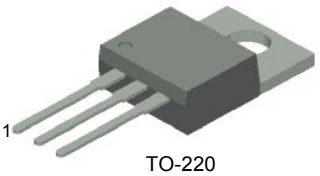
FAIRCHILD SEMICONDUCTOR®

March 2008

FJP5555
NPN Silicon Transistor

High Voltage Switch Mode Application

- Fast Speed Switching
- Wide Safe Operating Area
- Suitable for Electronic Ballast Application



TO-220

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings * T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
BV_{CBO}	Collector-Base Voltage	1050	V
BV_{CEO}	Collector-Emitter Voltage	400	V
BV_{EBO}	Emitter-Base Voltage	14	V
I_C	Collector Current (DC)	5	A
I_{CP}	Collector Current (Pulse)	10	A
P_C	Collector Dissipation.	85	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Junction Temperature Range	- 55 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Ordering Information

Part Number	Marking	Package	Packing Method	Remarks
FJP5555TU	J5555	TO220	TUBE	

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Electrical Characteristics * T_C=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C=500μA, I_E=0	1050			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	14			V
h_{FE}	* DC Current Gain	V_{CE}=5V, I_C=10mA	10			
		V_{CE}=3V, I_C=0.8A	20		40	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C=1A, I_B=0.2A			0.5	V
		I_C=3.5A, I_B=1.0A			1.5	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C=3.5A, I_B=1.0A			1.2	V
C_{ob}	Output Capacitance	V_{CB}=10V, f=1MHz		45		pF
t_{ON}	Turn On Time	V_{CC}=125V, I_C=0.5A I_{B1}=45mA, I_{B2}=0.5A R_L=250Ω			1.0	μs
t_{STG}	Storage Time				1.2	μs
t_F	Fall Time				0.3	μs
t_{ON}	Turn On Time	V_{CC}=250V, I_C=2.5A I_{B1}=0.5A, I_{B2}=1.0A R_L=100Ω			2.0	μs
t_{STG}	Storage Time				2.5	μs
t_F	Fall Time				0.3	μs
EAS	Avalanche Energy	L= 2mH	6			mJ

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

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Typical Characteristics

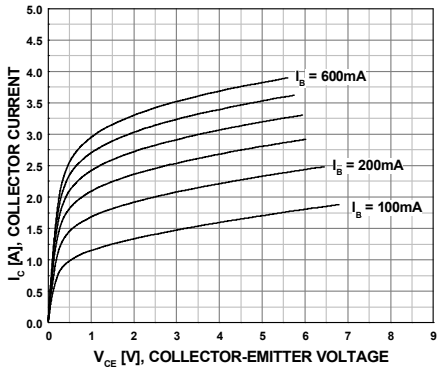

Figure 1. Static Characteristics

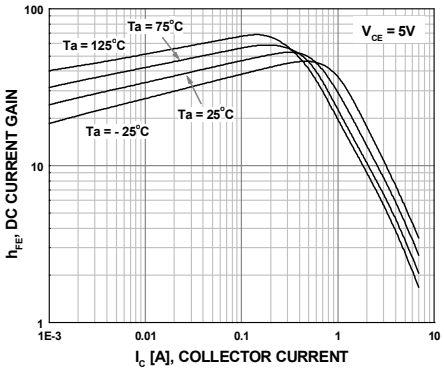

Figure 2. DC Current Gain

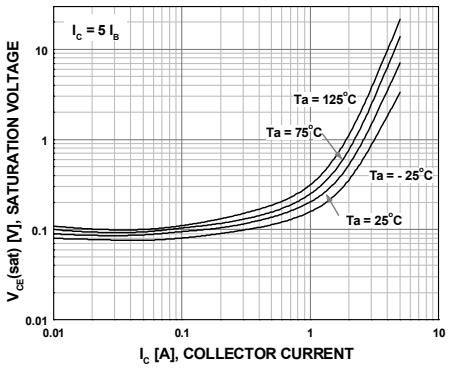

Figure 3. Saturation Voltage

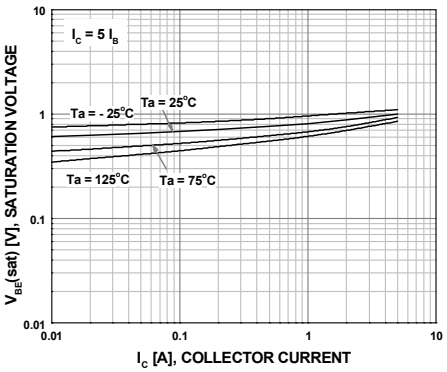

Figure 4. Saturation Voltage

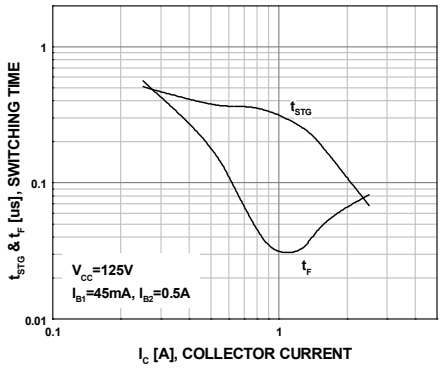

Figure 5. Resistive Load Switching

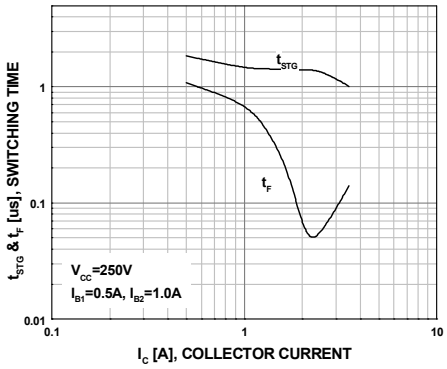

Figure 6. Resistive Load Switching

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Typical Characteristics (Continued)

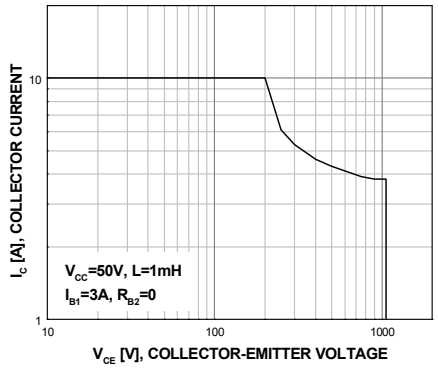

Figure 7. Reverse Biased Safe Operating Area

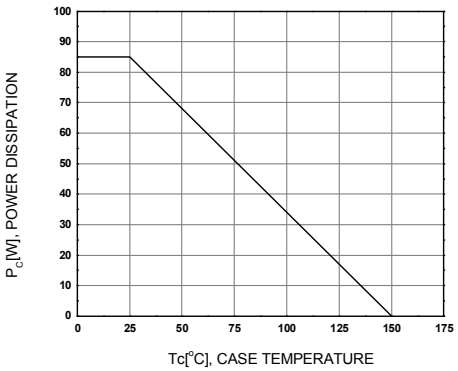

Figure 8. Power Derating

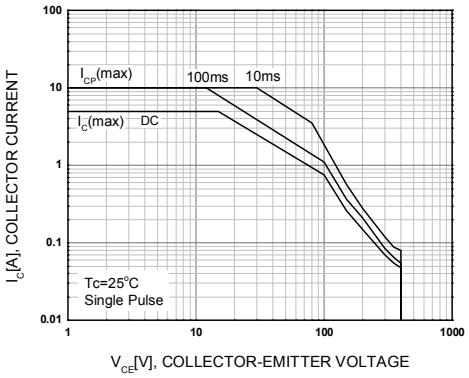

Figure 9. Forward Biased Safe Operating Area

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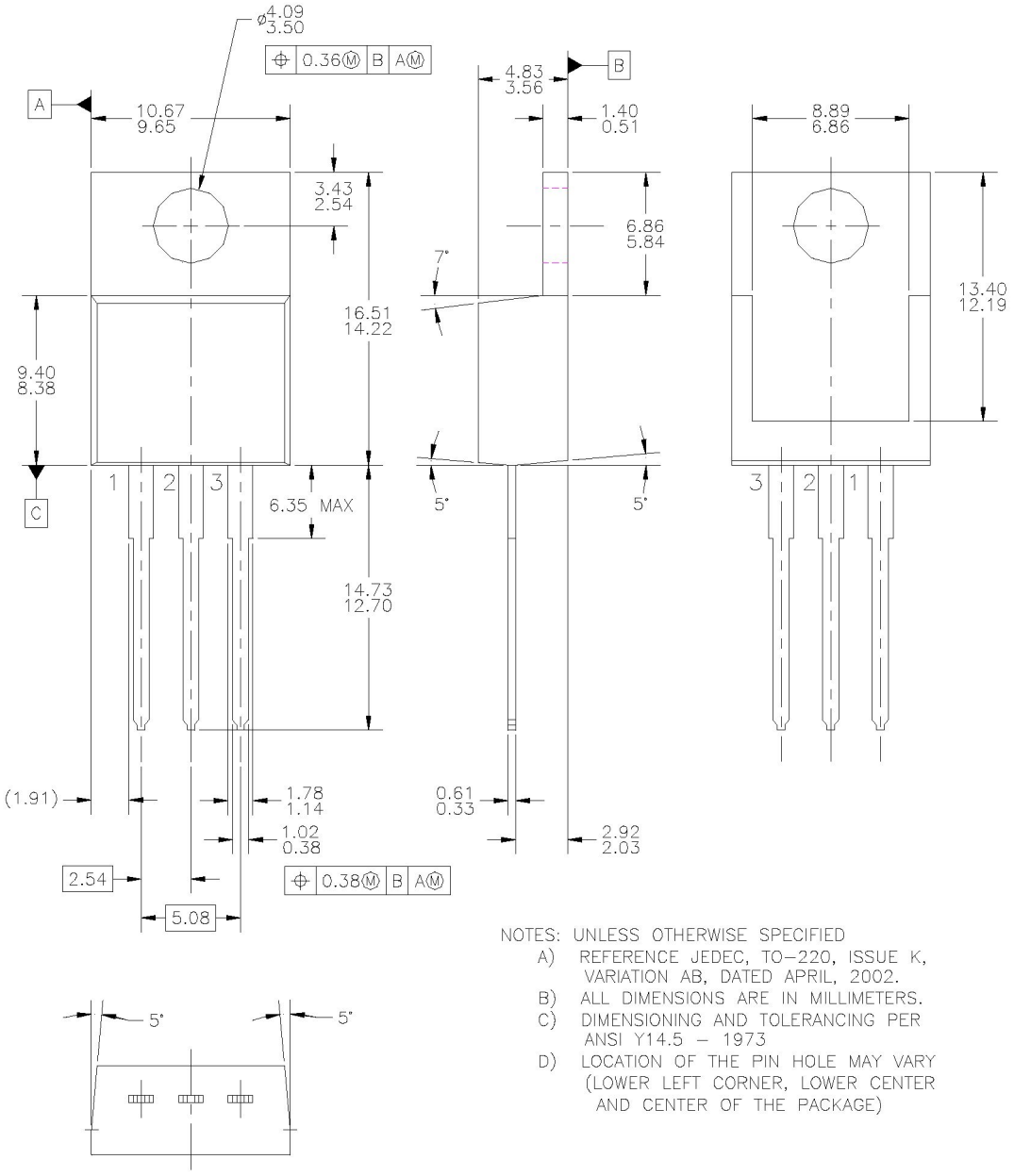
Mechanical Dimensions

TO220



NOTES: UNLESS OTHERWISE SPECIFIED

A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.

B) ALL DIMENSIONS ARE IN MILLIMETERS.

C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 – 1973

D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)

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