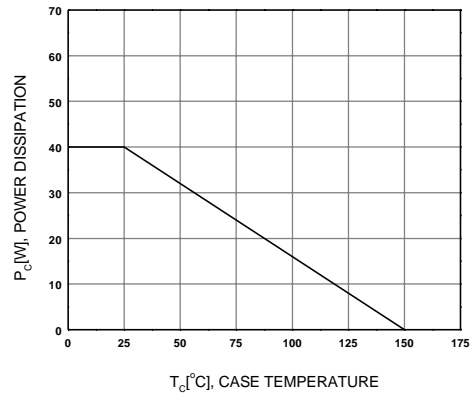
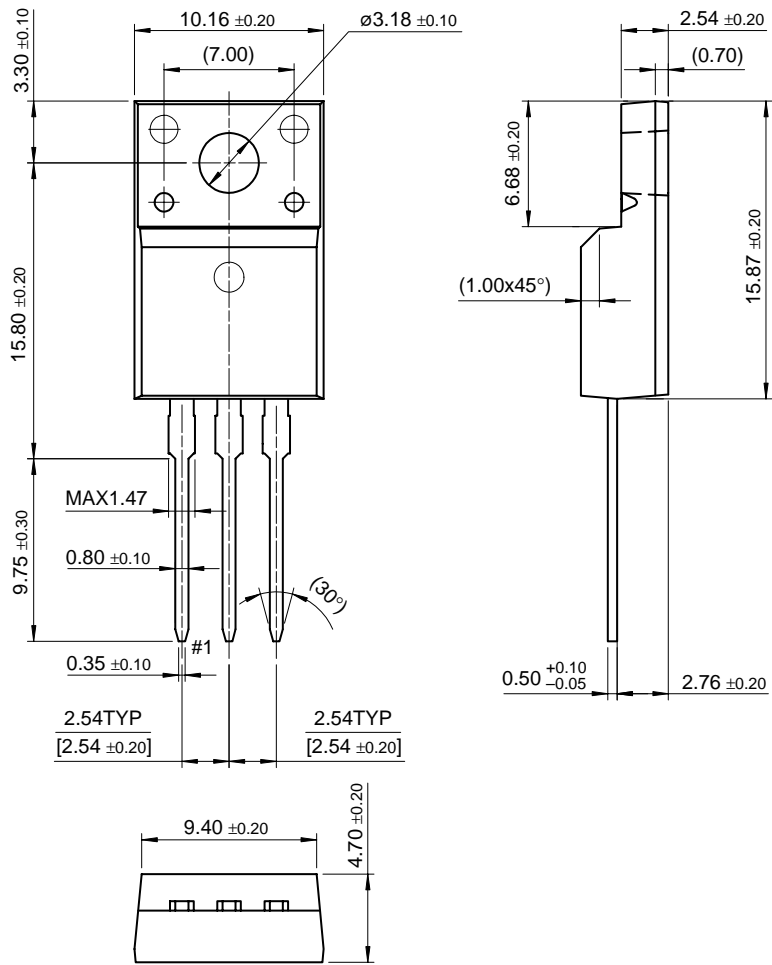


Figure 8. Power Derating

# Package Dimensions

FJPF5027

## TO-220F



Dimensions in Millimeters

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