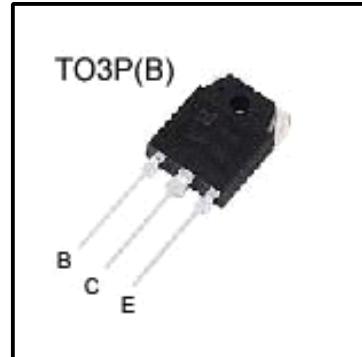


*High Voltage Fast-Switching NPN Power Transistor***Features**

- 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		12	A
I_{CP}	Collector pulse Current		25	A
I_B	Base Current		6.0	A
I_{BM}	Base Peak Current	$t_P=5ms$	12	A
P_c	Total Dissipation at $T_c=25^\circ\text{C}$		120	W
T_J	Operation Junction Temperature		-40~150	$^\circ\text{C}$
T_{STG}	Storage Temperature		-40~150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\Theta JC}$	Thermal Resistance Junction to Case	1.04	$^\circ\text{C}/\text{W}$
$R_{\Theta JA}$	Thermal Resistance Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
$V_{CEO(\text{sus})}$	Collector –Emitter Breakdown Voltage	$I_c=10\text{mA}, I_b=0$	400	–	–	V
$V_{CE(\text{sat})}$	Collector –Emitter Saturation Voltage	$I_c=5.0\text{A}, I_b=1.0\text{A}$	–	–	1.0	V
		$I_c=8.0\text{A}, I_b=1.6\text{A}$			1.5	
		$I_c=12\text{A}, I_b=3.0\text{A}$	–	–	3.0	V
		$I_c=8.0\text{A}, I_b=1.6\text{A}$ $T_c=100^\circ\text{C}$			2.0	
$V_{BE(\text{sat})}$	Base–Emitter Saturation Voltage	$I_c=5.0\text{A}, I_b=1.0\text{A}$	–	–	1.2	V
		$I_c=8.0\text{A}, I_b=1.6\text{A}$	–	–	1.6	
		$I_c=8.0\text{A}, I_b=1.6\text{A}$ $T_c=100^\circ\text{C}$	–	–	1.5	V
I_{EBO}	Emitter–Base Cutoff Current	$V_{eb}=9\text{V}, I_c=0\text{V}$	–	–	10	uA
hFE	DC Current Gain	$V_{ce}=5\text{V}, I_c=5.0\text{A}$	10	–	40	
		$V_{ce}=5\text{V}, I_c=8.0\text{A}$	6	–	30	
t_s	Storage Time	$V_{cc}=5.0\text{V}, I_c=0.5\text{A}$ (UI9600)	4	–	10	μs
t_f	Fall Time			–	0.8	
f_T	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%

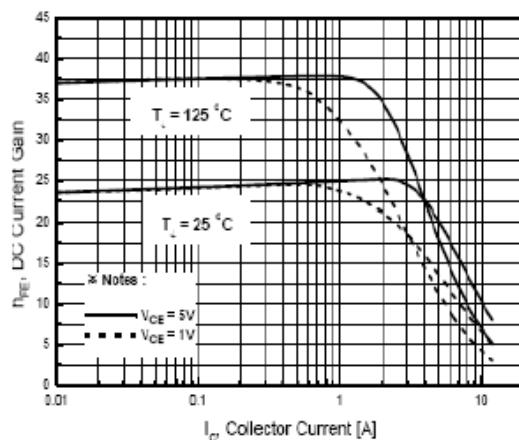


Fig.1 DC Current Gain

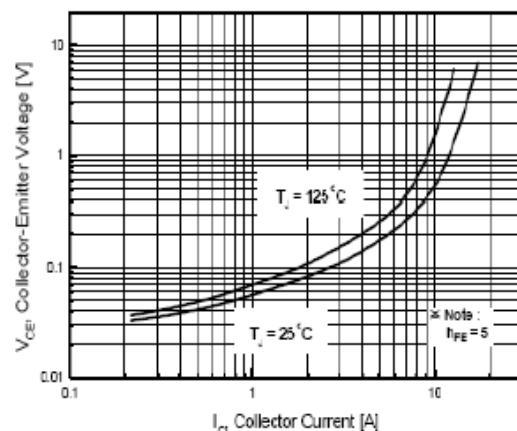


Fig.2 Collector -Emitter Saturation Voltage

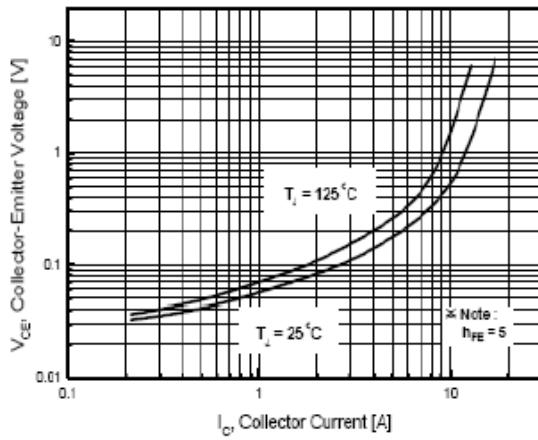


Fig.3 Base -Emitter Saturation Voltage

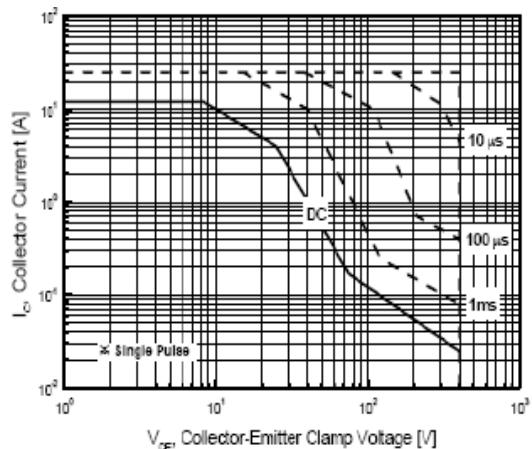


Fig.4 Safe Operation Area

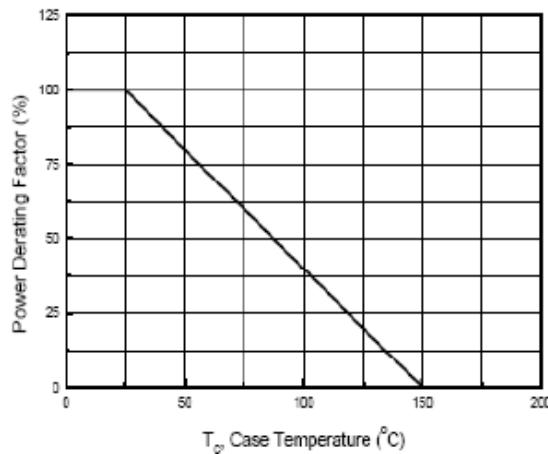


Fig.5 Power Derating

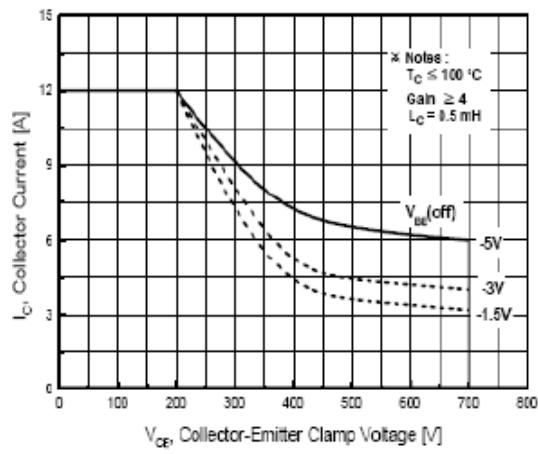
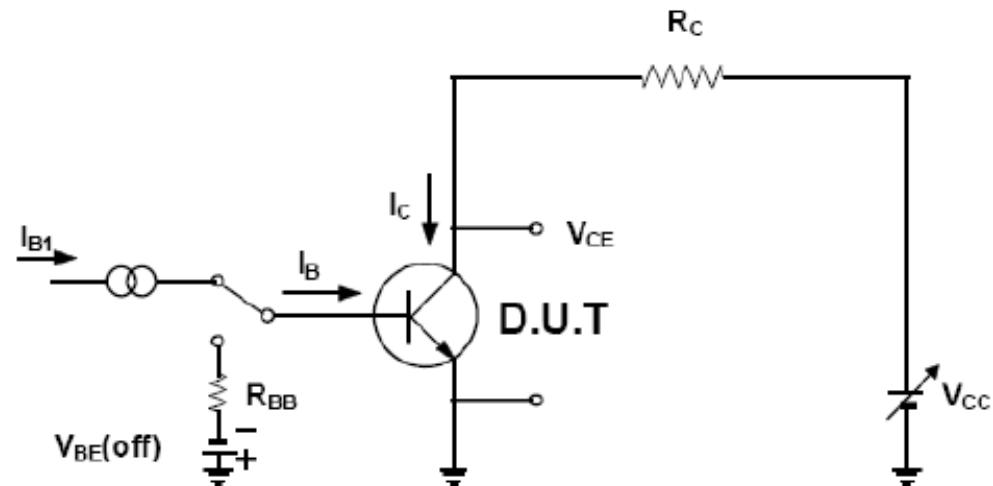
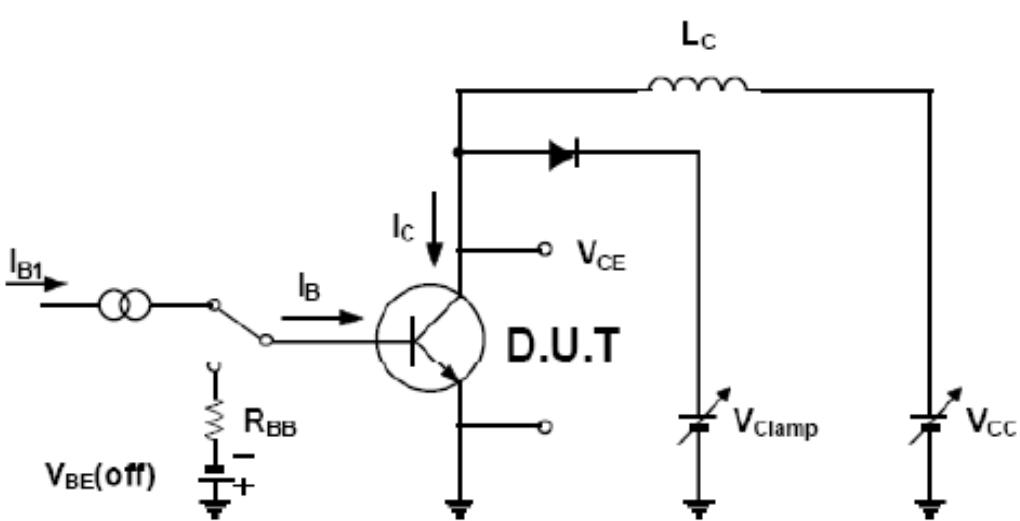


Fig.6 Reverse Biased Safe Operation Area



Resistive Load Switching Test Circuit



Inductive Load Switching & RBSOA Test Circuit

To3P(B) Package Dimension