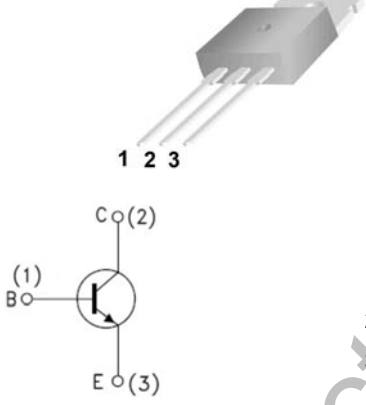


**WGD13007**


Features:

- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Mode Power Supply
- 100% Avalanche Tested

TO-220



1. Base (B)  
2. Collector (C)  
3. Emitter (E)



**Absolute Maximum Ratings\*** T<sub>c</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	700	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	9	V
I <sub>C</sub>	Collector Current (DC)	8	A
I <sub>CP</sub>	Collector Current (Pulse)	16	A
I <sub>B</sub>	Base Current	4	A
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> = 25°C)	80	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-65 ~ 150	°C

**Electrical Characteristics** T<sub>C</sub> = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	400			V
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 9V, I <sub>C</sub> = 0			1	mA
h <sub>FE1</sub> h <sub>FE2</sub>	DC Current Gain *	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2A V <sub>CE</sub> = 5V, I <sub>C</sub> = 5A	8 5		60 30	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.4A I <sub>C</sub> = 5A, I <sub>B</sub> = 1A I <sub>C</sub> = 8A, I <sub>B</sub> = 2A			1.0 2.0 3.0	V V V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.4A I <sub>C</sub> = 5A, I <sub>B</sub> = 1A			1.2 1.6	V V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.5A	4			MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 10V, f = 0.1MHz		110		pF
t <sub>ON</sub>	Turn On Time	V <sub>CC</sub> = 125V, I <sub>C</sub> = 5A I <sub>B1</sub> = -I <sub>B2</sub> = 1A R <sub>L</sub> = 25Ω			1.6	μs
t <sub>STG</sub>	Storage Time				3.0	μs
t <sub>F</sub>	Fall Time				0.7	μs

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

**h<sub>FE</sub> Classification**

Classification	H1	H2
h <sub>FE1</sub>	15 ~ 28	26 ~ 39

Typical Characteristics

Figure 1. DC Current Gain

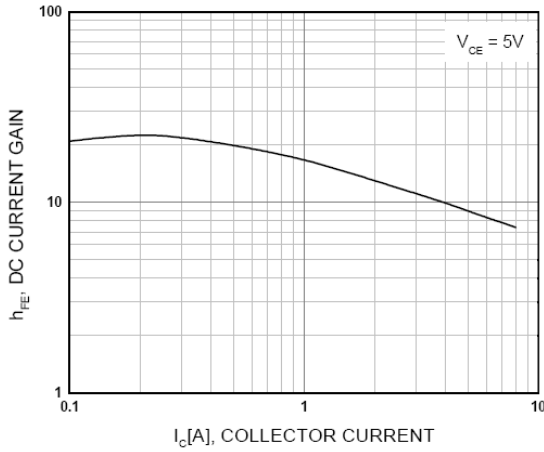


Figure 2. Saturation Voltage

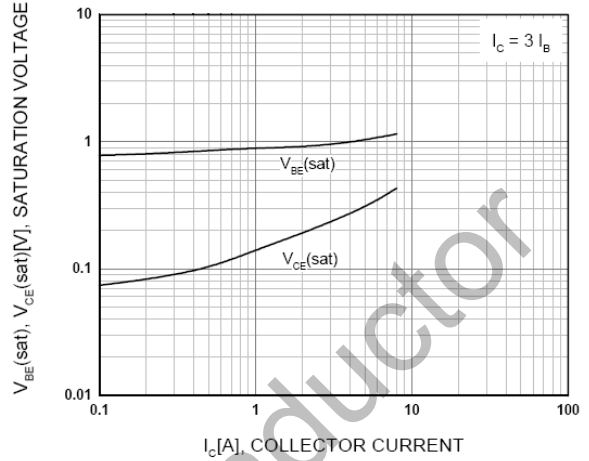


Figure 3. Collector Output Capacitance

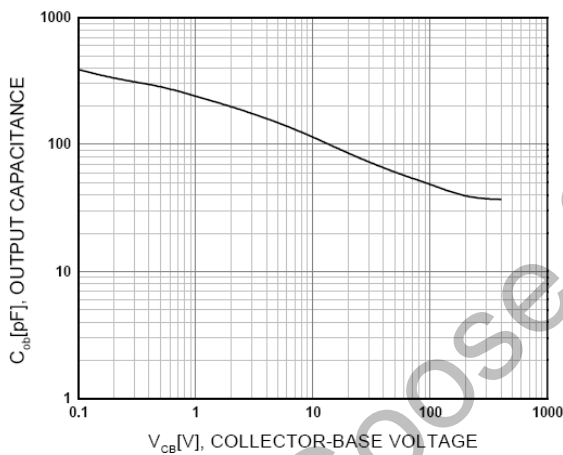


Figure 4. Turn On Time

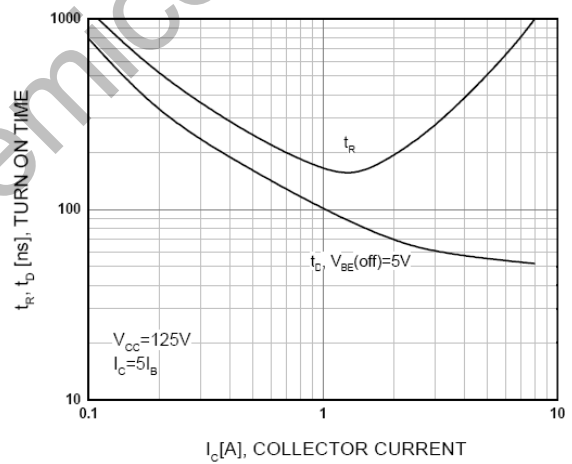


Figure 5. Turn Off Time

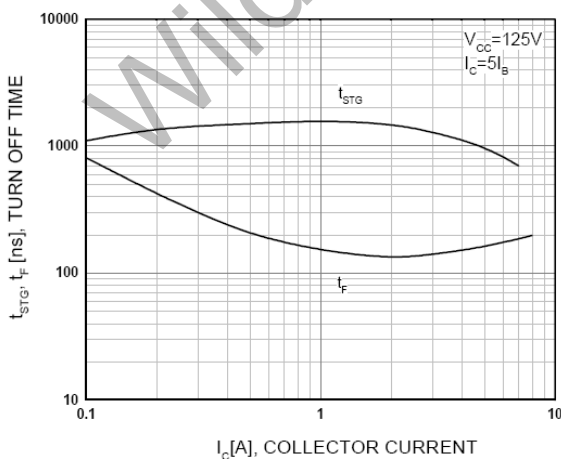
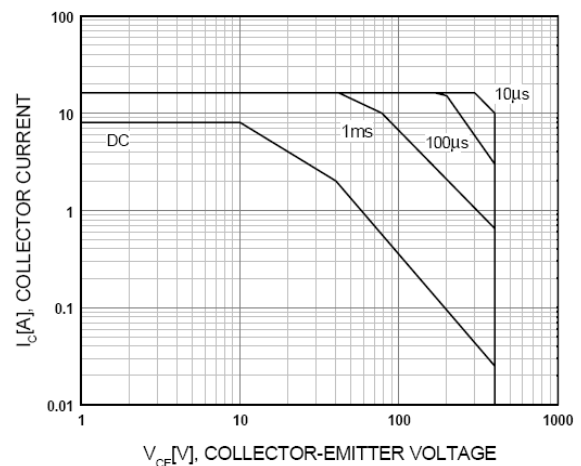


Figure 6. Forward Biased Safe Operating Area



## Typical Characteristics

Figure 7. Reverse Biased Safe Operating Area

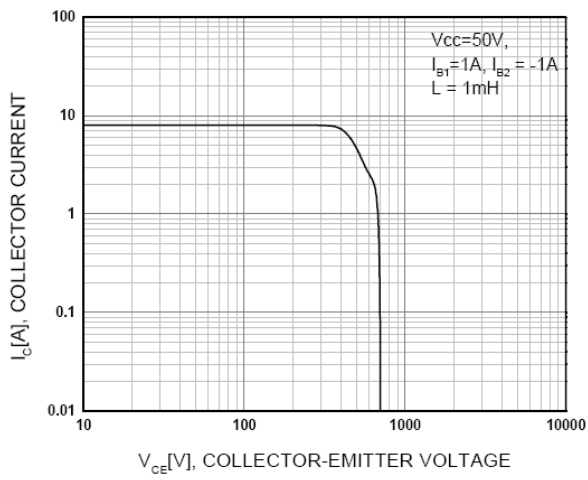
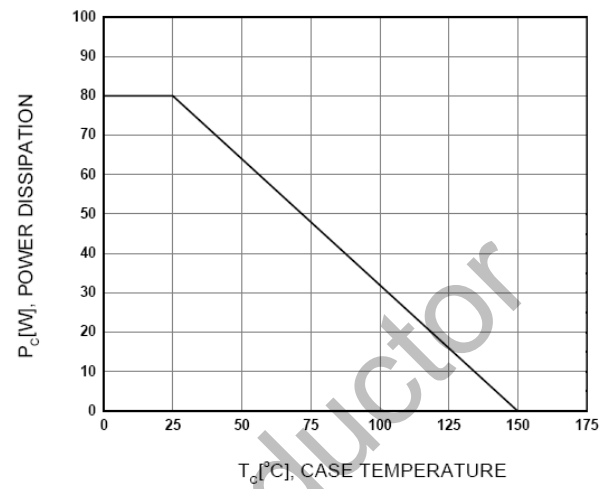
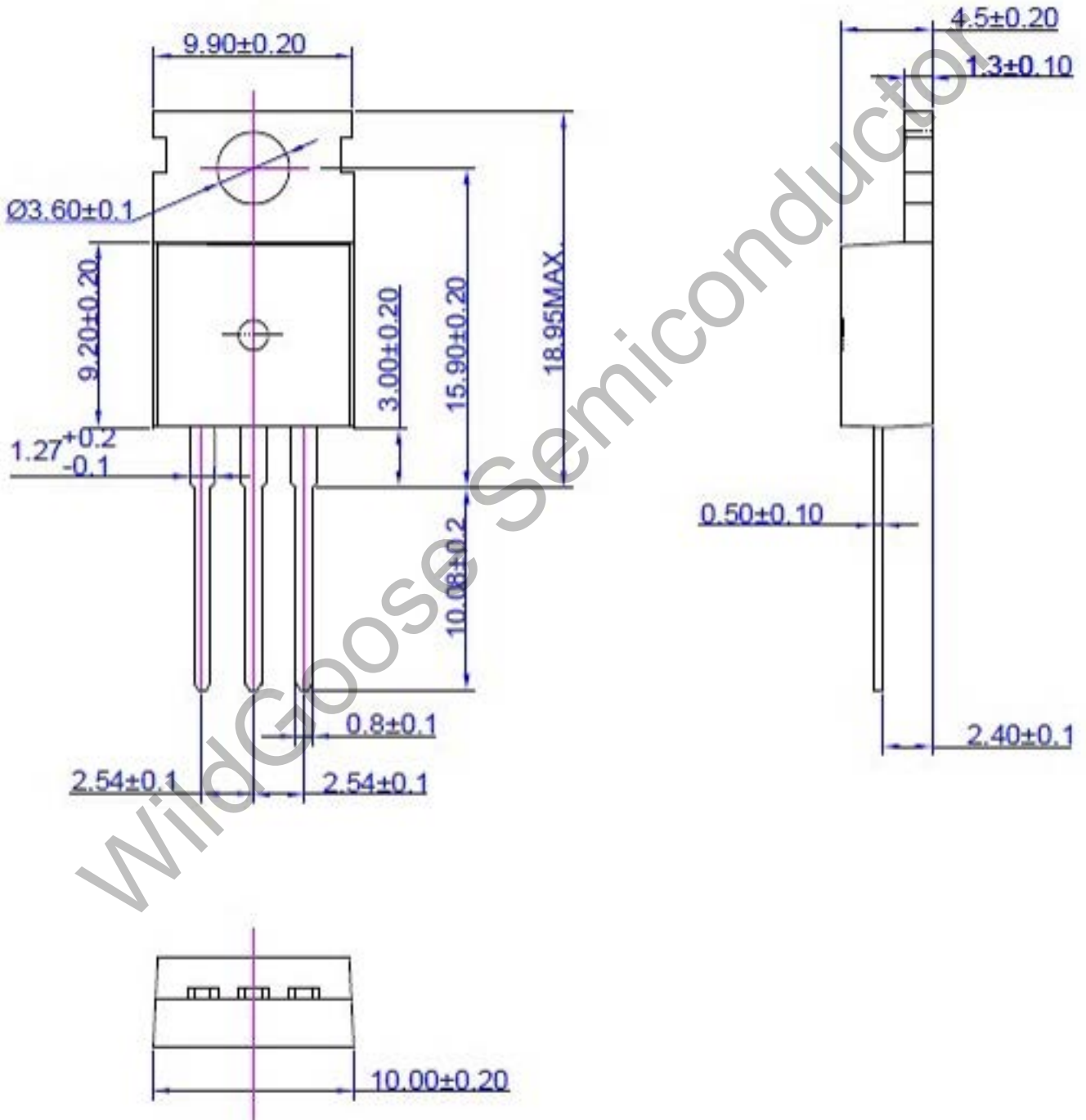


Figure 8. Power Derating



**Package Dimension**

TO-220



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