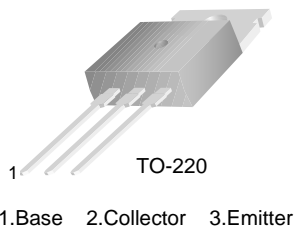


FJP13007

High Voltage Fast-Switching NPN Power Transistor

High Voltage High Speed Power Switch Application

- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Mode Power Supply



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)	8	A
I _{CP}	Collector Current (Pulse)	16	A
I _B	Base Current	4	A
P _C	Collector Dissipation (T _C = 25°C)	80	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 _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA, I _B = 0	400			V
I _{EBO}	Emitter Cut-off Current	V _{EB} = 9V, I _C = 0			1	mA
h _{FE1} h _{FE2}	DC Current Gain *	V _{CE} = 5V, I _C = 2A V _{CE} = 5V, I _C = 5A	8 5		60 30	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A, I _B = 0.4A I _C = 5A, I _B = 1A I _C = 8A, I _B = 2A			1.0 2.0 3.0	V V V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A, I _B = 0.4A I _C = 5A, I _B = 1A			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 = 0.1MHz		110		pF
t _{ON}	Turn On Time	V _{CC} = 125V, I _C = 5A I _{B1} = -I _{B2} = 1A R _L = 25Ω			1.6	μs
t _{STG}	Storage Time				3.0	μs
t _F	Fall Time				0.7	μs

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

h_{FE} Classification

Classification	H1	H2
h _{FE1}	15 ~ 28	26 ~ 39

Typical Characteristics

Figure 1. DC Current Gain

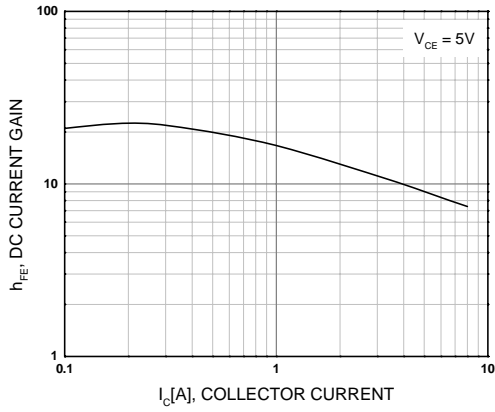


Figure 2. Saturation Voltage

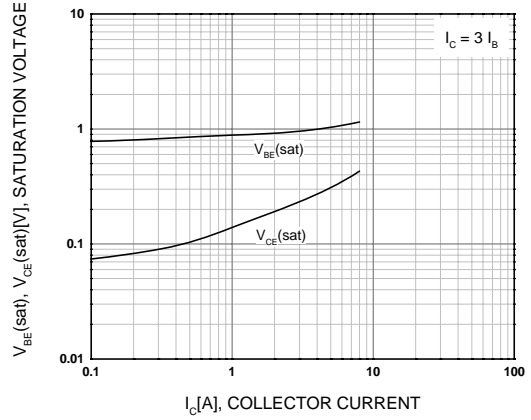


Figure 3. Collector Output Capacitance

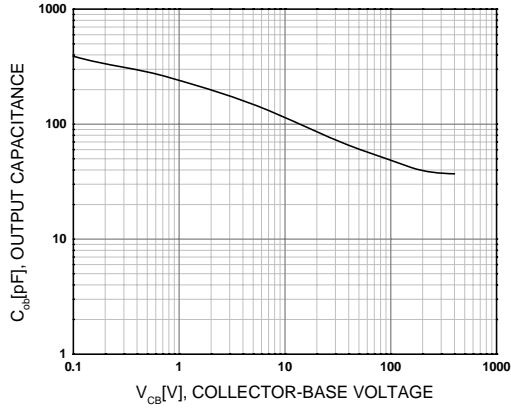


Figure 4. Turn On Time

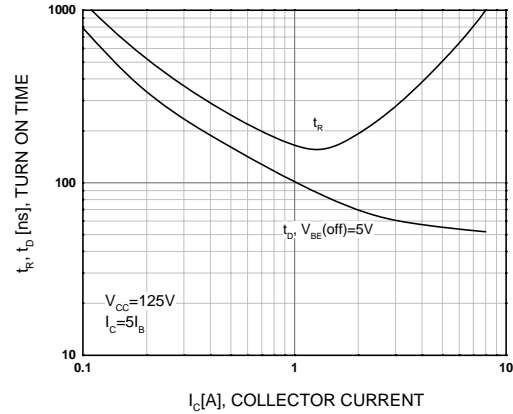


Figure 5. Turn Off Time

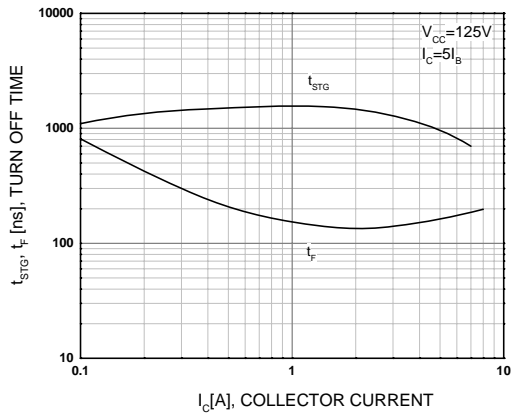
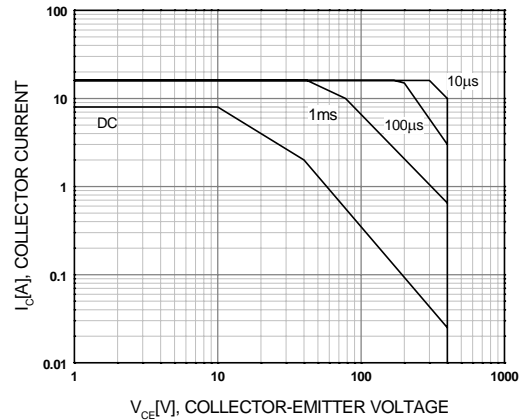


Figure 6. Forward Biased Safe Operating Area



Typical Characteristics (Continued)

Figure 7. Reverse Biased Safe Operating Area

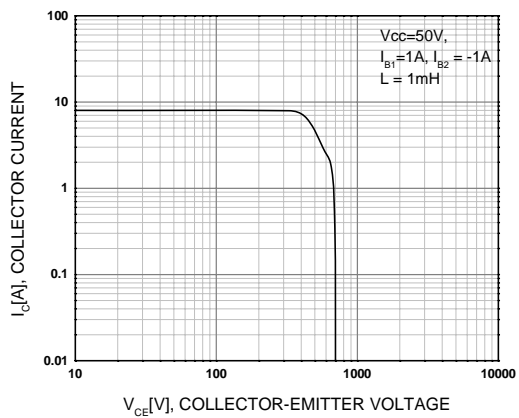
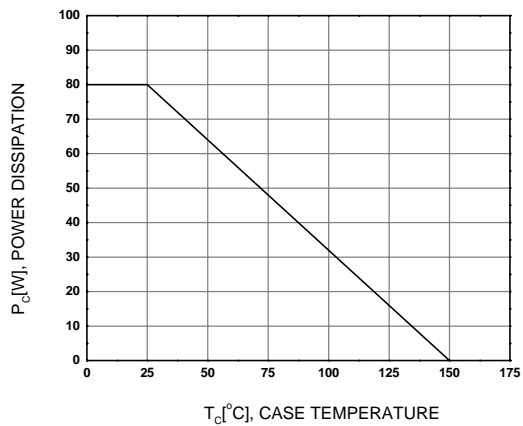
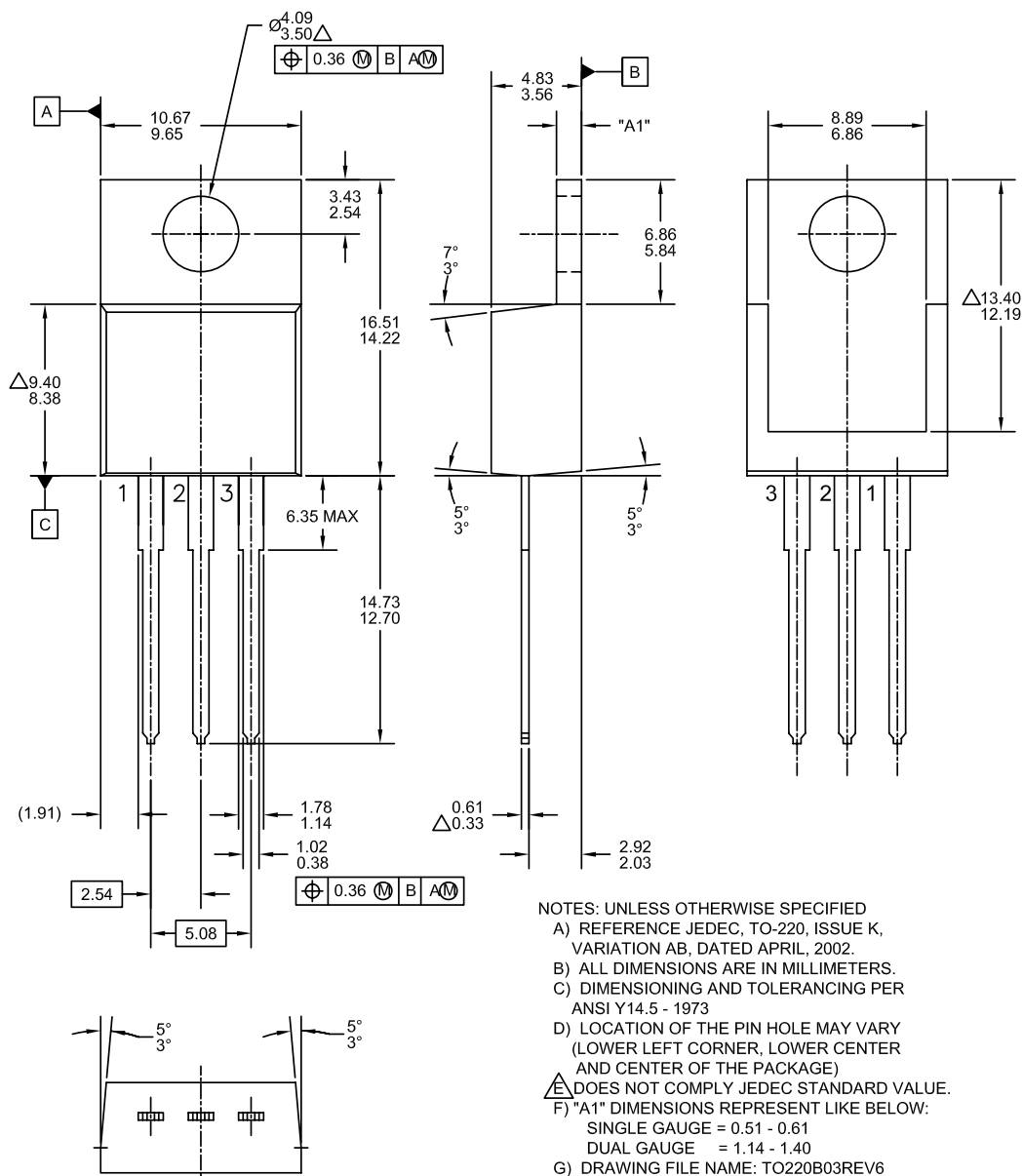


Figure 8. Power Derating



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)
 - Δ DOES NOT COMPLY JEDEC STANDARD VALUE.
 - F) "A1" DIMENSIONS REPRESENT LIKE BELOW:
 SINGLE GAUGE = 0.51 - 0.61
 DUAL GAUGE = 1.14 - 1.40
 - G) DRAWING FILE NAME: TO220B03REV6



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Rev. 135



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