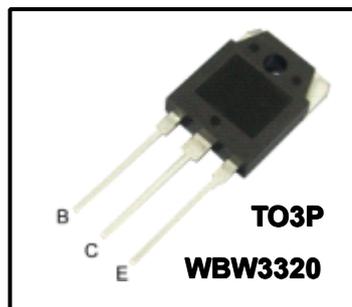
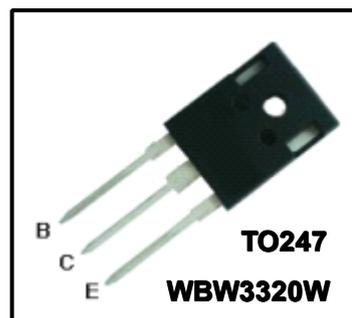


*High Voltage Fast-Switching NPN Power Transistor*
**Features**

- ◆ 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	$V_{BE} = 0$	500	V
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	400	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	9	V
$I_C$	Collector Current		15	A
$I_{CP}$	Collector pulse Current		30	A
$I_B$	Base Current		7	A
$I_{BM}$	Base Peak Current	$t_p = 5ms$	14	A
$P_C$	Total Dissipation at $T_c = 25^\circ C$		120	W
$T_J$	Operation Junction Temperature		150	$^\circ C$
$T_{STG}$	Storage Temperature		-55 ~ 150	$^\circ C$

**Thermal Characteristics**

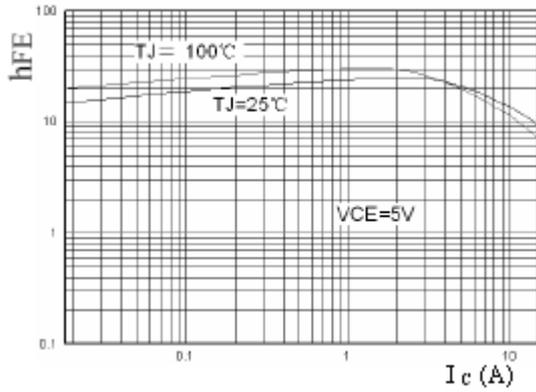
Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case	1.05	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	62.5	$^\circ C/W$

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

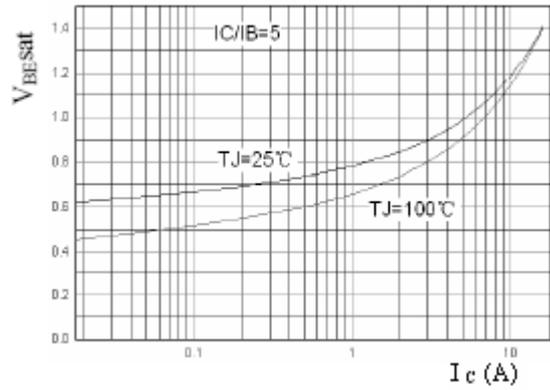
Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
$V_{CEQ(sus)}$	Collector-Emitter Breakdown Voltage	$I_c=10\text{mA}, I_b=0$	400	-	-	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_c=10\text{A}, I_b=2\text{A}$	-	-	1.0	V
		$I_c=12\text{A}, I_b=2.4\text{A}$ $T_c=100^\circ\text{C}$	-	-	2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_c=10\text{A}, I_b=2\text{A}$	-	-	1.5	V
		$I_c=12\text{A}, I_b=2.4\text{A}$ $T_c=100^\circ\text{C}$	-	-	1.8	V
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{eb}=9\text{V}, I_c=0\text{V}$	-	-	10	$\mu\text{A}$
$I_{cBO}$	Collector-Base Cutoff Current	$V_{cb}=500\text{V}, I_e=0\text{V}$	-	-	100	$\mu\text{A}$
$I_{CEO}$	Collector-Emitter Cutoff Current	$V_{ce}=400\text{V}, I_b=0\text{V}$			50	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{ce}=5\text{V}, I_c=6\text{A}$	10	-	45	
		$V_{ce}=5\text{V}, I_c=10\text{A}$	8	-	-	
$t_s$	Storage Time	$V_{CC}=24\text{V}, I_c=6\text{A}$	-		3	$\mu\text{s}$
$t_f$	Fall Time	$I_{B1}=-I_{B2}=1.2\text{A}$ (UI9600)			0.7	
$f_T$	Current Gain Band with Product	$V_{ce}=10\text{V}, I_c=0.5\text{A}$	4			MHz

**Note:**

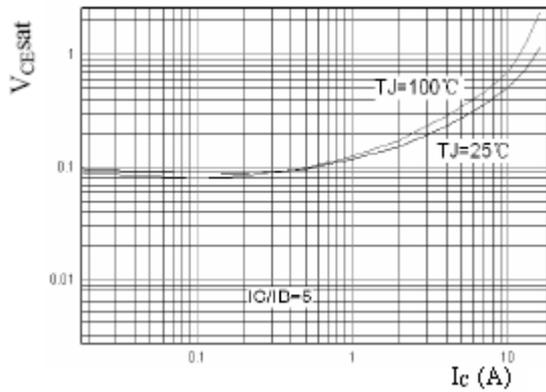
Pulse Test : Pulse width 300, Duty cycle 2%



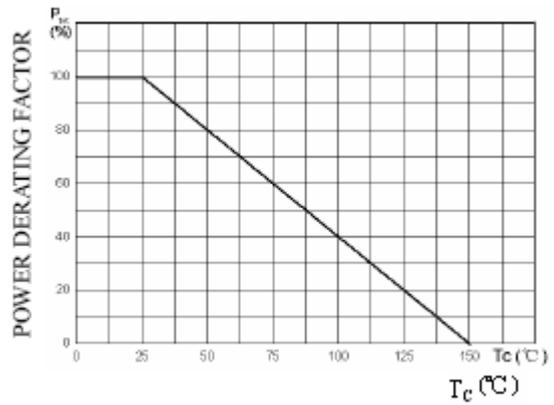
**Fig.1 DC Current Gain**



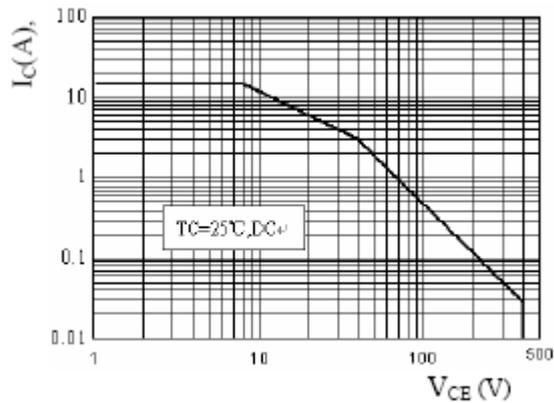
**Fig.2 Base-Emitter Saturation Voltage**



**Fig.3 Collector-Emitter Saturation Voltage**

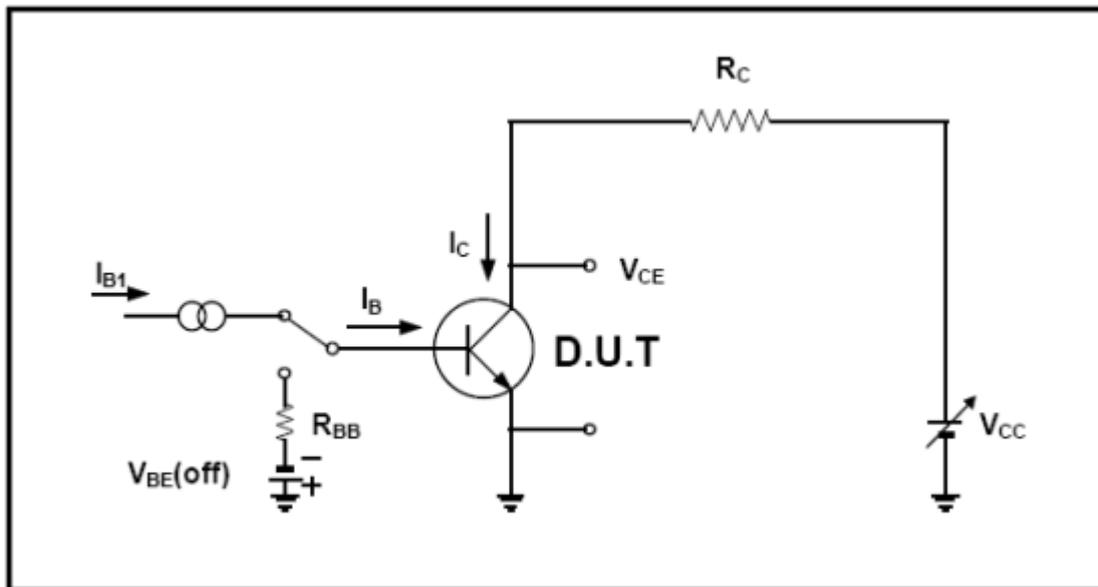


**Fig.6 Power Derating**

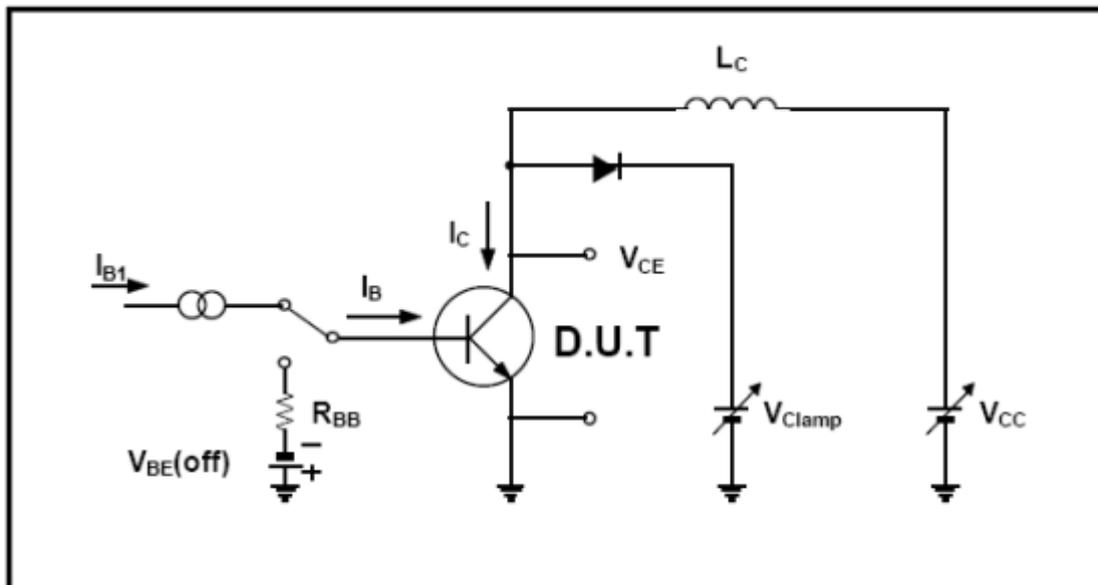


**Fig.5 Static Characteristics**

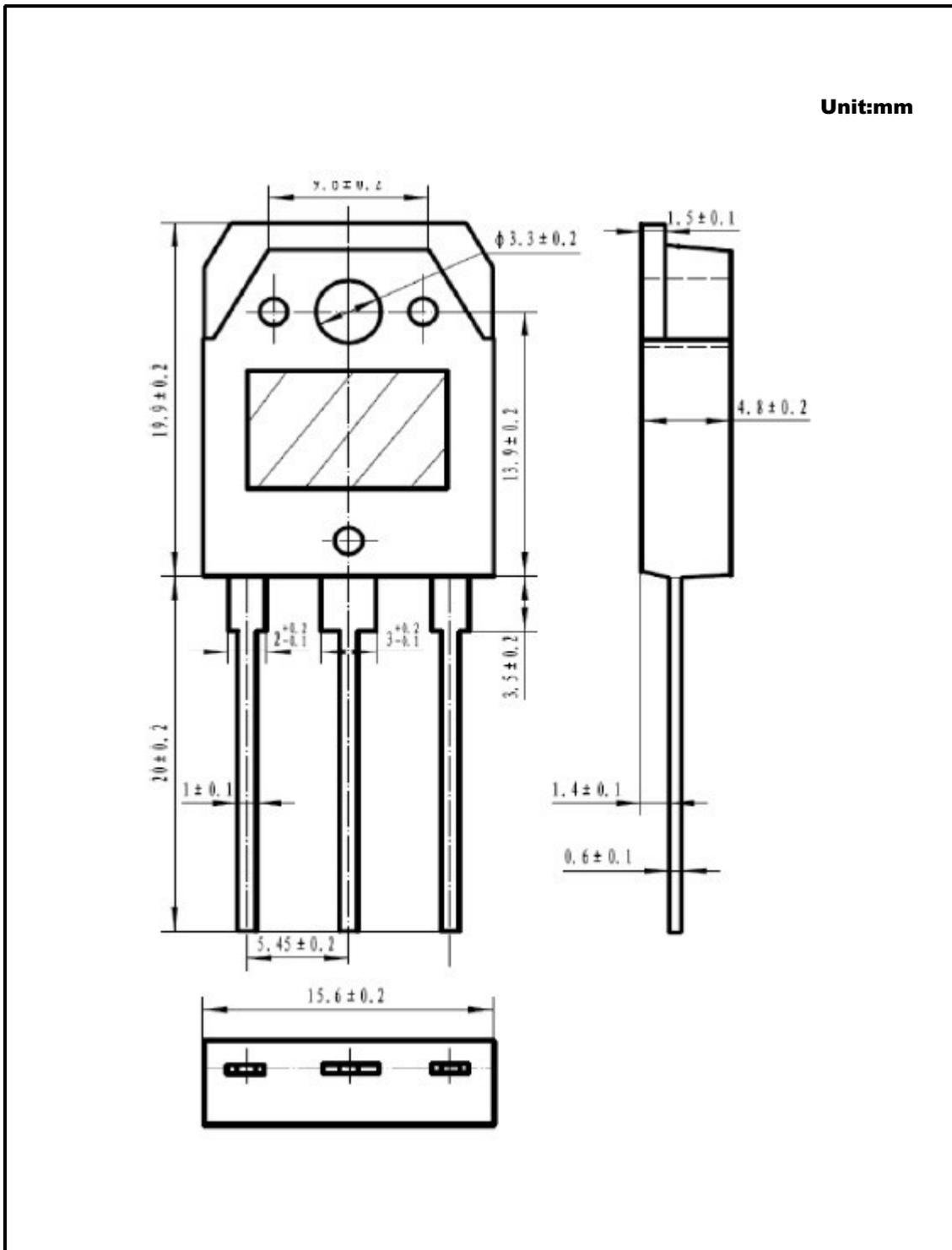
**Resistive Load Switching Test Circuit**



**Inductive Load Switching & RBSOA Test Circuit**



**TO3PB Package Dimension**



**TO247 Package Dimension**

