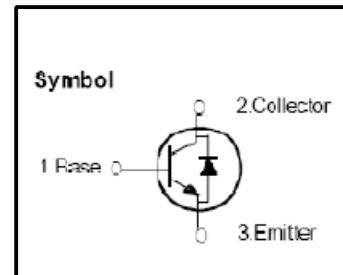


High Voltage Fast -Switching NPN Power Transistor

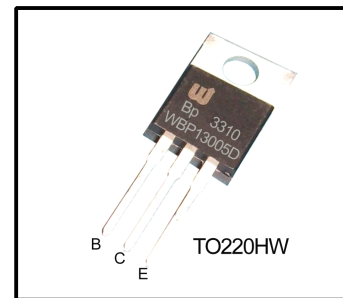
Features

- Very High Switching Speed
- High Voltage Capability
- Wide Reverse Bias SOA
- Built-in free wheeling diode



General Description

This Device is designed for high Voltage, High speed switching Characteristics required such as lighting system ,switching mode power supply.



Absolute Maximum Ratings

Symbol	Parameter	Test conditions	Value	Units
V _{CES}	Collector-Emitter Voltage	V _{BE} =0	700	V
V _{CEO}	Collector-Emitter Voltage	I _B =0	400	V
V _{EBO}	Emitter-Base Voltage	I _C =0	9.0	V
I _C	Collector Current		4	A
I _{CP}	Collector pulse Current		8	A
I _B	Base Current		2	A
I _{BM}	Base peak Current	t _p =5ms	4	A
P _C	Total Dissipation		75	W
T _J	Operation Junction Temperature		150	°C
T _{STG}	Storage Temperature		-55~150	°C

Thermal characteristics

Symbol	Parameter	Value	Units
R _{θJC}	Thermal Resistance Junction to Case	3.12	°C/W
R _{θJA}	Thermal Resistance Junction to Ambient	8.9	°C/W

Electrical Characteristics(T_c=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _B =0, I _C =10mA	400	-	-	V
I _{CBO}	Collector -Base Cutoff current	V _{CE} =700V, I _E =0	-	-	100	μA
I _{CEO}	Collector -Emitter Cutoff Current	V _{CE} =400V, I _B =0	-	-	50	μA
I _{EBO}	Emitter -Base Cutoff Current	V _{BE} =9V, I _C =0	-	-	10	μA
V _{CE(sat)}	Collector -Emitter Saturation Voltage	I _C =1.0A, I _B =0.2A I _C =4.0A, I _B =1.0A	-	-	1.5 2.0	V
V _{BE(sat)}	Base -Emitter Saturation Voltage	I _C =2.0A, I _B =0.5A	-	-	1.8	V
h _{FE}	DC Current Gain	I _C =500mA, V _{CE} =10V I _C =2A, V _{CE} =5V	8 5	-	50 -	
t _s	Storage Time	I _C =2A, V _{CC} =24V	-	-	4	μs
t _f	Fall Time	I _{B1} =-I _{B2} =0.4A	-	-	0.7	
f _T	Current Gain Bandwidth Product	I _C =0.5A, V _{CE} =10V	4	-	-	MHz
V _F	Diode Forward Voltage	I _F =4A	-	-	2	V

Note:

Pulse Test :Pulse width 300, Duty cycle 2%

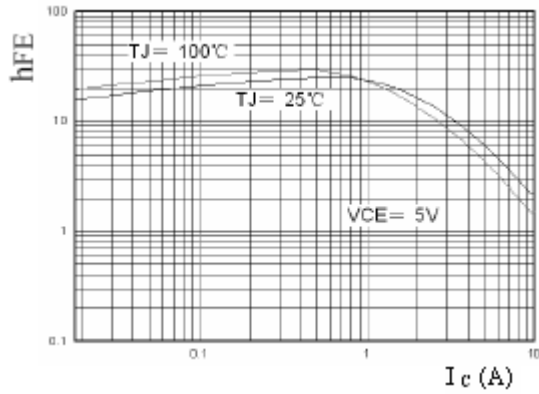


Fig.1 DC Current Gain

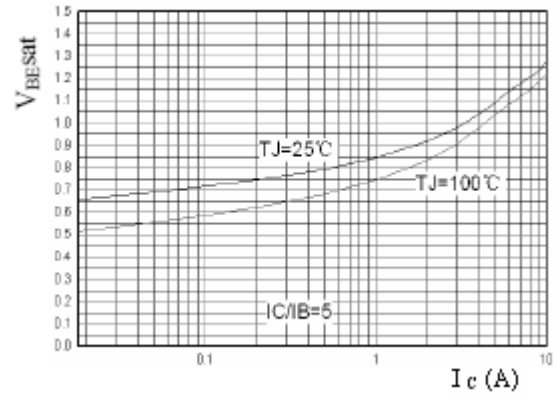


Fig.2 Saturation Voltage

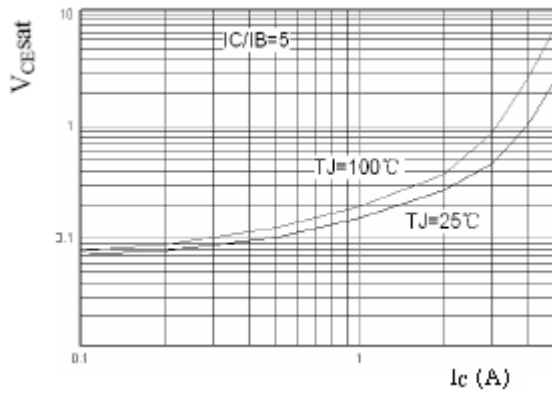


Fig.3 Safe Operation

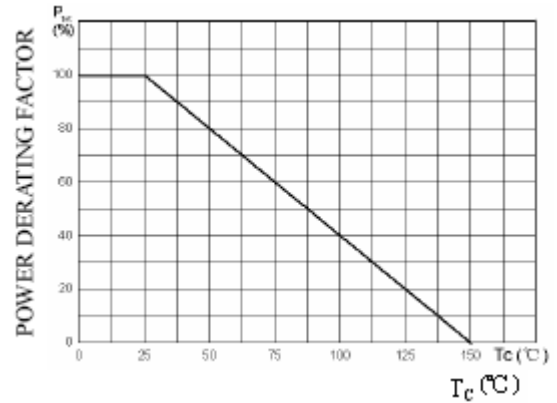


Fig.4 Power Derating

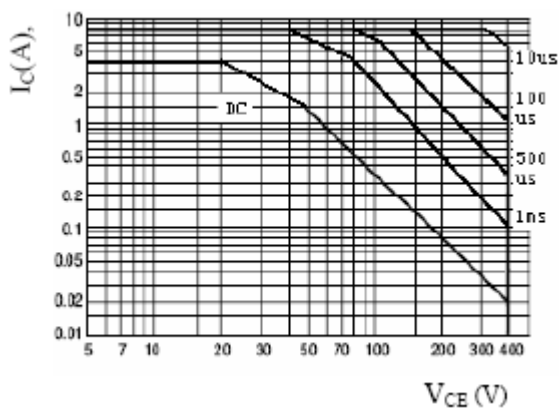
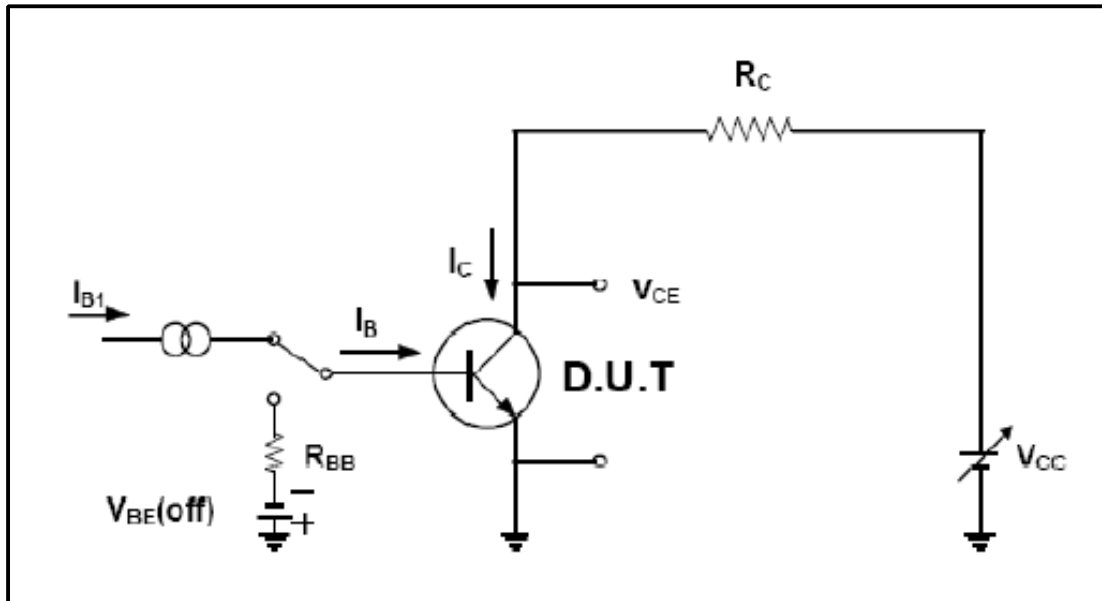
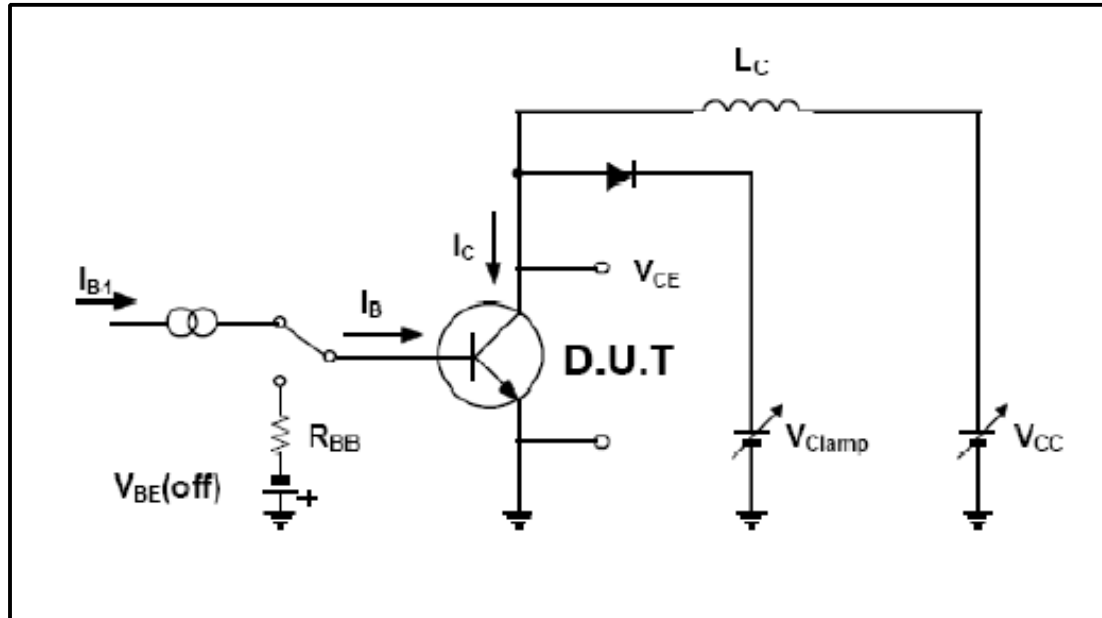


Fig.5 Static Characteristics



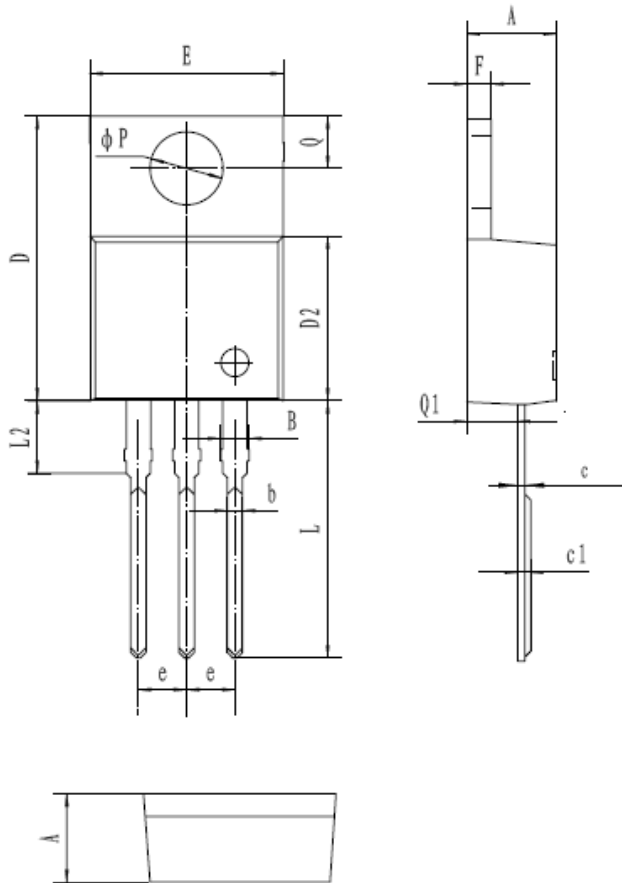
Resistive Load Switching Test Circuit



Inductive Load Switching & RBSOA Test Circuit

TO-220HW Package Dimension

Unit:mm



符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00