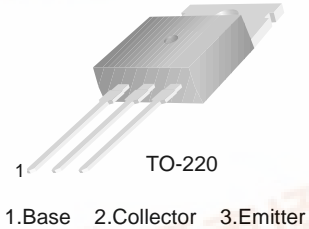


FAIRCHILD
SEMICONDUCTOR®

FJP5355

High Voltage Switch Mode Application

- High Speed Switching
- Very Low Switching Losses
- Very Low Operating Temperature
- Wide RBSOA



NPN Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CB0}	Collector-Base Voltage	900	V
V_{CEO}	Collector-Emitter Voltage	440	V
V_{EBO}	Emitter- Base Voltage	14.5	V
I_C	Collector Current (DC)	5	A
I_{CP}	Collector Current (Pulse)	7.5	A
I_B	Base Current	2.5	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CB0}	Collector- Base Breakdown Voltage	$I_C = 500\mu\text{A}, I_E = 0$	900			V
BV_{CEO}	Collector- Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_B = 0$	440			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 500\mu\text{A}, I_C = 0$	14.5			V
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 12\text{V}, I_C = 0$			1	μA
h_{FE}	*DC Current Gain	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$ $V_{CE} = 2\text{V}, I_C = 0.8\text{A}$ $V_{CE} = 2\text{V}, I_C = 2.5\text{A}$	15 15 7			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 0.8\text{A}, I_B = 0.2\text{A}$ $I_C = 2.5\text{A}, I_B = 0.8\text{A}$			0.2 0.4	V V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 0.8\text{A}, I_B = 0.2\text{A}$ $I_C = 2.5\text{A}, I_B = 0.8\text{A}$			1.0 1.2	V V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.2\text{A}$	4			MHz
t_{ON}	Turn On Time	$V_{CC} = 125\text{V}, I_C = 0.5\text{A}$			1.1	μs
t_{STG}	Storage Time	$I_{B1} = 45\text{mA}, -I_{B2} = 0.5\text{A}$ $PW=300\mu\text{s}$			1.2	μs
t_F	Fall Time				0.4	μs

* Pulse test: $PW \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$



Typical Characteristics

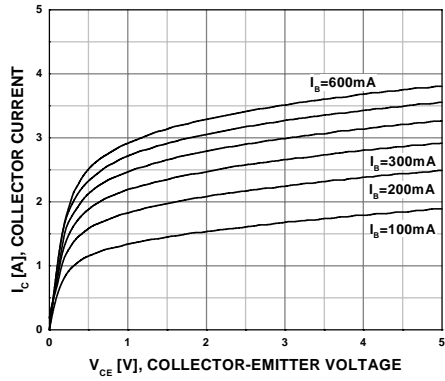


Figure 1. Static Characteristic

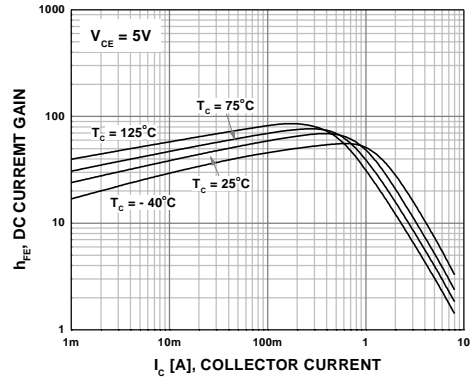


Figure 2. DC Current Gain

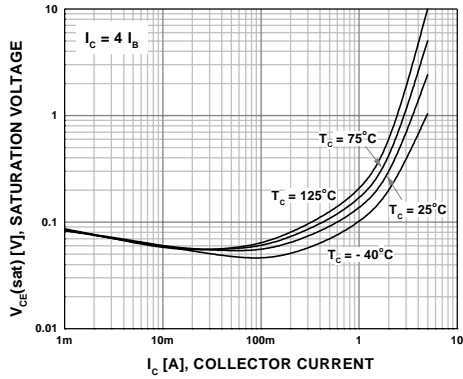


Figure 3. Saturation Voltage

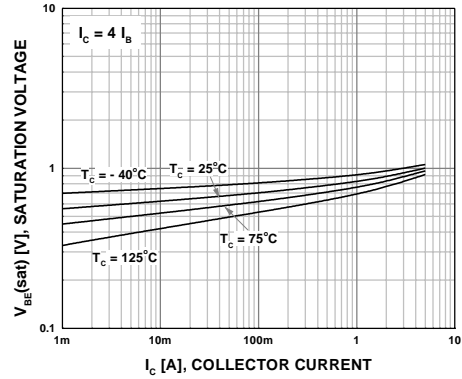


Figure 4. Saturation Voltage

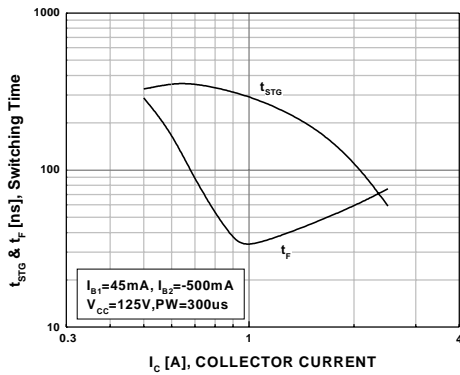


Figure 5. Resistive Load Switching

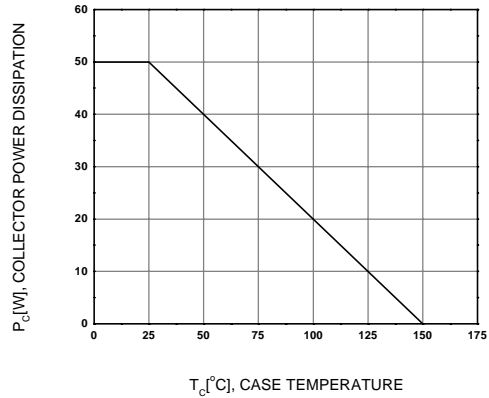


Figure 6. Power Derating Curve

Typical Characteristics (Continued)

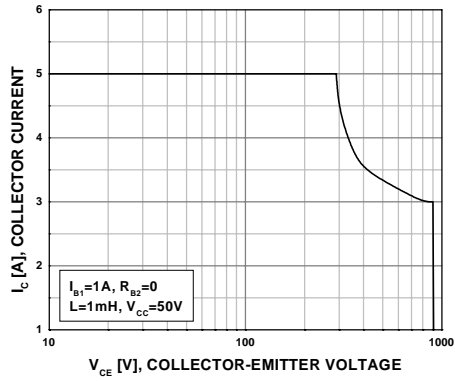


Figure 7. Reverse Biased Safe Operating Area

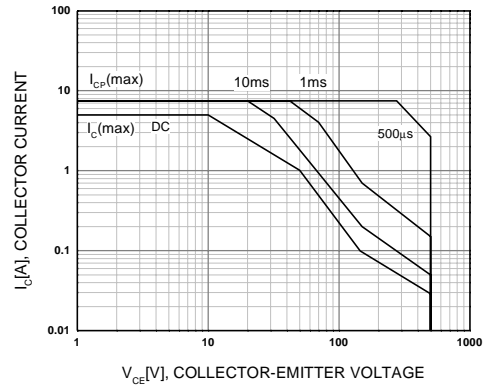
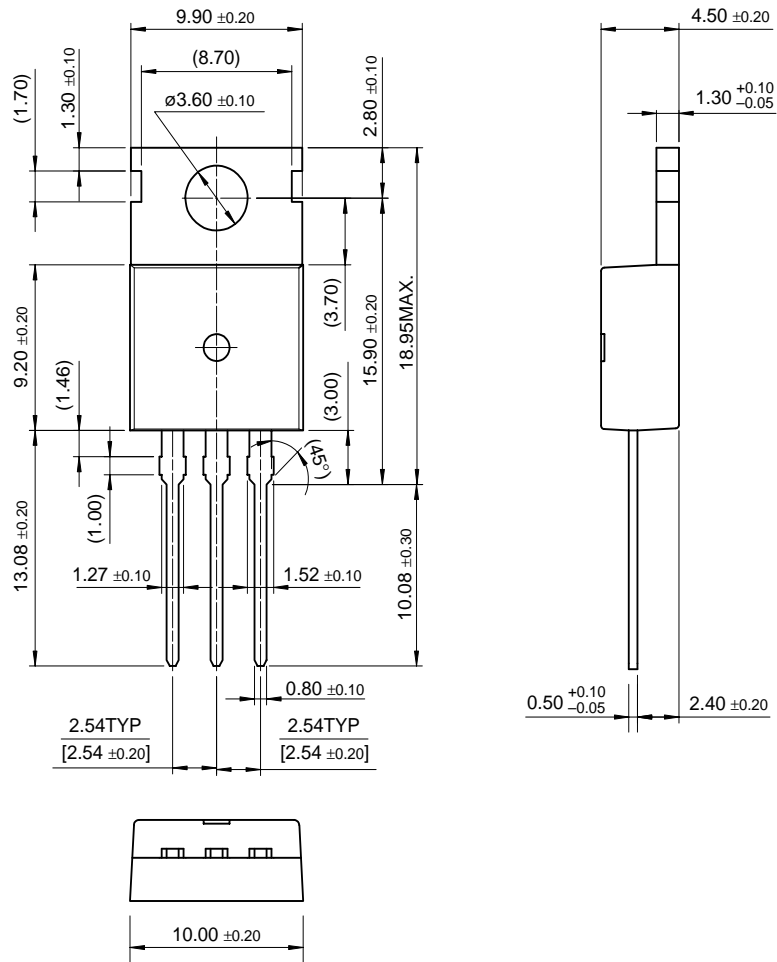


Figure 8. Forward Biased Safe Operating Area

Package Dimensions

TO-220



Dimensions in Millimeters

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EcoSPARK™	HiSeC™	MSXPro™	RapidConfigure™	UHC™
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EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	VCX™
FACT™	ISOPLANAR™	OPTOLOGIC®	SMART START™	
Across the board. Around the world.™		OPTOPLANAR™	SPM™	
The Power Franchise™		PACMAN™	Stealth™	
Programmable Active Droop™		POP™	SuperSOT™-3	

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