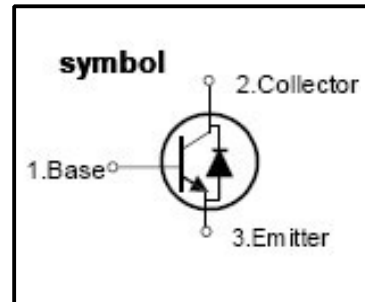


High Voltage Fast -Switching NPN Power Transistor

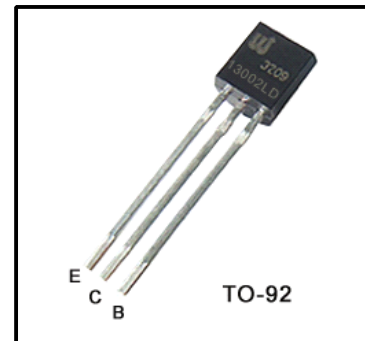
Features

- Very High Switching Speed
- High Voltage Capability
- Wide Reverse Bias SOA



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	350	V
V _{CEO}	Collector-Emitter Voltage	I _B =0	200	V
V _{EBO}	Emitter-Base Voltage	I _C =0	7	V
I _C	Collector Current		1.5	A
I _{CP}	Collector pulse Current		3.0	A
I _B	Base Current		1	A
I _{BM}	Base Peak Current	t _p =5ms	2	A
P _C	Total Dissipation at T _c =25 °C		1	W
T _J	Operation Junction temperature		-40~150	°C
T _{STG}	Storage Temperature		-40~150	°C

T_c:Case temperature(good cooling)

Thermal Characteristics

Symbol	Parameter	value	Units
R _{QJA}	Thermal Resistance Junction to Ambient (Max)	125	°C/W

Electrical Characteristics($T_c=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage	$I_c=10\text{mA}, I_b=0$	200	-	-	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_c=0.5\text{A}, I_b=0.1\text{A}$ $I_c=1.0\text{A}, I_b=0.25\text{A}$	-	-	1.0 1.5	V
$V_{BE(sat)}$	Base -Emitter Saturation voltage	$I_c=0.5\text{A}, I_b=0.1\text{A}$ $I_c=1.0\text{A}, I_b=0.25\text{A}$	-	-	1.0 1.5	V
I_{CBO}	Collector- Base Cutoff Current	$V_{cb}=350\text{V}, I_e=0$	-	-	100	μA
I_{CEO}	Collector- Emitter Cutoff Current	$V_{ce}=200\text{V}, I_b=0$	-	-	50	μA
I_{EBO}	Emitter- Base Cutoff Current	$V_{eb}=7\text{V}, I_c=0$	-	-	10	μA
h_{FE}	DC Current Gain	$V_{ce}=5\text{V}, I_c=0.2\text{A}$ $V_{ce}=5\text{V}, I_c=1.0\text{A}$	8 5	- -	50 -	
t_s	Storage Time	$V_{CC}=24\text{V}, I_c=0.5\text{A}$	-	1.8	4.0	μs
t_f	Fall Time	$I_{B1}=-I_{B2}=0.1\text{A}$	-	0.21	0.5	μs
f_r	Current Gain Bandwidth Product	$V_{ce}=10\text{V}, I_c=0.5\text{A}$	4	-	-	MHz

Note:

Pulse Test : Pulse width 300,Duty cycle 2%

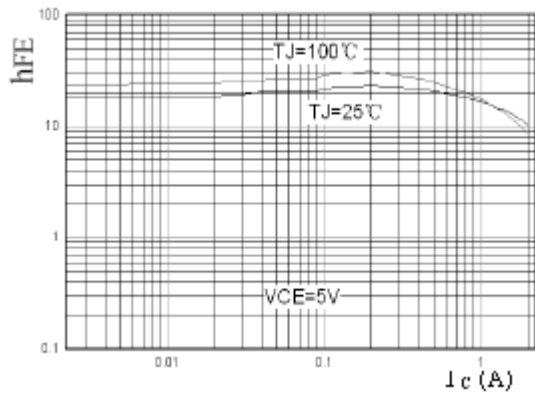


Fig.1 DC Current Gain

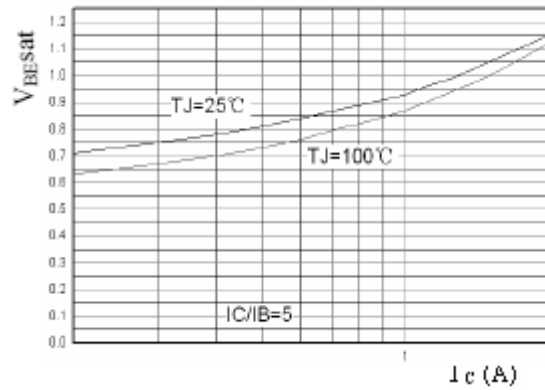


Fig.2 Base -Emitter Saturation Voltage

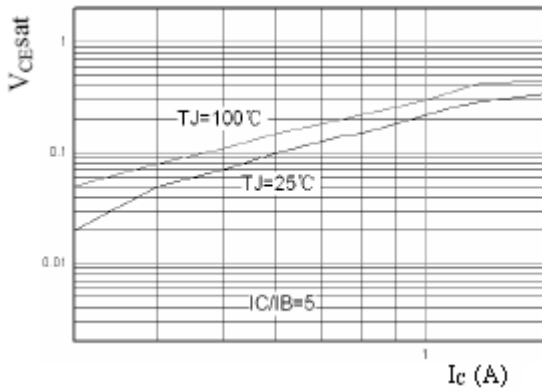


Fig.3 Collector-Emitter Saturation Voltage

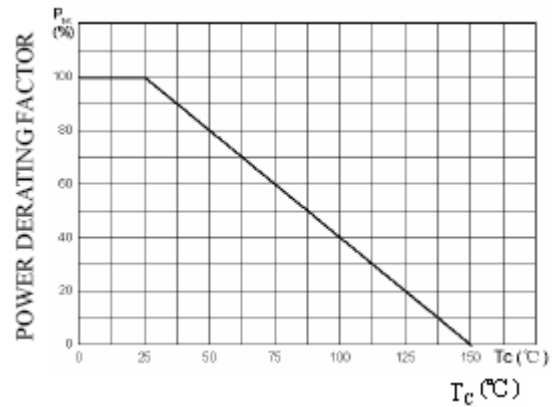


Fig.6 Power Derating

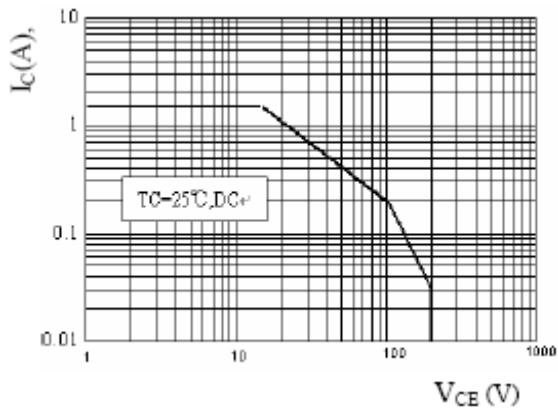
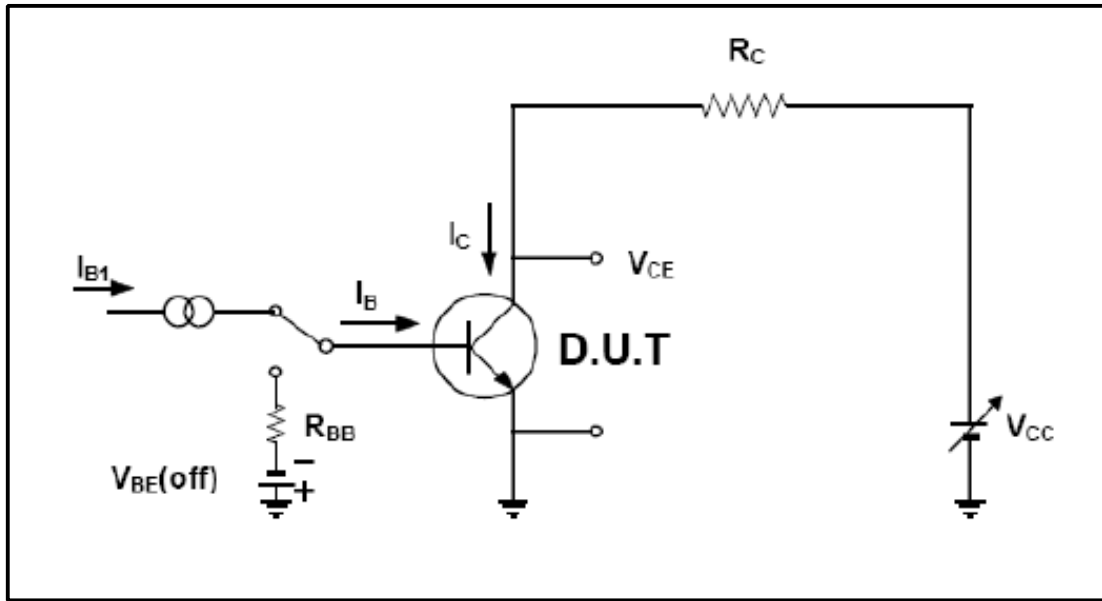
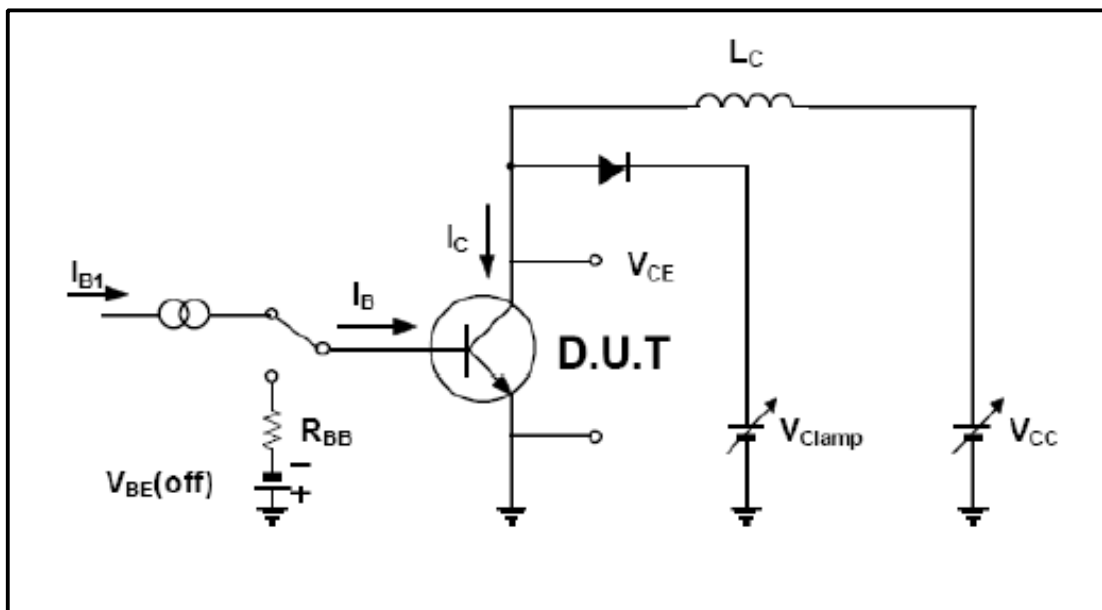


Fig.5 Static Characteristics



Resistive Load Switching Test Circuit



Inductive Load Switching & RBSOA Test Circuit

To-92 Package Dimension

Unit:mm

