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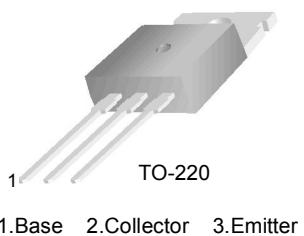
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**FJP3305**

High Voltage Fast-Switching NPN Power Transistor

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



Absolute Maximum Ratings $T_C = 25^\circ\text{C}$ 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 ($T_C = 25^\circ\text{C}$)	75	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	Conditions	Min.	Typ.	Max	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 500\mu\text{A}, I_E = 0$	700			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_B = 0$	400			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 500\mu\text{A}, I_C = 0$	9			V
I_{CBO}	Collector Cut-off Current	$V_{\text{CB}} = 700\text{V}, I_E = 0$			1	μA
I_{EBO}	Emitter Cut-off Current	$V_{\text{EB}} = 9\text{V}, I_C = 0$			1	μA
$h_{\text{FE}1}$ $h_{\text{FE}2}$	DC Current Gain *	$V_{\text{CE}} = 5\text{V}, I_C = 1\text{A}$ $V_{\text{CE}} = 5\text{V}, I_C = 2\text{A}$	19 8		35 40	
$V_{\text{CE}(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 0.2\text{A}$ $I_C = 2\text{A}, I_B = 0.5\text{A}$ $I_C = 4\text{A}, I_B = 1\text{A}$			0.5 0.6 1.0	V
$V_{\text{BE}(\text{sat})}$	Base-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 0.2\text{A}$ $I_C = 2\text{A}, I_B = 0.5\text{A}$			1.2 1.6	V
f_T	Current Gain Bandwidth Product	$V_{\text{CE}} = 10\text{V}, I_C = 0.5\text{A}$	4			MHz
C_{ob}	Output Capacitance	$V_{\text{CB}} = 10\text{V}, f = 1\text{MHz}$		65		pF
t_{ON}	Turn On Time	$V_{\text{CC}} = 125\text{V}, I_C = 2\text{A}$ $I_{B1} = -I_{B2} = 0.4\text{A}$ $R_L = 62.5\Omega$			0.8	μs
t_{STG}	Storage Time				4.0	μs
t_F	Fall Time				0.9	μs

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

h_{FE} Classification

Classification	H1	H2
$h_{\text{FE}1}$	19 ~ 28	26 ~ 35

Typical Performance Characteristics

Figure 1. Static Characteristic

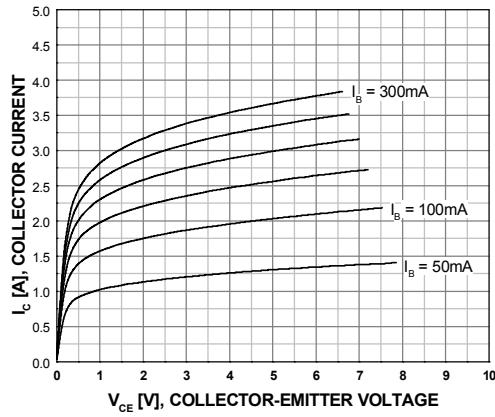


Figure 2. DC Current Gain (R-Grade)

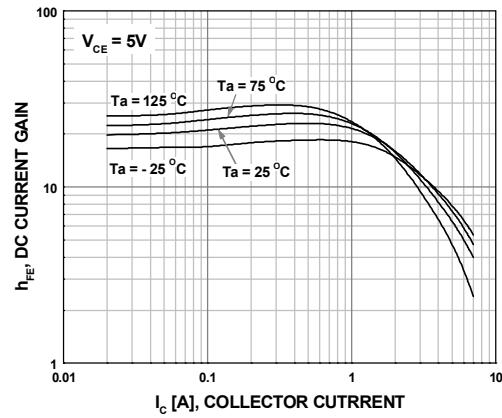


Figure 3. DC Current Gain (O-Grade)

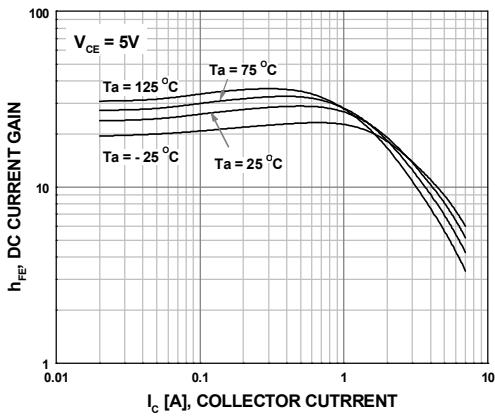


Figure 4. Saturation Voltage (R-Grade)

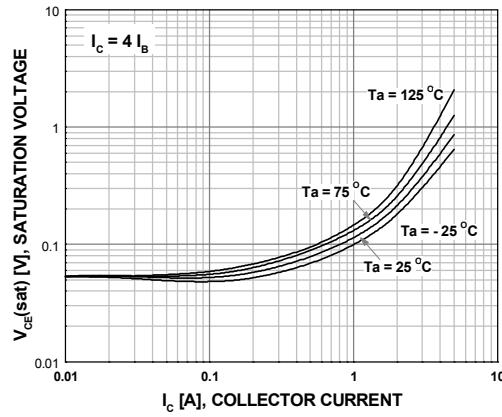


Figure 5. Saturation Voltage (O-Grade)

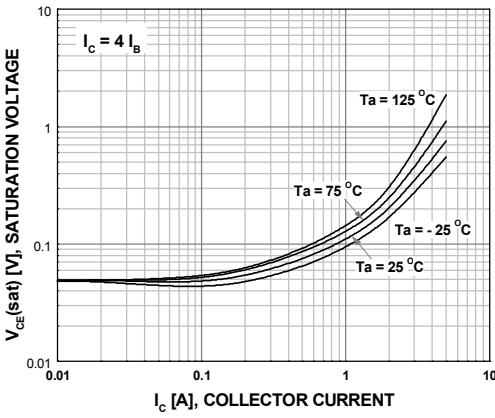
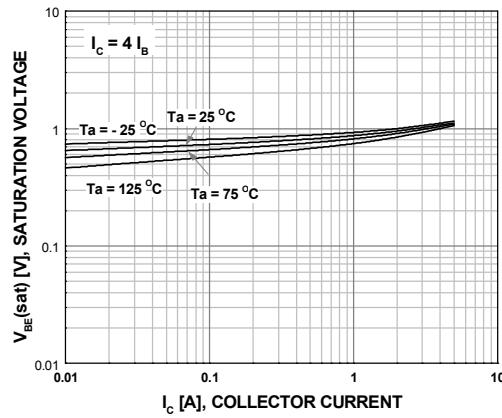


Figure 6. Saturation Voltage (R-Grade)



Typical Performance Characteristics (Continued)

Figure 7. Saturation Voltage (O-Grade)

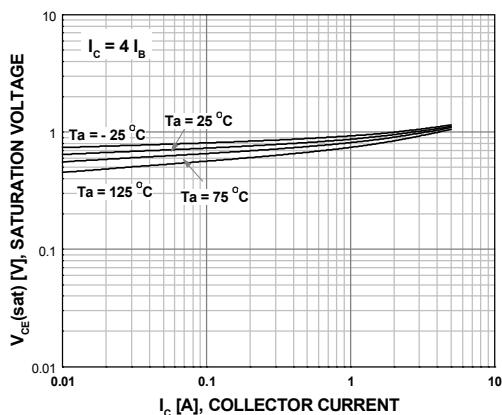


Figure 8. Switching Time

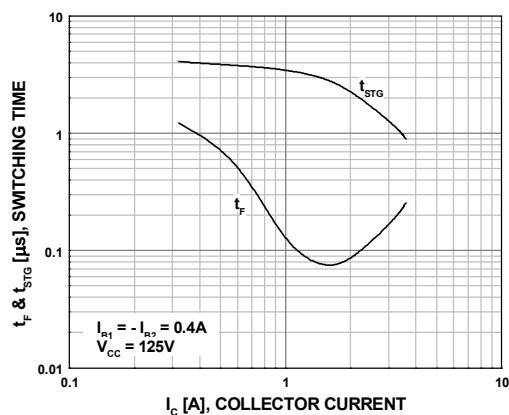


Figure 9. Reverse Biased Safe Operating Area

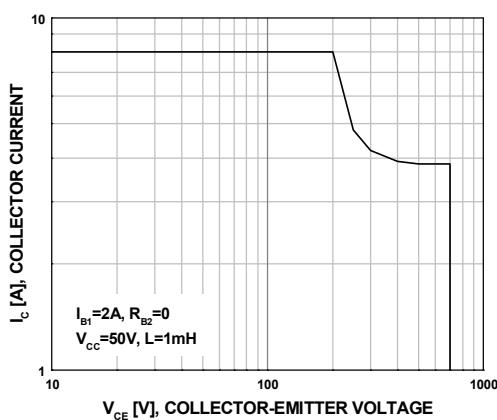


Figure 10. Forward Biased Safe Operating Area

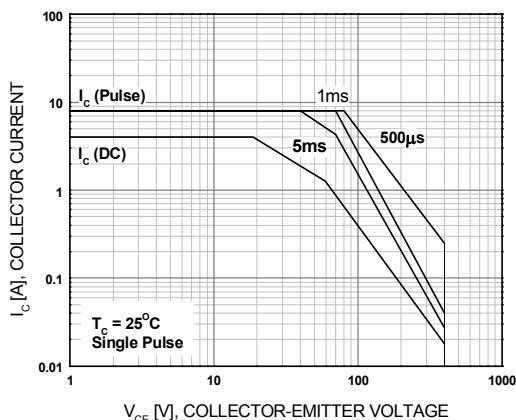
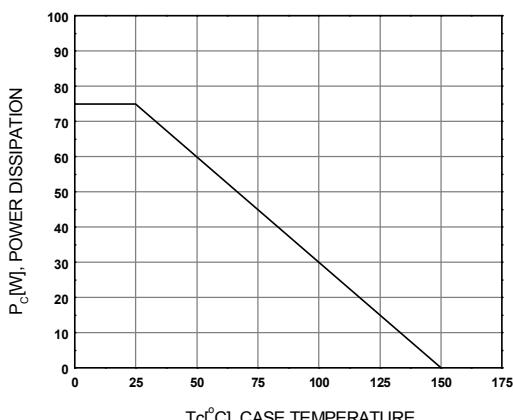
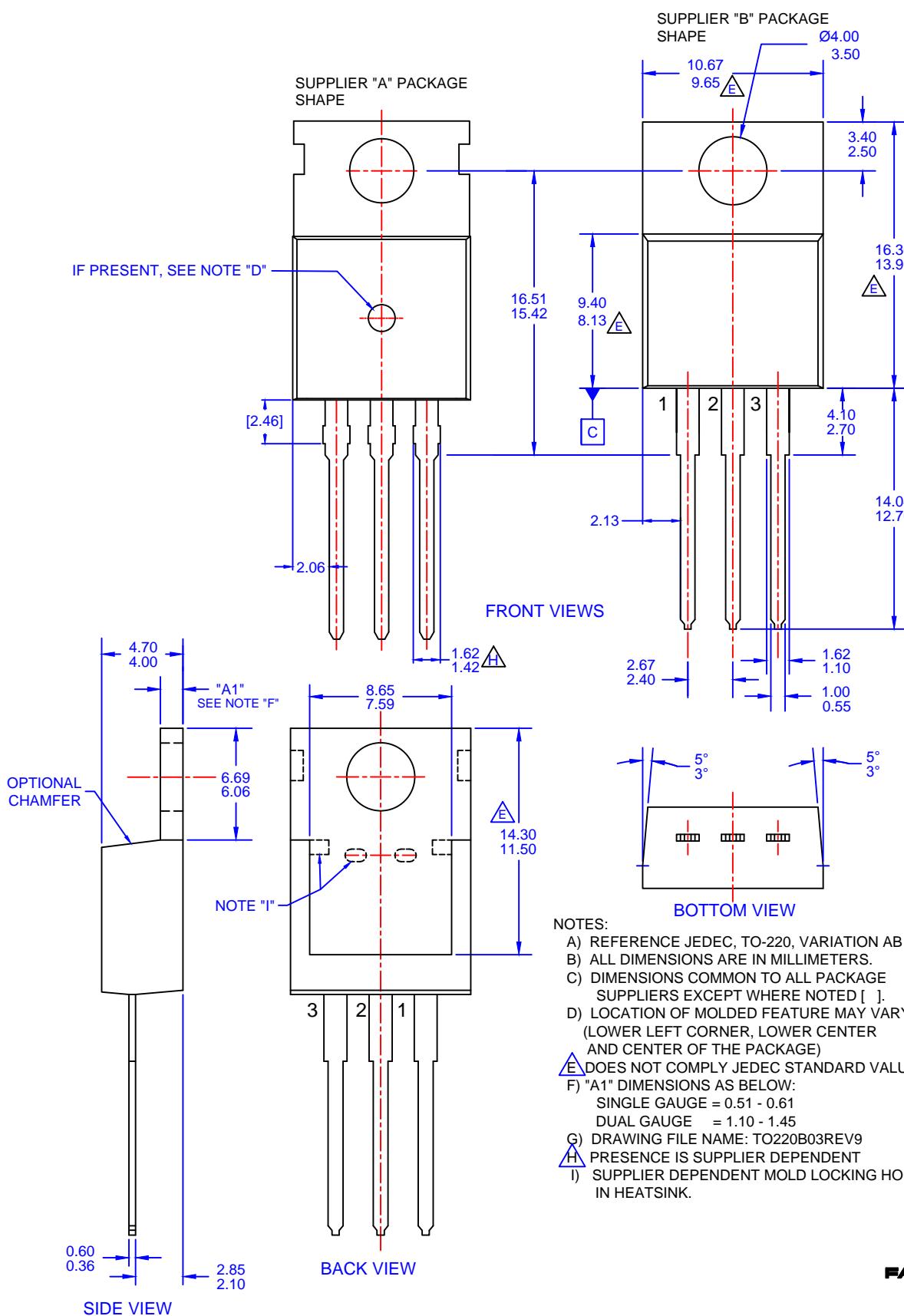


Figure 11. Power Derating





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