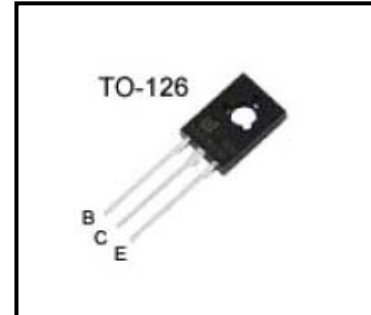


High Voltage Fast-Switching NPN Power Transistor

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	900	V
V _{CEO}	Collector-Emitter Voltage	I _B =0	530	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 °C		20	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	6.25	°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 Breakdown Voltage	I _c =10mA, I _b =0	530	-	-	V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _c =0.5A, I _b =0.1A I _c =1.0A, I _b =0.25A	-	-	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 1.5	V
I _{CBO}	Collector Base Cutoff Current (V _{be} =-1.5v)	V _{cb} =900V V _{cb} =900V, T _c =100°C	-	-	1.0 5.0	mA
h _{FE}	DC Current Gain	V _{ce} =10V, I _c =0.4A V _{ce} =10V, I _c =1A	20 6	- -	35 35	
ton	Resistive Load Turn-on Time	V _{CC} =125V, I _c =1A I _{B1} =0.2A, I _{B2} =-0.5A T _p =25μs	-	0.25	1.0	μs
ts	Storage time					
tf	Fall Time					
ts	Inductive Load Storage Time	V _{CC} =15V, I _c =1A I _{B1} =0.2A, I _{B2} =-0.5A L=0.35mH, V _{clamp} =300V	-	1.2	4.0	μs
tf	Fall Time					
ts	Inductive Load Storage 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	5.0	μs
tf	Fall Time					

Note:

Pulse Test : Pulse width 300, Duty cycle 2%

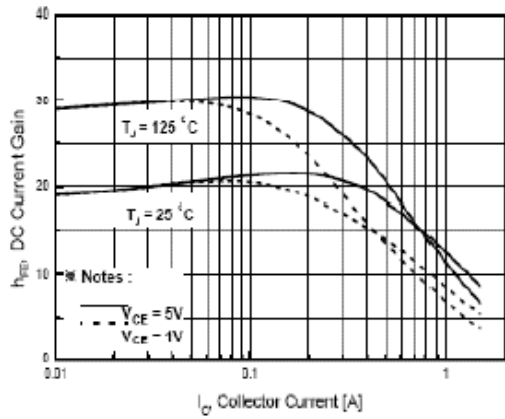


Fig.1 DC Current Gain

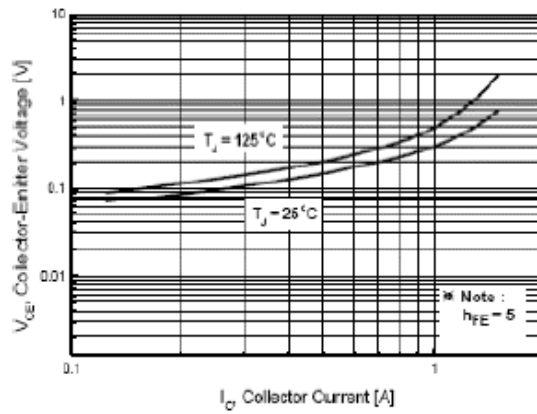


Fig.2 Base -Emitter Saturation Voltage

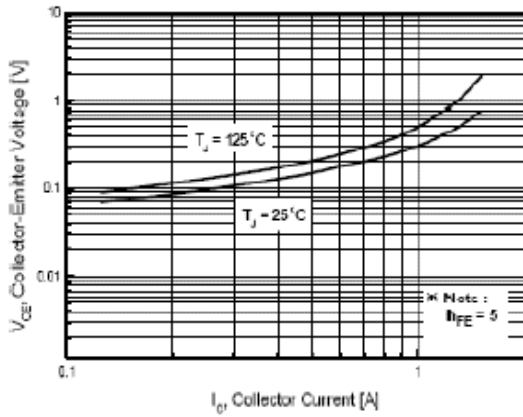


Fig.3 Collector-Emitter Saturation Voltage

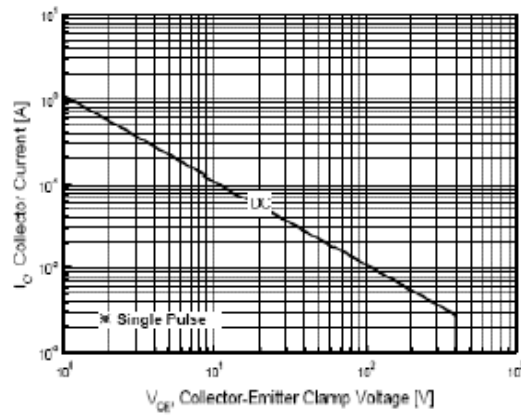


Fig.4 Safe Operation Area

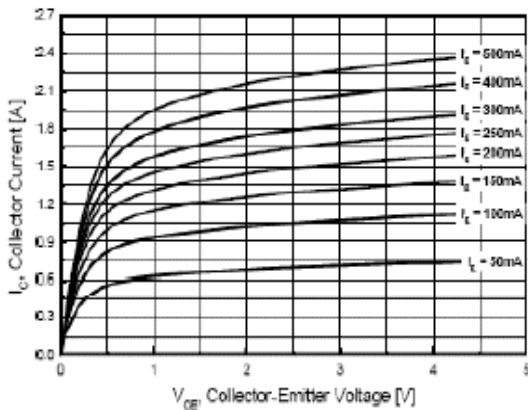


Fig.5 Static Characteristics

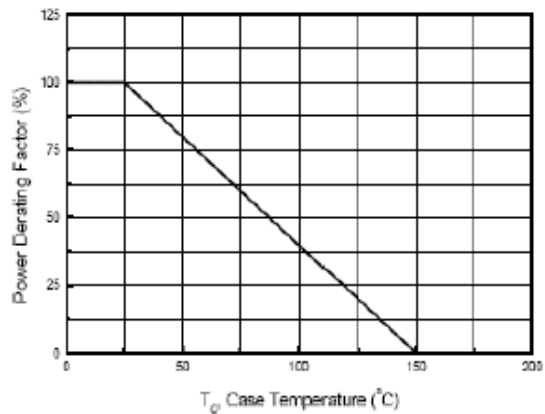
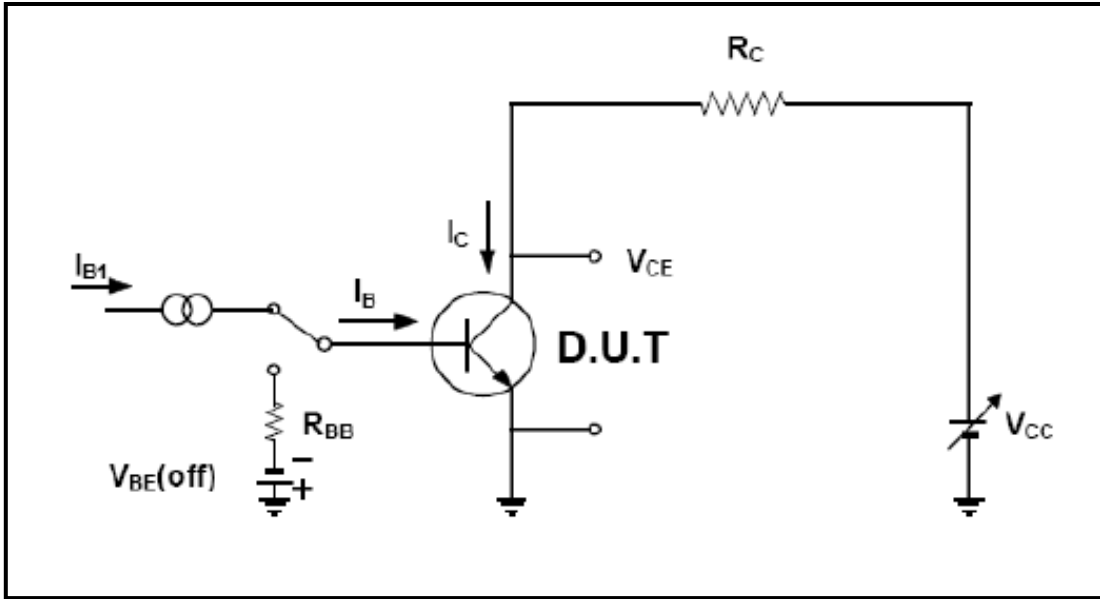
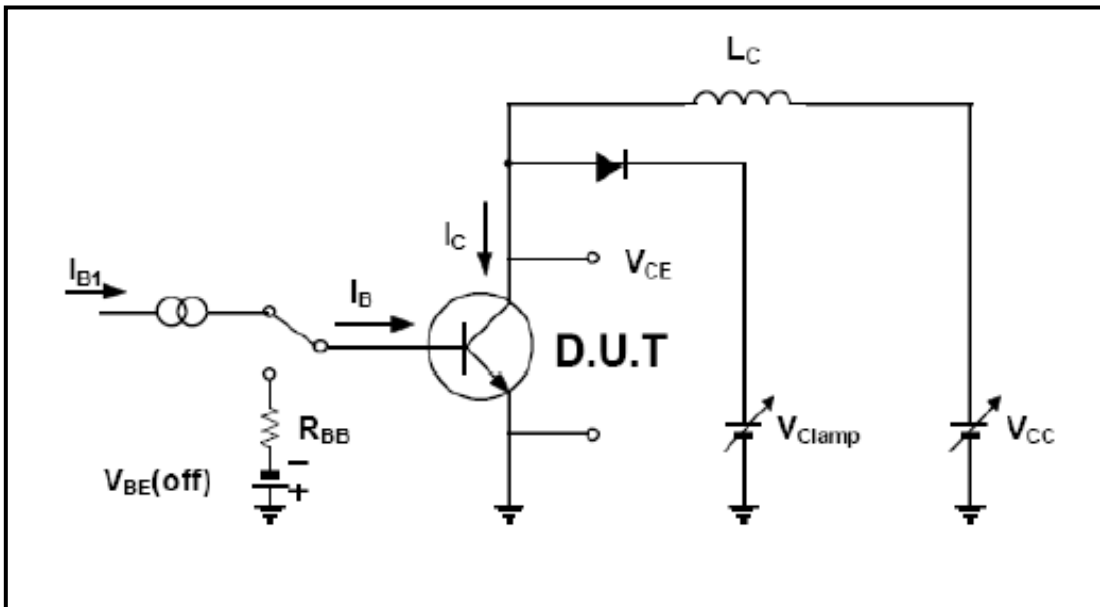


Fig.6 Power Derating



Resistive Load Switching Test Circuit



Inductive Load Switching & RBSOA Test Circuit

TO-126 Package Dimension

Dim	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
Φ		3.2			0.126	

