

*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	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		1.5	A
I _{CP}	Collector pulse Current		3.0	A
I _B	Base Current		0.75	A
I _{BM}	Base Peak Current	t _p =5ms	1.5	A
P _C	Total Dissipation at T _c =25℃		18	W
T _J	Operation Junction temperature		-40~150	℃
T _{STG}	Storage Temperature		-40~150	℃

T_c:Case temperature(good cooling)

Thermal Characteristics

Symbol	Parameter	value	Units
R _{QJA}	Thermal Resistance Junction to Ambient	13.6	℃/W

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

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
V _{CEO(sus)}	Collector-Emitter Breakdown Voltage	I _c =10mA, I _b =0	400	-	-	V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _c =0.5A, I _b =0.1A I _c =1.0A, I _b =0.25A I _c =1.5A, I _b =0.5A	-	-	0.3 0.5 1.0	V
V _{BE(sat)}	Base -Emitter Saturation voltage	I _c =0.5A, I _b =0.1A I _c =1.0A, I _b =0.25A	-	-	1.0 1.2	V
I _{CBO}	Collector Base Cutoff Current (V _{be} =-1.5v)	V _{cb} =700V V _{cb} =700V, T _c =100°C	-	-	1.0 5.0	mA
hFE	DC Current Gain	V _{ce} =2V, I _c =0.5A V _{ce} =2V, I _c =1.0A	10 5	- -	30 25	
ton ts tf	Resistive Load Turn-on Time Storage time Fall Time	V _{CC} =125V, I _c =1A I _{B1} =0.2A, I _{B2} =-0.5A T _p =25μs	-	0.25 1.32 0.23	1.0 3.0 0.4	μs
ts tf	Inductive Load Storage Time Fall Time	V _{CC} =15V, I _c =1A I _{B1} =0.2A, I _{B2} =-0.5A L=0.35mH, V _{clamp} =300V	- -	1.2 0.12	4.0 0.3	μs
ts tf	Inductive Load Storage Time Fall Time	V _{CC} =15V, I _c =1A I _{B1} =0.2A, I _{B2} =-0.5A L=0.35mH, V _{clamp} =300V T _c =100°C	- -	1.8 0.16	5.0 0.4	μs

Note:

Pulse Test : Pulse width 300, Duty cycle 2%

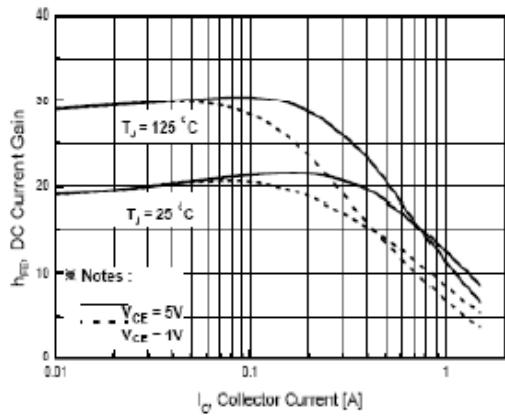


Fig.1 DC Current Gain

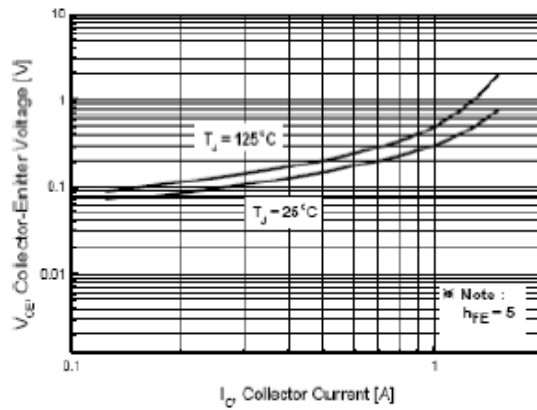


Fig.2 Base-Emitter Saturation Voltage

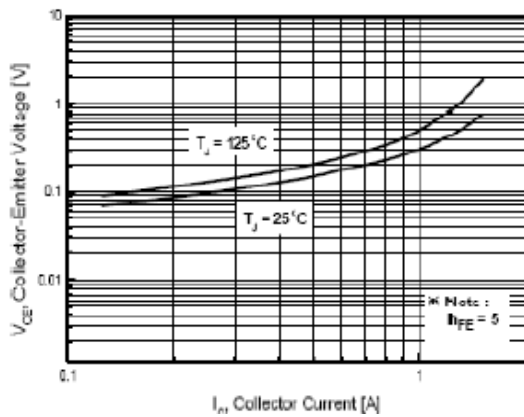


Fig.3 Collector-Emitter Saturation Voltage

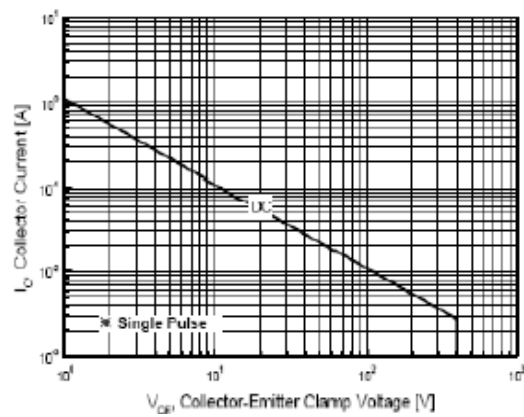


Fig.4 Safe Operation Area

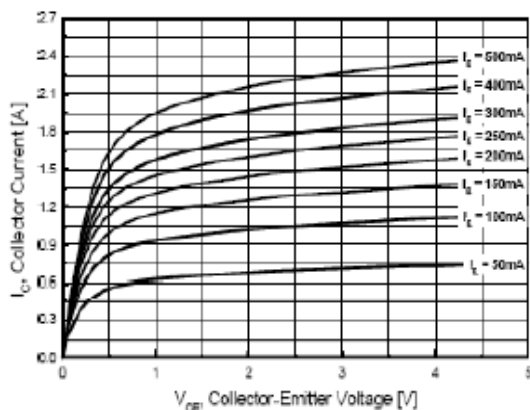


Fig.5 Static Characteristics

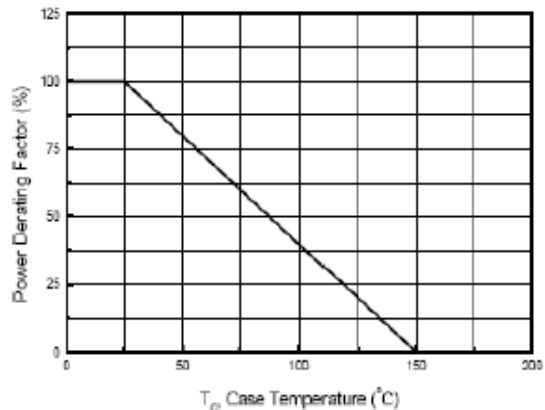
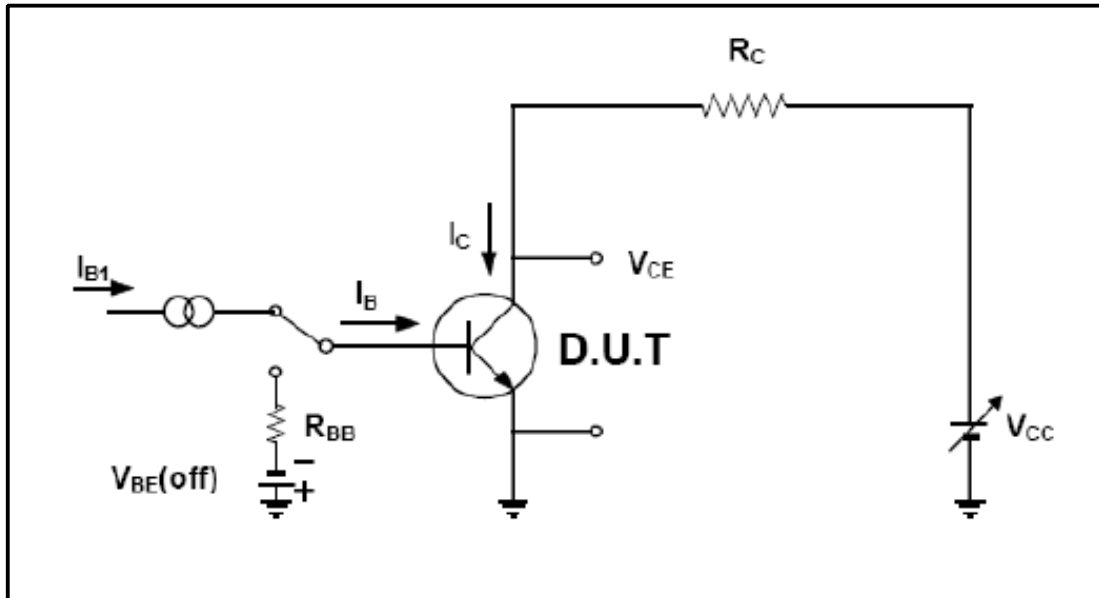
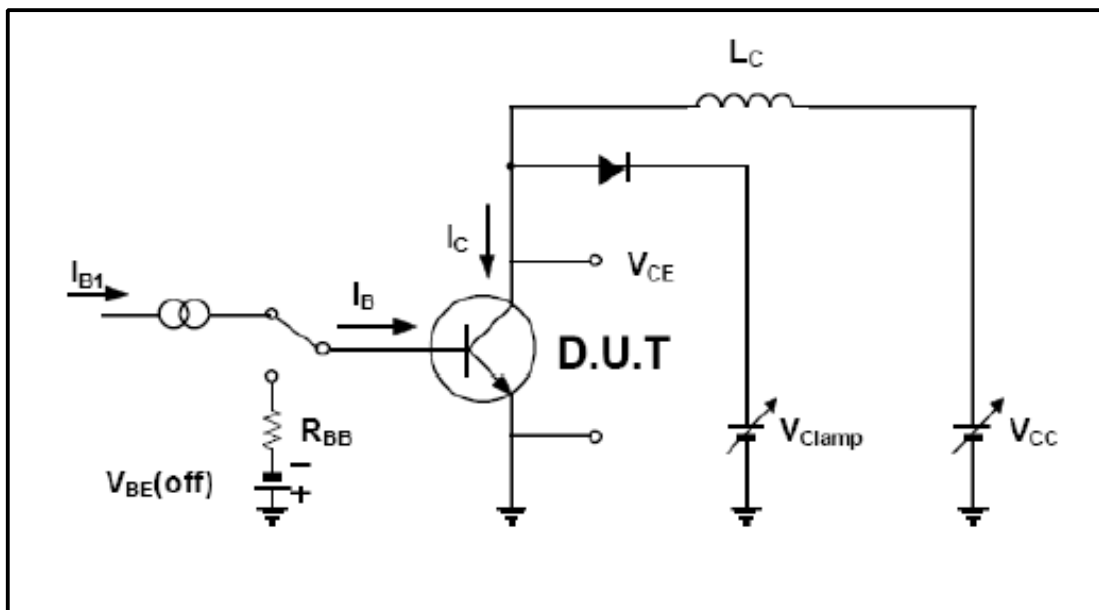


Fig.6 Power Derating



Resistive Load Switching Test Circuit

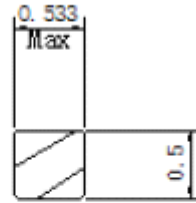
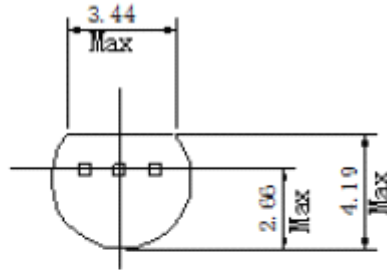


Inductive Load Switching & RBSOA Test Circuit

To-92 Package Dimension



Unit:mm



X-X

