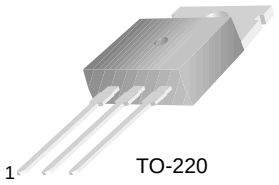
FAIRCHILD
SEMICONDUCTOR®

FJP3305

High Voltage Switch Mode Application

- High Speed Switching
- Suitable for Electronic Ballast and Switching Regulator



TO-220

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	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	4	A
I_{CP}	Collector Current (Pulse)	8	A
I_B	Base Current	2	A
P_C	Collector Dissipation (T_C=25°C)	75	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 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=500μA, I_E=0	700			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=5mA, I_B=0	400			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=500μA, I_C=0	9			V
I_{CBO}	Collector Cut-off Current	V_{CB}=700V, I_E=0			1	μA
I_{EBO}	Emitter Cut-off Current	V_{EB}=9V, I_C=0			1	μA
h_{FE1}	* DC Current Gain	V_{CE}=5V, I_C=1A	19		35	
h_{FE2}		V_{CE}=5V, I_C=2A	8		40	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C=1A, I_B=0.2A			0.5	V
		I_C=2A, I_B=0.5A			0.6	V
		I_C=4A, I_B=1A			1	V
V_{BE}(sat)	Base-Emitter On Voltage	I_C=1A, I_B=0.2A			1.2	V
		I_C=2A, I_B=0.5A			1.6	V
f_T	Current Gain Bandwidth Product	V_{CE}=5V, I_C=1A	4			MHz
C_{ob}	Output Capacitance	V_{CB}=10V, f=1MHz		65		pF
t_{ON}	Turn On Time	V_{CC}=125V, I_C=2A=5I_{B1}=-5I_{B2} R_L=62.5Ω			0.8	μs
t_{STG}	Storage Time				4	μs
t_F	Fall Time				0.9	μs

* Pulse test: PW≤300μs, Duty Cycle≤2%

h_{FE} Classification

Classification	R	O
h_{FE2}	19 ~ 28	26 ~ 35

Typical Characteristics

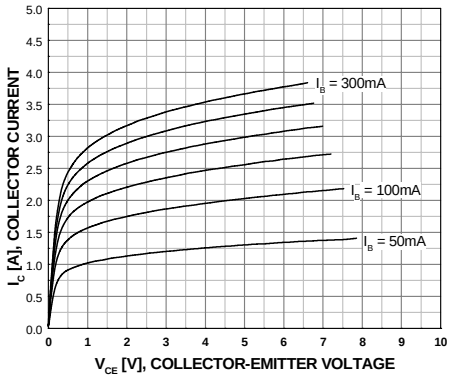


Figure 1. Static Characteristics

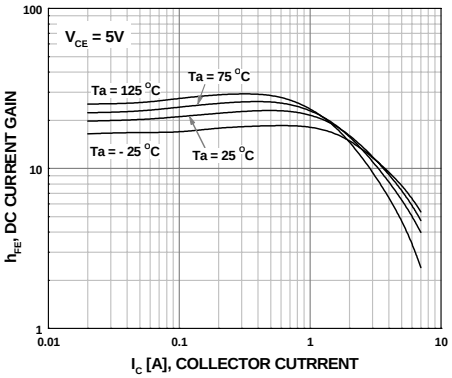


Figure 2. DC Current Gain(R-Grade)

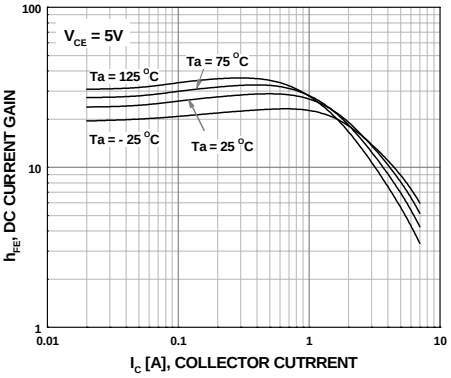


Figure 3. DC Current Gain(O-Grade)

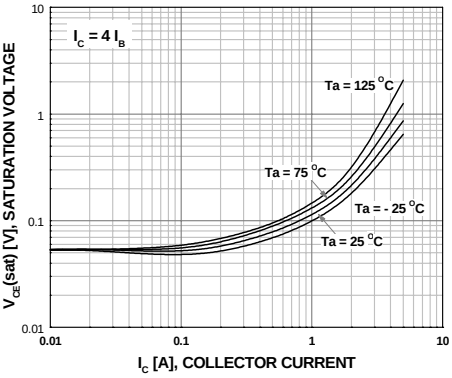


Figure 4. Saturation Voltage(R-Grade)

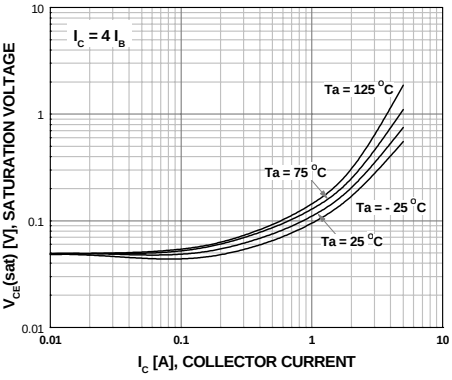


Figure 5. Saturation Voltage(O-Grade)

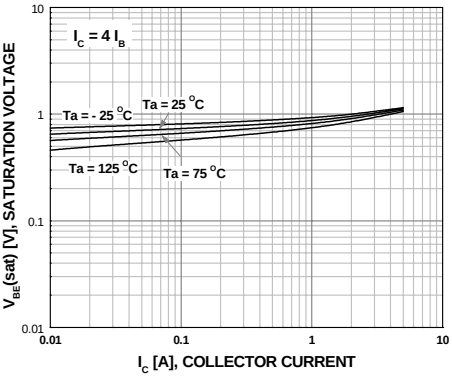


Figure 6. Saturation Voltage(R-Grade)

Typical Characteristics (Continued)

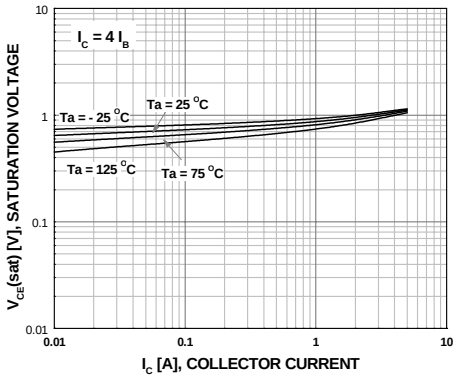


Figure 7. Saturation Voltage(O-Grade)

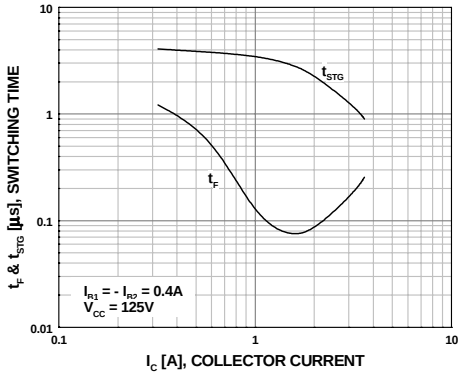


Figure 8. Switching Time

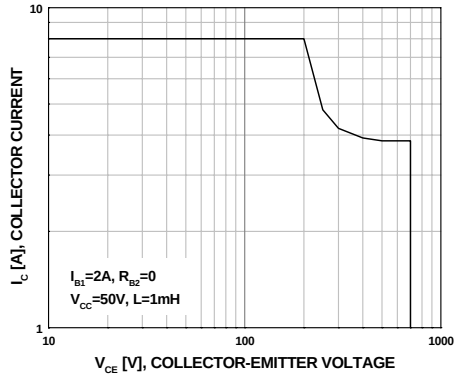


Figure 9. Reverse Biased Safe Operating Area

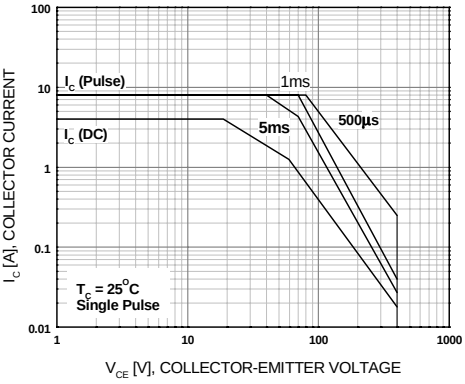


Figure 10. Forward Biased Safe Operating Area

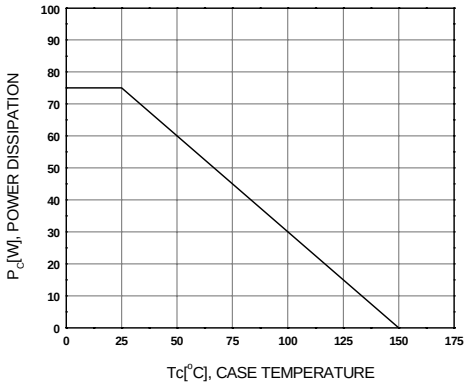
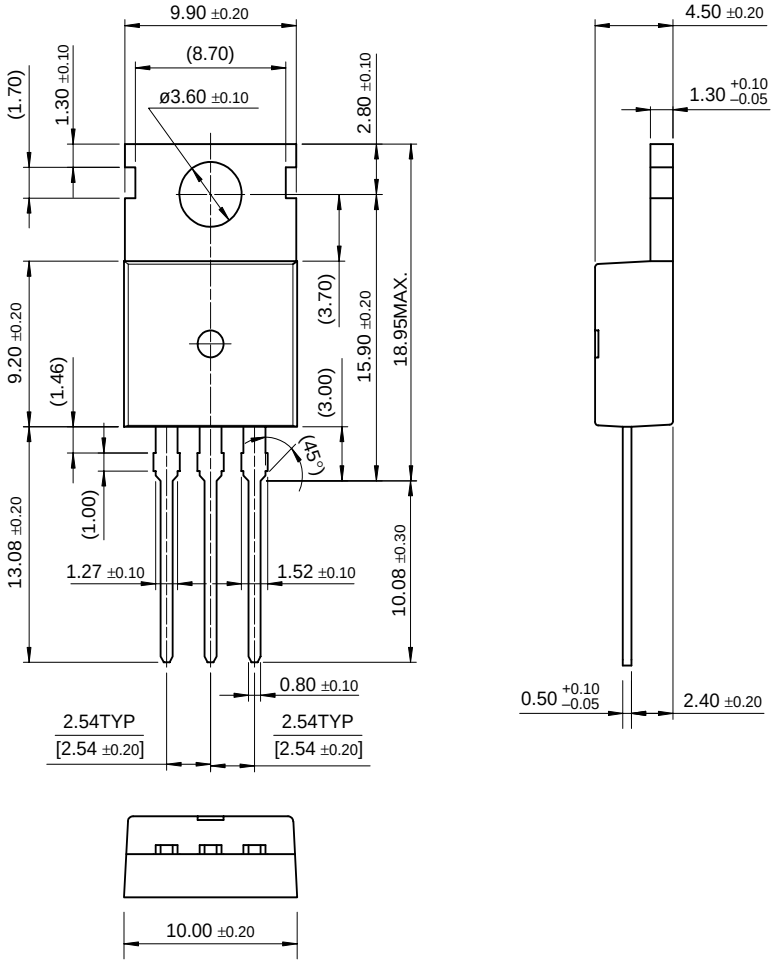


Figure 11. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroFET™	PowerTrench®	SuperSOT™-6
DOME™	GlobalOptoisolator™	MicroPak™	QFET®	SuperSOT™-8
EcoSPARK™	GTO™	MICROWIRE™	QS™	SyncFET™
E^2CMOS™	HiSeC™	MSX™	QT Optoelectronics™	TinyLogic®
EnSigna™	I^2C™	MSXPro™	Quiet Series™	TINYOPTO™
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The Power Franchise®		OPTOLOGIC®	SILENT SWITCHER®	UltraFET®
Programmable Active Droop™		OPTOPLANAR™	SMART START™	VCX™

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