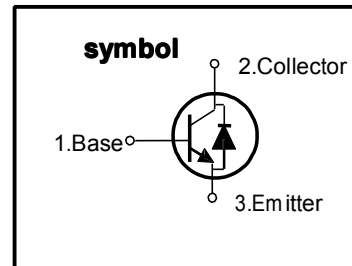


*High Voltage Fast-Switching NPN Power Transistor*

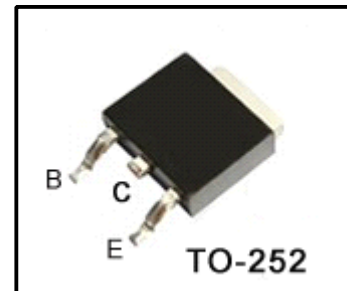
**Features**

- 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
$V_{CBO}$	Collector-Base Voltage	$V_{BE}=0$	600	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		2	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 $T_c^*=25^\circ C$		10	W
$T_J$	Operation Junction Temperature		150	$^\circ C$
$T_{STG}$	Storage Temperature		-55~150	$^\circ C$

$T_c$  :Case temperature (good cooling)

$T_a$  :Ambient temperature (without heat sink)

**Thermal characteristics**

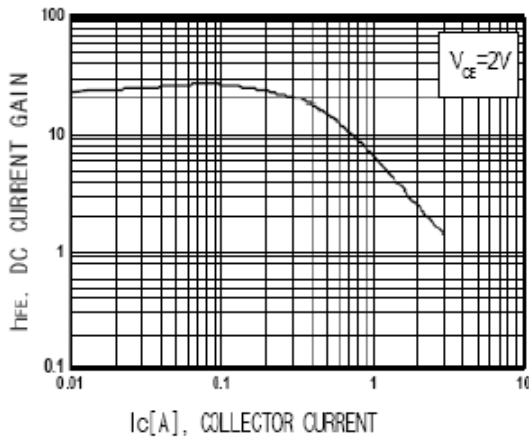
Symbol	Parameter	Value	Units
$R_{\theta JC}$	Thermal Resistance Junction to Case	12.5	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	8.9	$^\circ C/W$

**Electrical Characteristics**(T<sub>c</sub>=25°C unless otherwise noted)

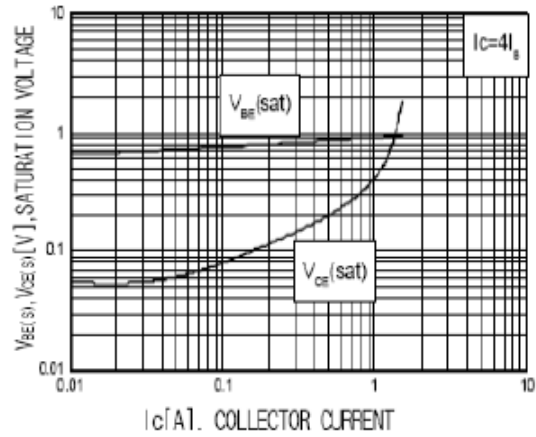
Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>BE</sub> =9V	-	-	20	μA
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>B</sub> =0, I <sub>C</sub> =10mA	400	-	-	V
V <sub>CE(sat)</sub>	Collector -Emitter Saturation Voltage	I <sub>C</sub> =1.0A, I <sub>B</sub> =0.2A I <sub>C</sub> =2.0A, I <sub>B</sub> =0.5A I <sub>C</sub> =4.0A, I <sub>B</sub> =1.0A	-	-	0.5 0.6 1.0	V
V <sub>BE(sat)</sub>	Base -Emitter Saturation Voltage	I <sub>C</sub> =1.0A, I <sub>B</sub> =0.2A I <sub>C</sub> =2.0A, I <sub>B</sub> =0.5A	-	-	1.2 1.6	V
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> =500A, V <sub>CE</sub> =5V I <sub>C</sub> =1mA, V <sub>CE</sub> =5V	10 9	-	40 -	
t <sub>s</sub> t <sub>f</sub>	Storage Time Fall Time	I <sub>C</sub> =0.5A, V <sub>CC</sub> =5V (UI9600A)	-	-	4 0.8	μs
f <sub>T</sub>	Current Gain Bandwidth Product	I <sub>C</sub> =0.5A, V <sub>CE</sub> =10V	4	-	-	MHz
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> =2A	-	-	2	V
C <sub>OB</sub>	Output Capacitance	I <sub>C</sub> =0.5A, V <sub>CB</sub> =10V	-	21		pF

Note:

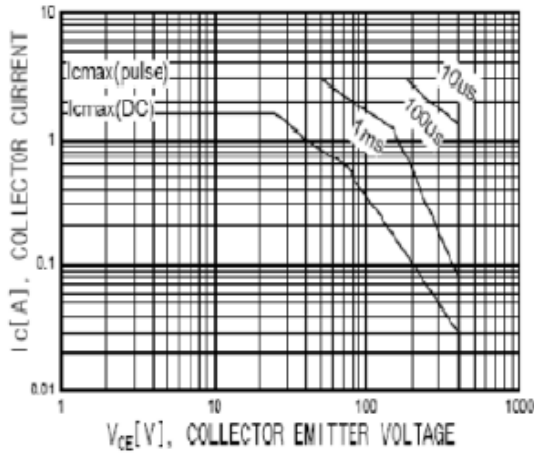
Pulse Test :Pulse width 300, Duty cycle 2%



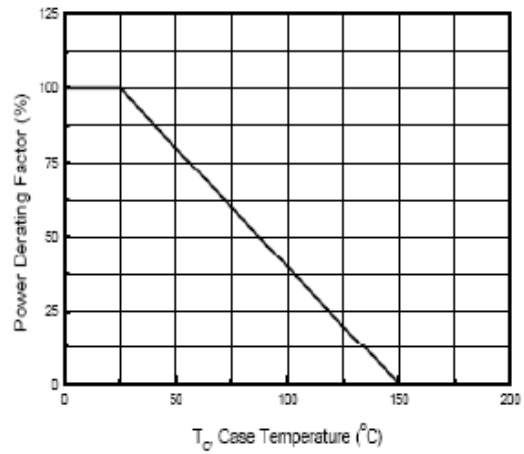
**Fig.1 DC Current Gain**



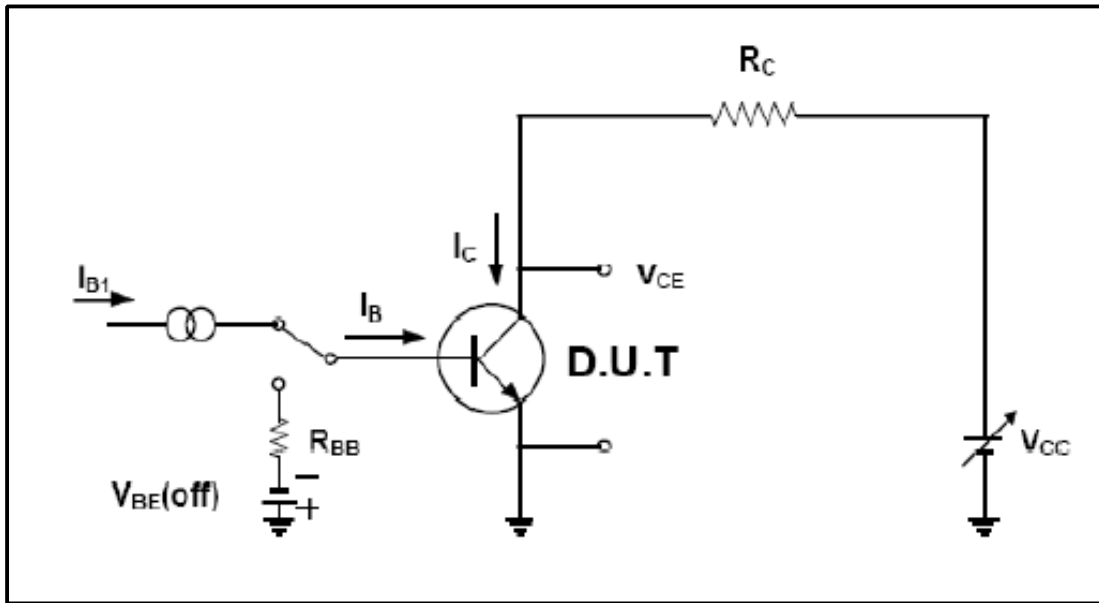
**Fig.2 Saturation Voltage**



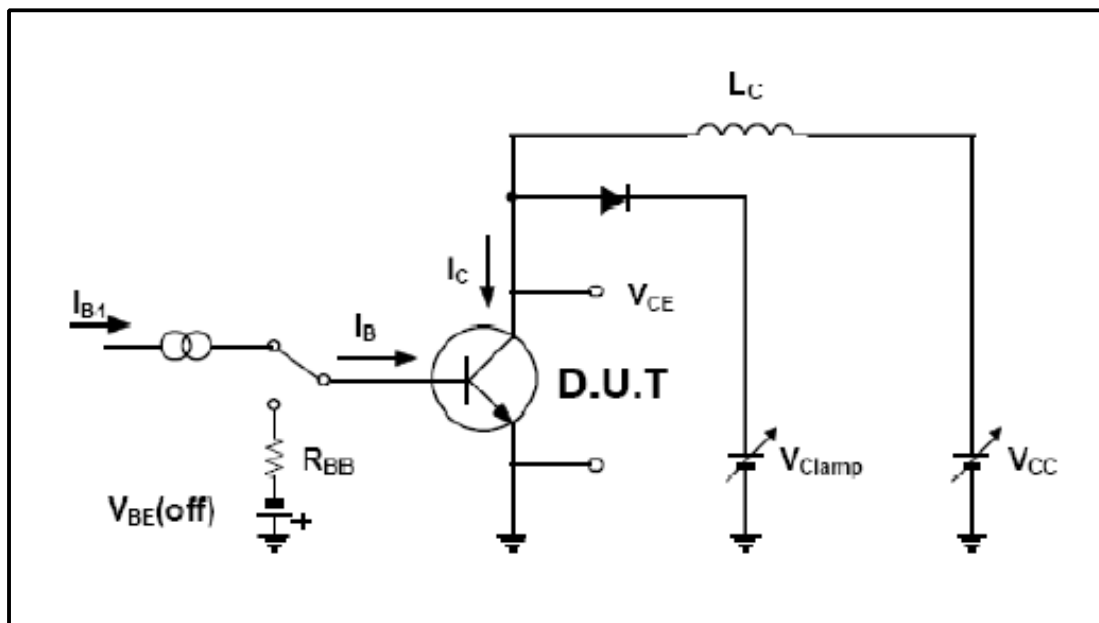
**Fig.3 Safe Operation**



**Fig.4 Power Derating**



**Resistive Load Switching Test Circuit**



**Inductive Load Switching & RBSOA Test Circuit**

**TO-252 Package Dimension**

