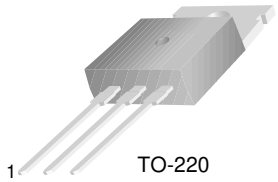
FAIRCHILD
SEMICONDUCTOR®

FJP3305
High Voltage Fast-Switching NPN Power Transistor

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



TO-220

1.Base 2.Collector 3.Emitter

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	Conditions	Min.	Typ.	Max	Units
BV_{CBO}	Collector-Base Breakdwon 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} h_{FE2}	DC Current Gain *	V_{CE} = 5V, I_C = 1A V_{CE} = 5V, I_C = 2A	19 8		35 40	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 1A, I_B = 0.2A I_C = 2A, I_B = 0.5A I_C = 4A, I_B = 1A			0.5 0.6 1.0	V V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 1A, I_B = 0.2A I_C = 2A, I_B = 0.5A			1.2 1.6	V V
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.5A	4			MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 1MHz		65		pF
t_{ON}	Turn On Time	V_{CC} = 125V, I_C = 2A I_{B1} = -I_{B2} = 0.4A R_L = 62.5Ω			0.8	μs
t_{STG}	Storge Time				4.0	μs
t_F	Fall Time				0.9	μs

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

h_{FE} Classification

Classification	H1	H2
h_{FE1}	19 ~ 28	26 ~ 35

Typical Performance Characteristics

Figure 1. Static Characteristic

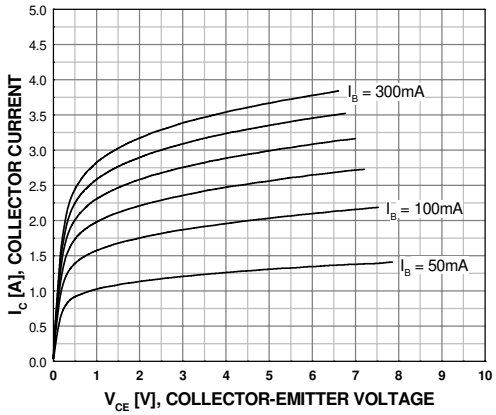


Figure 2. DC Current Gain (R-Grade)

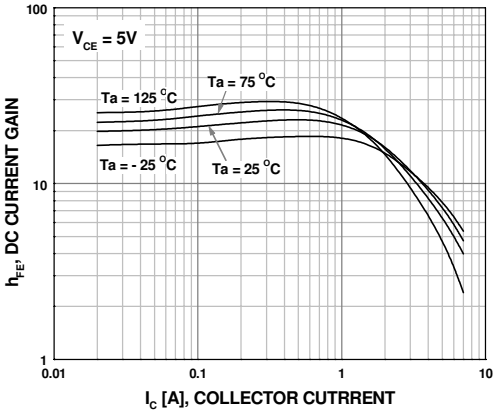


Figure 3. DC Current Gain (O-Grade)

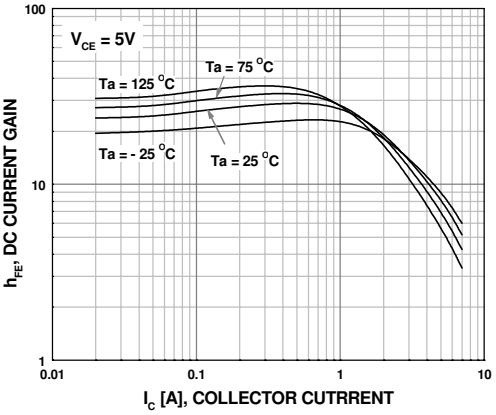


Figure 4. Saturation Voltage (R-Grade)

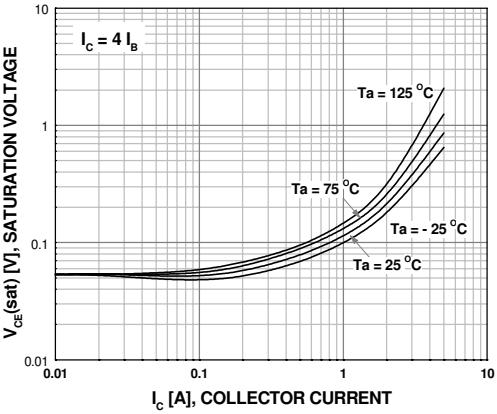


Figure 5. Saturatin Voltage (O-Grade)

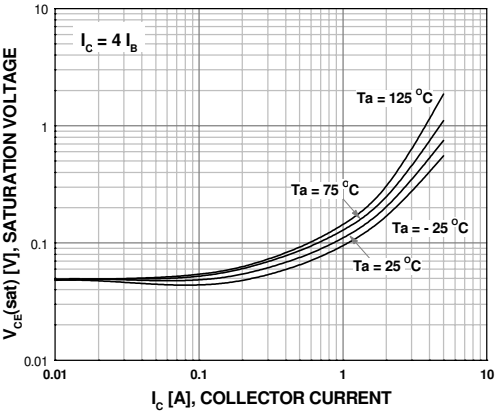
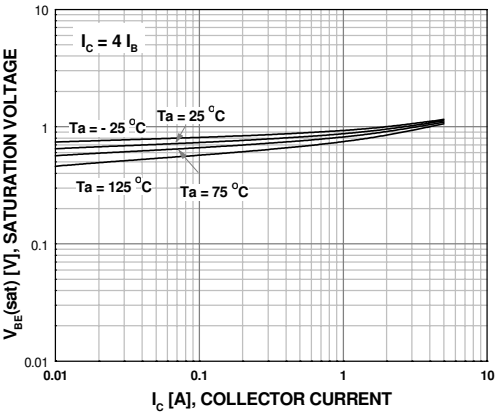


Figure 6. Saturation Voltage (R-Grade)



Typical Performance Characteristics (Continued)

Figure 7. Saturation Voltage (O-Grade)

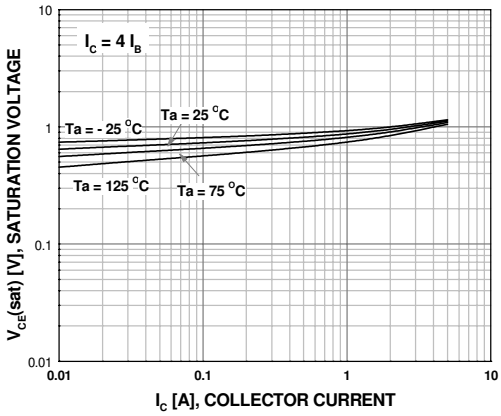


Figure 8. Switching Time

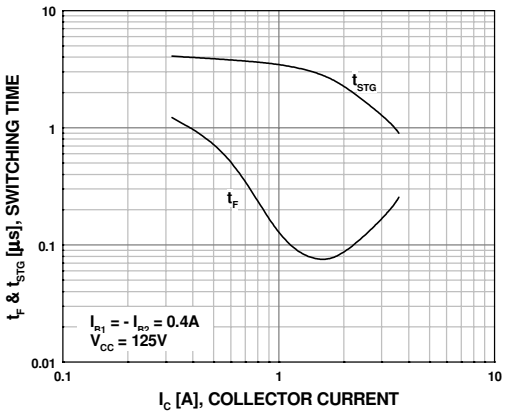


Figure 9. Reverse Biased Safe Operating Area

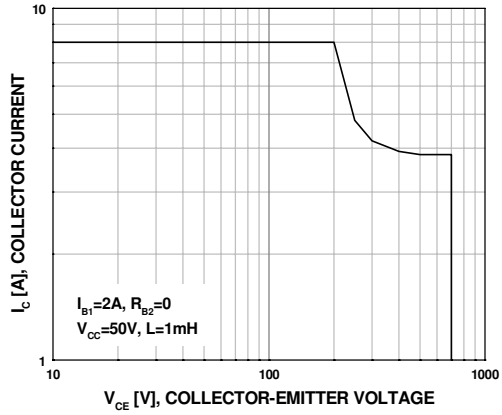


Figure 10. Forward Biased Safe Operating Area

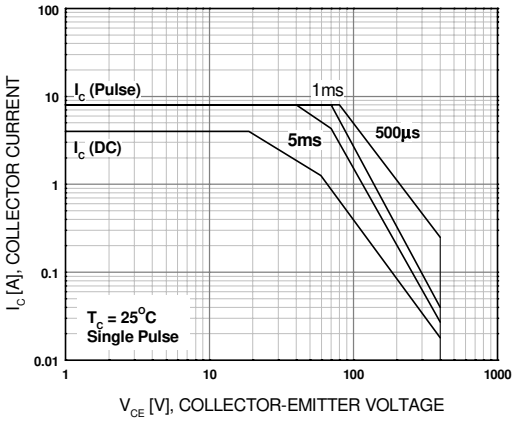
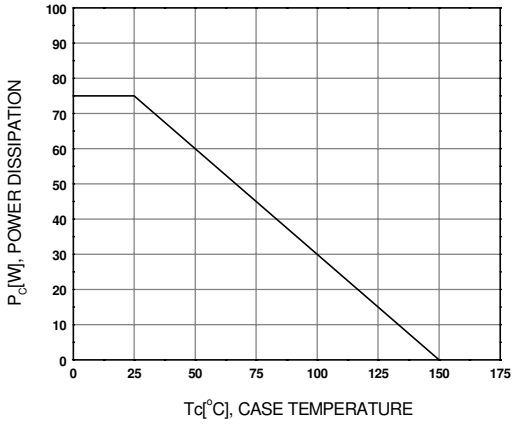
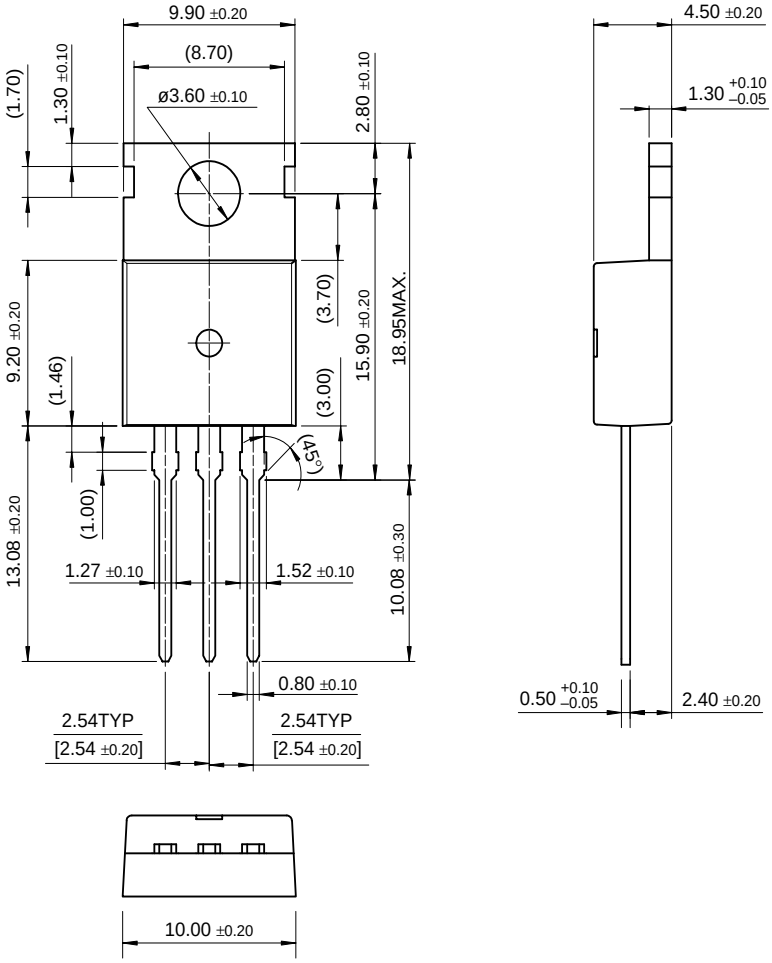


Figure 11. Power Derating



Mechanical Dimensions

TO-220



Dimensions in Millimeters

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I15

FJP3305

NPN Silicon Transistor

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Features

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

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Product status/pricing/packaging

BUY

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
FJP3305	Full Production	Full Production	$0.418	TO-220	3	BULK	Line 1: **$Y** (Fairchild logo) Line 2: &3 Line 3: J3305
FJP3305H1TU	Full Production	Full Production	$0.418	TO-220	3	RAIL	Line 1: **$Y** (Fairchild logo) Line 2: &3 Line 3: J3305-1
FJP3305H2TU	Full Production	Full Production	$0.418	TO-220	3	RAIL	Line 1: **$Y** (Fairchild logo) Line 2: &3 Line 3: J3305-2
FJP3305TU	Full Production		$0.426	TO-220	3	RAIL	Line 1: **$Y** (Fairchild logo)

		Full Production					Line 2: &3 Line 3: J3305

* Fairchild 1,000 piece Budgetary Pricing
** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a Fairchild distributor to obtain samples

Indicates product with Pb-free second-level interconnect. For more information click here.

Package marking information for product FJP3305 is available. Click here for more information .

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Models

Package & leads	Condition	Temperature range	Vcc range	Software version	Revision date
PSPICE					
TO-220-3	Electrical	-65°C to 150°C	0V to 8V	OrCAD 10.3	May 11, 2007

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Qualification Support

Click on a product for detailed qualification data

Product
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FJP3305H1TU
FJP3305H2TU
FJP3305TU

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