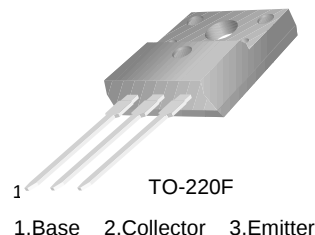


FJPF5027

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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			10	μA
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	$V_{CC} = 400\text{V}$ $I_C = 5\text{I}_{B1} = -2.5\text{I}_{B2} = 2\text{A}$ $R_L = 200\Omega$			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

Typical Characteristics

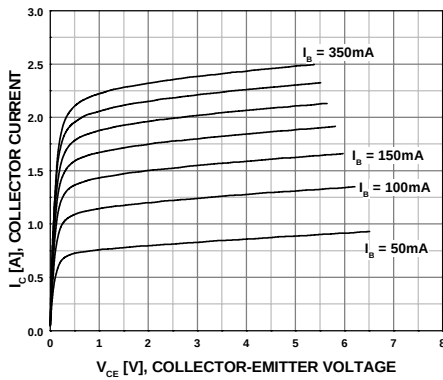


Figure 1. Static Characteristic

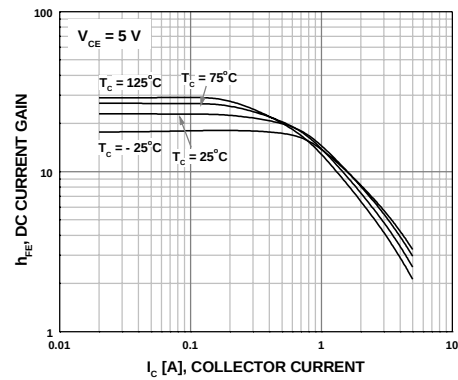


Figure 2. DC current Gain

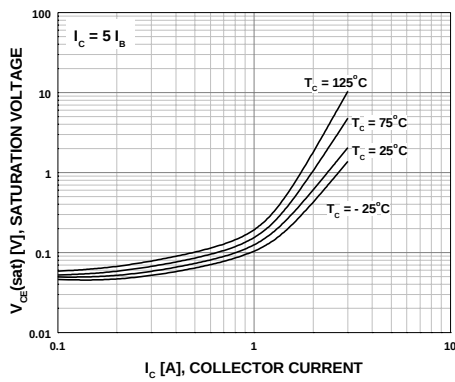


Figure 3. Saturation Voltage

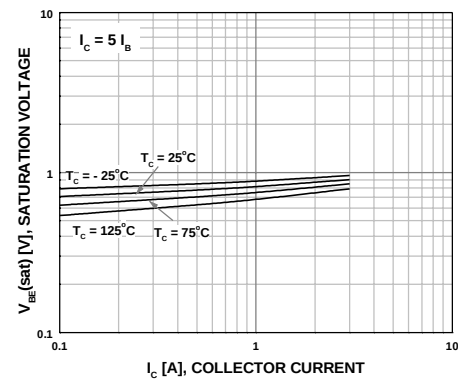


Figure 4. Saturation Voltage

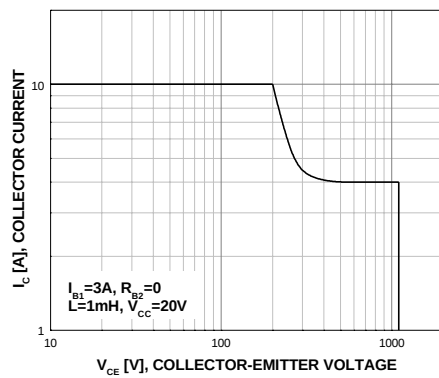


Figure 5. Reverse Bias Safe Operating Area

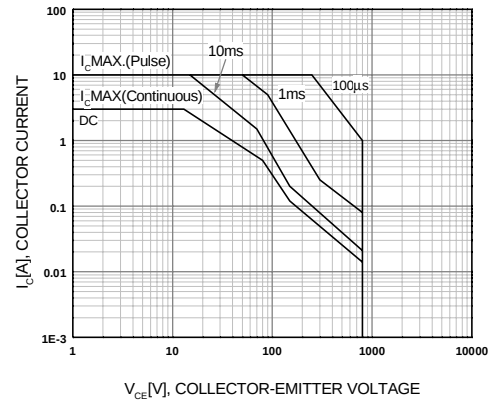


Figure 6. Forward Bias Safe Operating Area

Typical Characteristics (Continued)

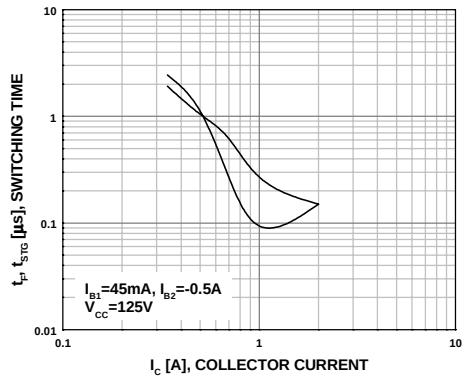


Figure 7. Resistive Load Switching Characteristics

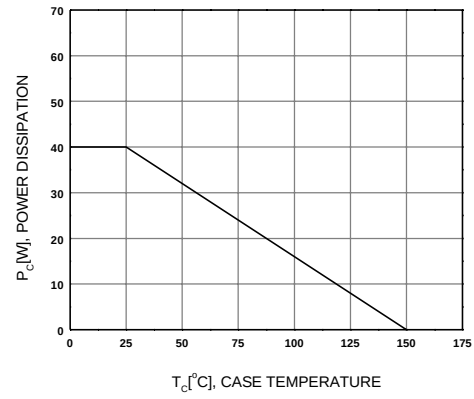


Figure 8. Power Derating

Technical drawing of a 3-pin connector showing three views: front, side, and top.

Front View Dimensions:

- Overall width: 10.16 ± 0.20
- Pin pitch (center-to-center): 7.00
- Pin diameter: $\varnothing 3.18 \pm 0.10$
- Top flange height: 3.30 ± 0.10
- Overall height (excluding pins): 15.80 ± 0.20
- Pin length (excluding top flange): 9.75 ± 0.30
- Pin diameter (excluding tip): 0.80 ± 0.10
- Pin tip diameter: 0.35 ± 0.10
- Pin tip angle: 30°
- Pin material specification: 2.54TYP [2.54 ± 0.20]

Side View Dimensions:

- Top flange thickness: 2.54 ± 0.20
- Flange width: 0.70
- Flange height: 6.68 ± 0.20
- Pin length (including top flange): 15.87 ± 0.20
- Pin diameter (including top flange): $1.00 \times 45^\circ$
- Pin diameter (excluding top flange): $0.50^{+0.10}_{-0.05}$
- Pin length (excluding top flange): 2.76 ± 0.20

Top View Dimensions:

- Overall width: 9.40 ± 0.20
- Overall height: 4.70 ± 0.20

Rev. A, December 2003

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