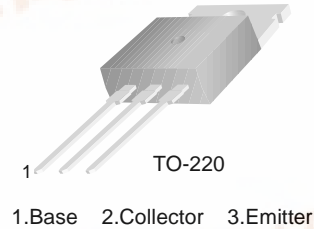




## FJP3305

### High Voltage Switch Mode Application

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



### NPN Silicon Transistor

#### 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	Test Condition	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	$V_{CB}=700\text{V}, I_E=0$			1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=9\text{V}, I_C=0$			1	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$	* DC Current Gain	$V_{CE}=5\text{V}, I_C=1\text{A}$	19		35	
		$V_{CE}=5\text{V}, I_C=2\text{A}$	8		40	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}, I_B=0.2\text{A}$			0.5	V
		$I_C=2\text{A}, I_B=0.5\text{A}$			0.6	V
		$I_C=4\text{A}, I_B=1\text{A}$			1	V
$V_{BE(sat)}$	Base-Emitter On Voltage	$I_C=1\text{A}, I_B=0.2\text{A}$			1.2	V
		$I_C=2\text{A}, I_B=0.5\text{A}$			1.6	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=5\text{V}, I_C=1\text{A}$	4			MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, f=1\text{MHz}$		65		pF
$t_{ON}$	Turn On Time	$V_{CC}=125\text{V}, I_C=2\text{A}=5I_{B1}=-5I_{B2}$			0.8	$\mu\text{s}$
$t_{STG}$	Storage Time	$R_L=62.5\Omega$			4	$\mu\text{s}$
$t_F$	Fall Time				0.9	$\mu\text{s}$

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

### $h_{FE}$ Classification

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

## Typical Characteristics

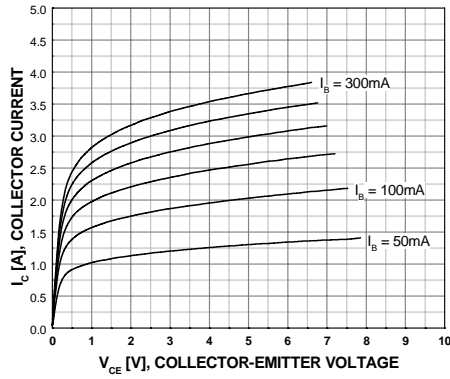


Figure 1. Static Characteristics

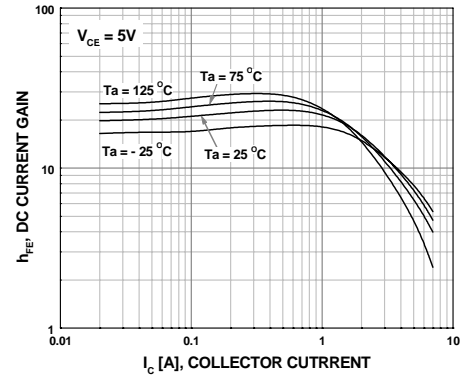


Figure 2. DC Current Gain(R-Grade)

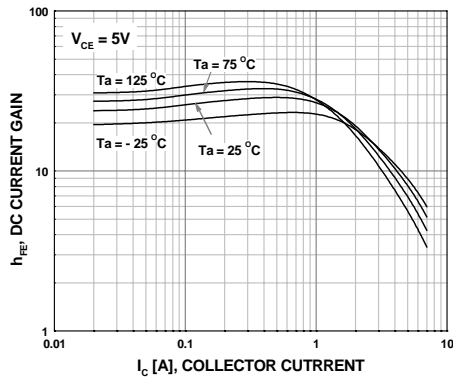


Figure 3. DC Current Gain(O-Grade)

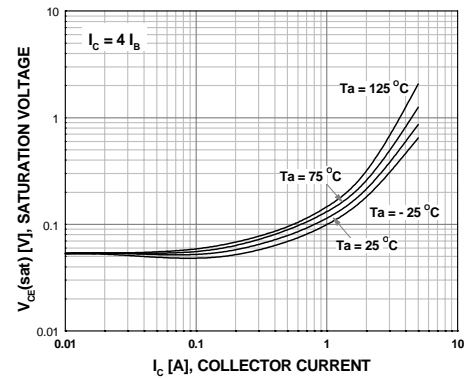


Figure 4. Saturation Voltage(R-Grade)

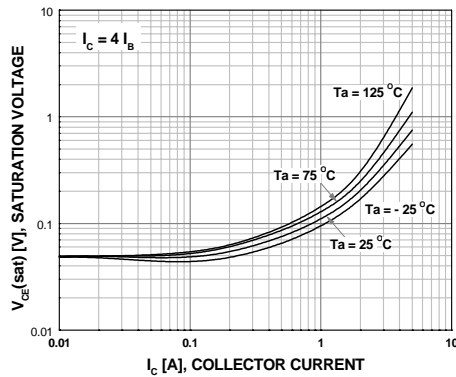


Figure 5. Saturation Voltage(O-Grade)

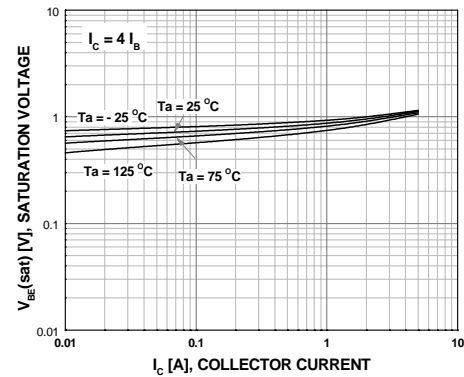


Figure 6. Saturation Voltage(R-Grade)

## Typical Characteristics (Continued)

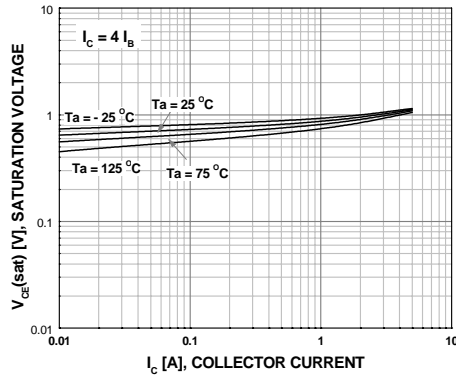


Figure 7. Saturation Voltage(O-Grade)

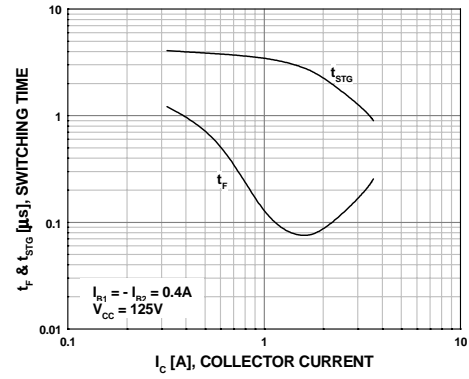


Figure 8. Switching Time

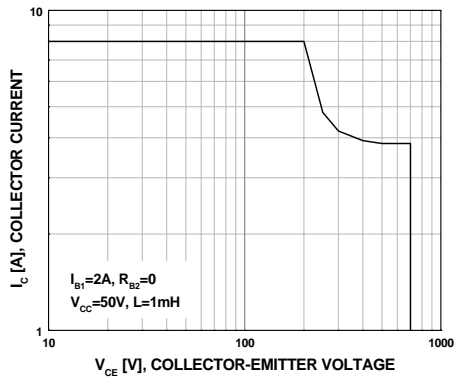


Figure 9. Reverse Biased Safe Operating Area

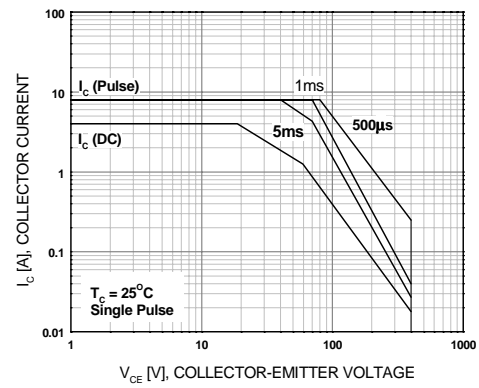


Figure 10. Forward Biased Safe Operating Area

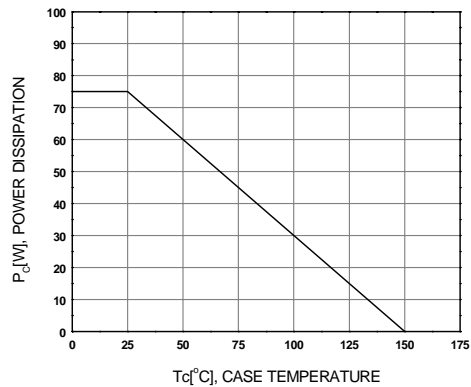
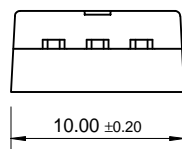
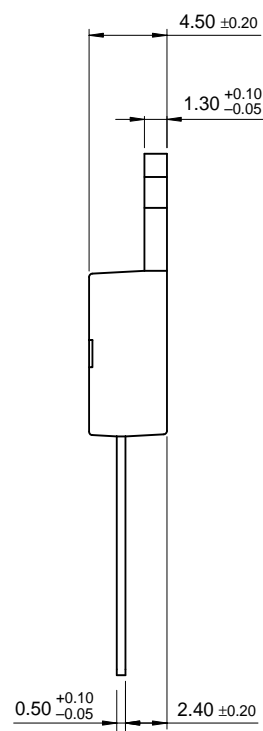


Figure 11. Power Derating

Technical drawing of a 2.54TYP connector. The drawing shows a side view of the component with various dimensions in millimeters. The overall width is 9.90 ± 0.20 mm, with a central hole diameter of Ø3.60 ± 0.10 mm. The height of the main body is 18.95 MAX. mm, with a central section height of 15.90 ± 0.20 mm. The drawing also shows a 45° chamfer on the side of the main body. The bottom section has a width of 10.08 ± 0.30 mm and a height of 13.08 ± 0.20 mm. The dimensions are as follows:

- Overall width: 9.90 ± 0.20 mm
- Central hole diameter: Ø3.60 ± 0.10 mm
- Height of main body: 18.95 MAX. mm
- Height of central section: 15.90 ± 0.20 mm
- Height of bottom section: 13.08 ± 0.20 mm
- Width of bottom section: 10.08 ± 0.30 mm
- Chamfer angle: 45°
- Bottom section width (left): 1.27 ± 0.10 mm
- Bottom section width (right): 1.52 ± 0.10 mm
- Bottom section height (left): 1.00 mm
- Bottom section height (right): 0.80 ± 0.10 mm



Rev. A, March 2004

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