High Voltage Fast-Switching NPN Power Transistor

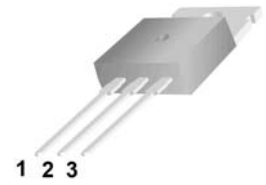
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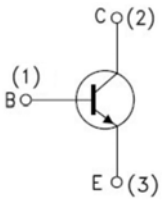
Features:

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

TO-220

RoHS COMPLIANT





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

Absolute Maximum Ratings*

T = 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}	Storge 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

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Typical Characteristics

Figure 1. DC Current Gain

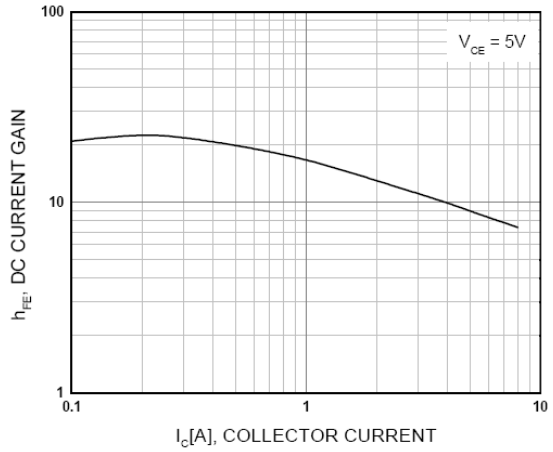


Figure 2. Saturation Voltage

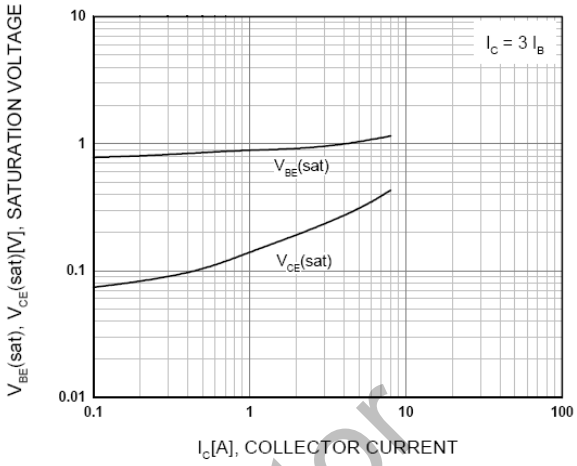


Figure 3. Collector Output Capacitance

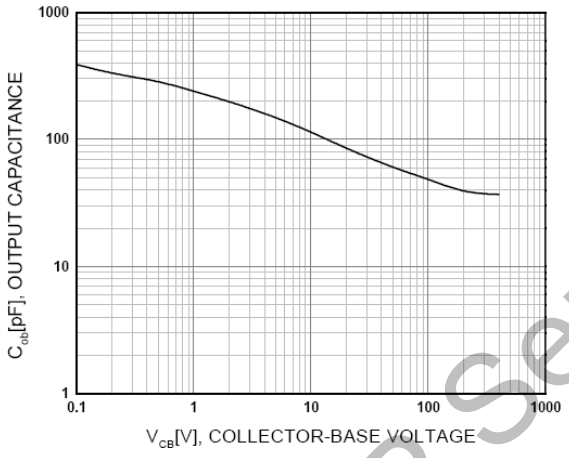


Figure 4. Turn On Time

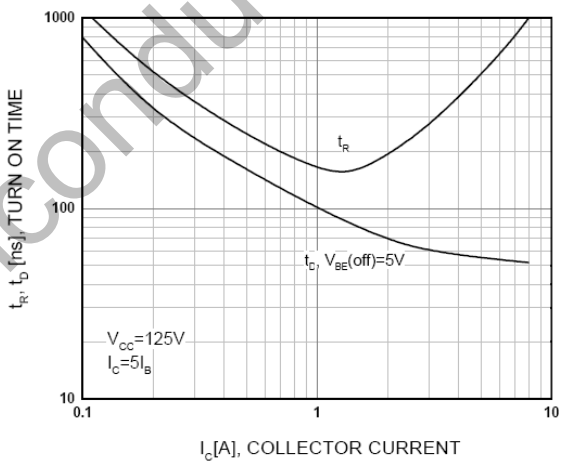


Figure 5. Turn Off Time

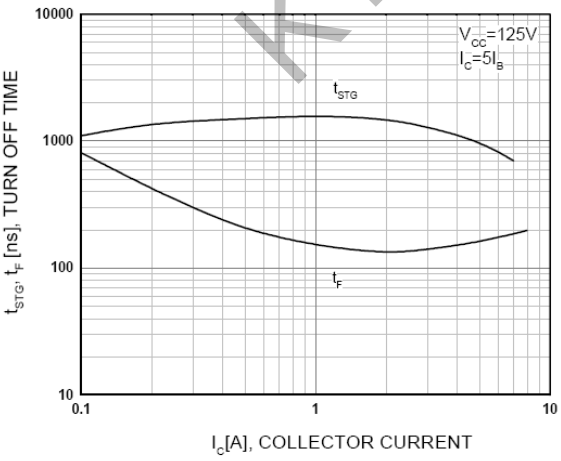
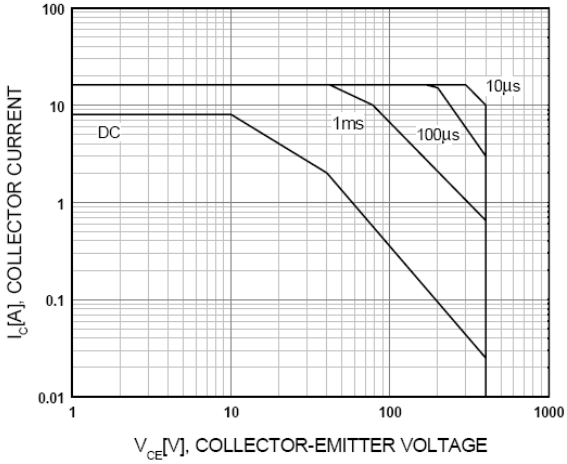


Figure 6. Forward Biased Safe Operating Area



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Typical Characteristics

Figure 7. Reverse Biased Safe Operating Area

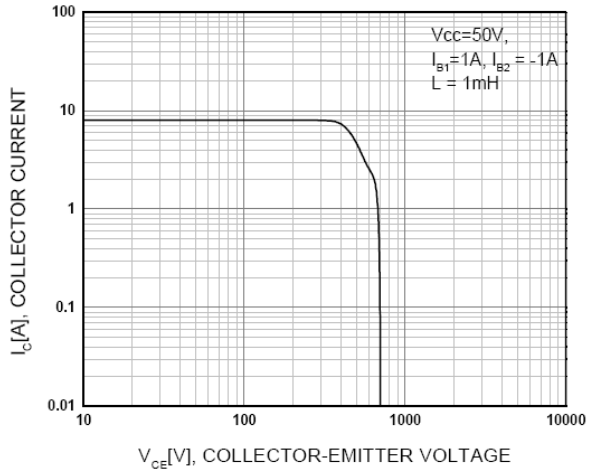
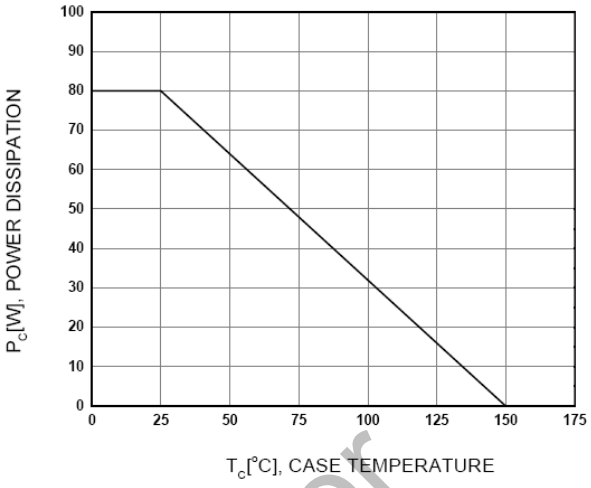


Figure 8. Power Derating

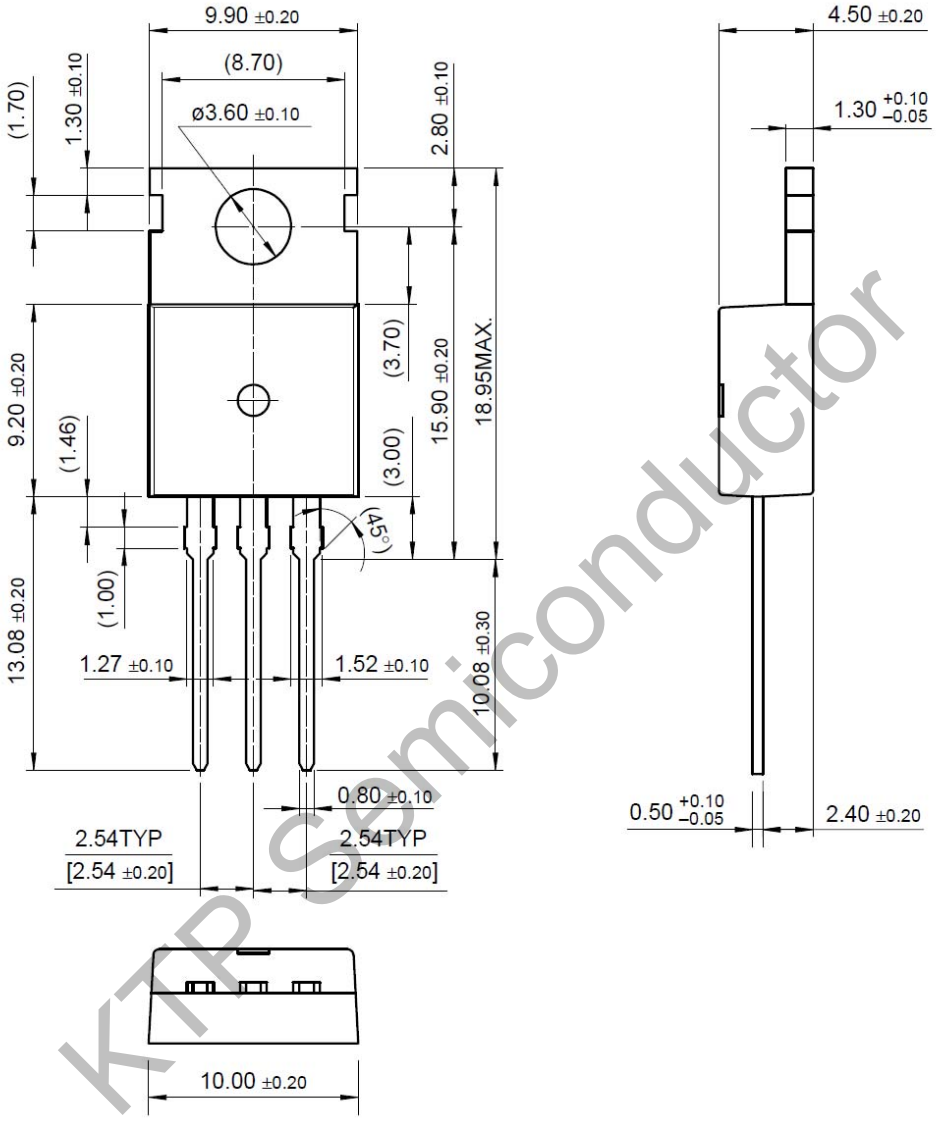


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Package Dimension

TO-220

Unit: mm



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