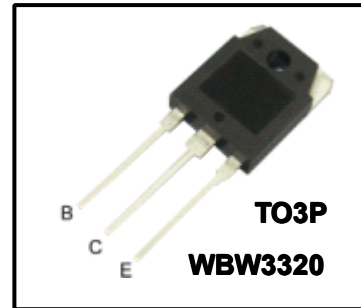
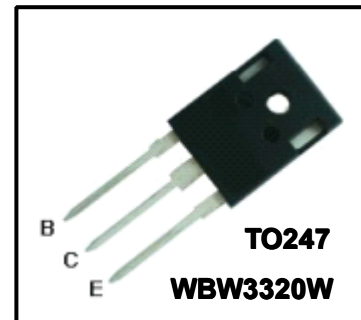


*High Voltage Fast-Switching NPN Power Transistor***Features**

- ◆ 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	μA
I_{CBO}	Collector-Base Cutoff Current	$V_{cb}=500\text{V}, I_e=0\text{V}$	-	-	100	μA
I_{CEO}	Collector-Emitter Cutoff Current	$V_{ce}=400\text{V}, I_b=0\text{V}$			50	μA
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	μs
t_f	Fall Time	$I_{B1}=-I_{B2}=1.2\text{A}$ (UI9600)			0.7	
f_T	Current Gain Band with Prouct	$V_{ce}=10\text{V}, I_c=0.5\text{A}$	4			MHz

Note:

Pulse Test : Pulse width 300, Duty cycle 2%

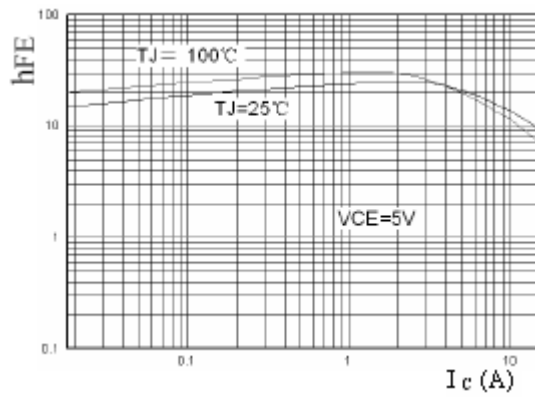


Fig.1 DC Current Gain

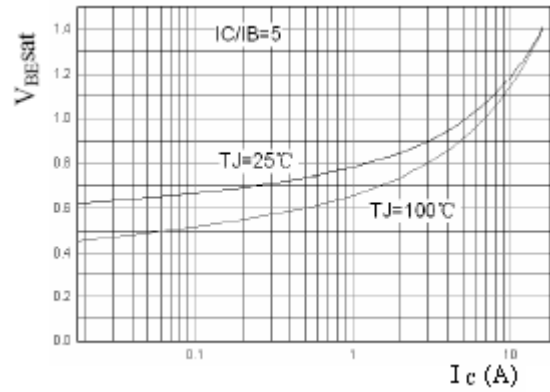


Fig.2 Base-Emitter Saturation Voltage

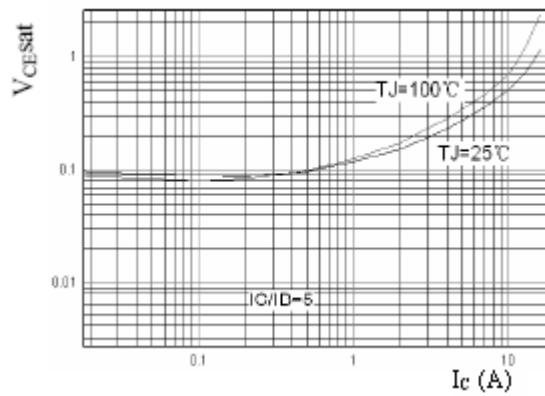


Fig.3 Collector-Emitter Saturation Voltage

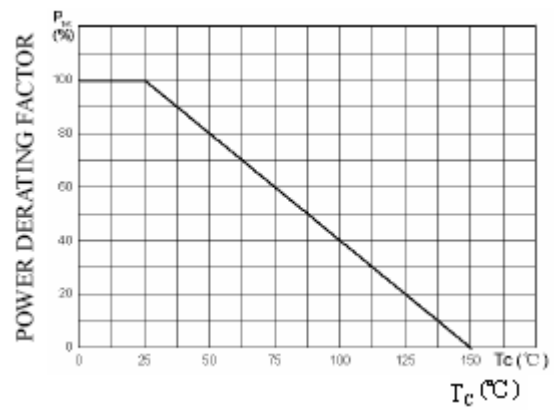


Fig.6 Power Derating

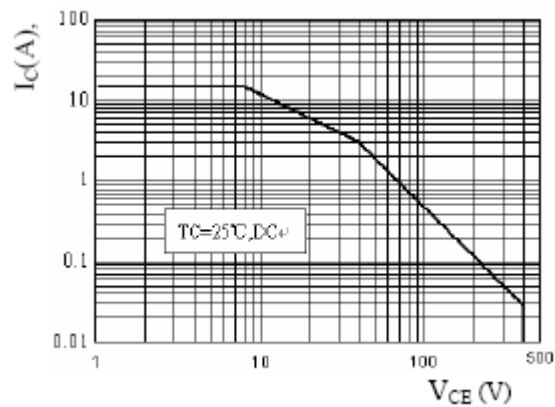
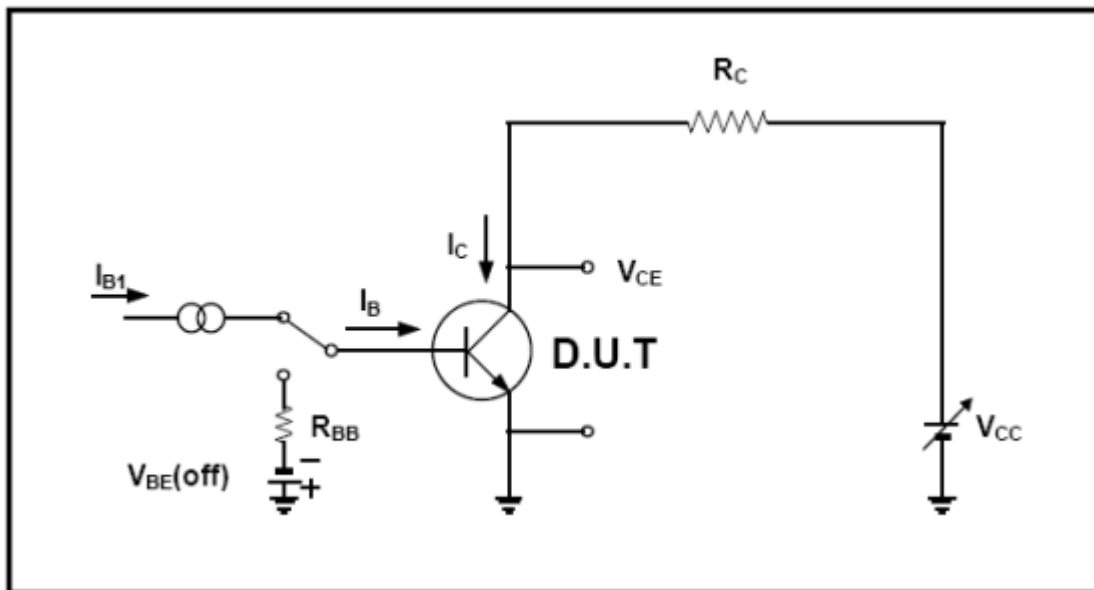
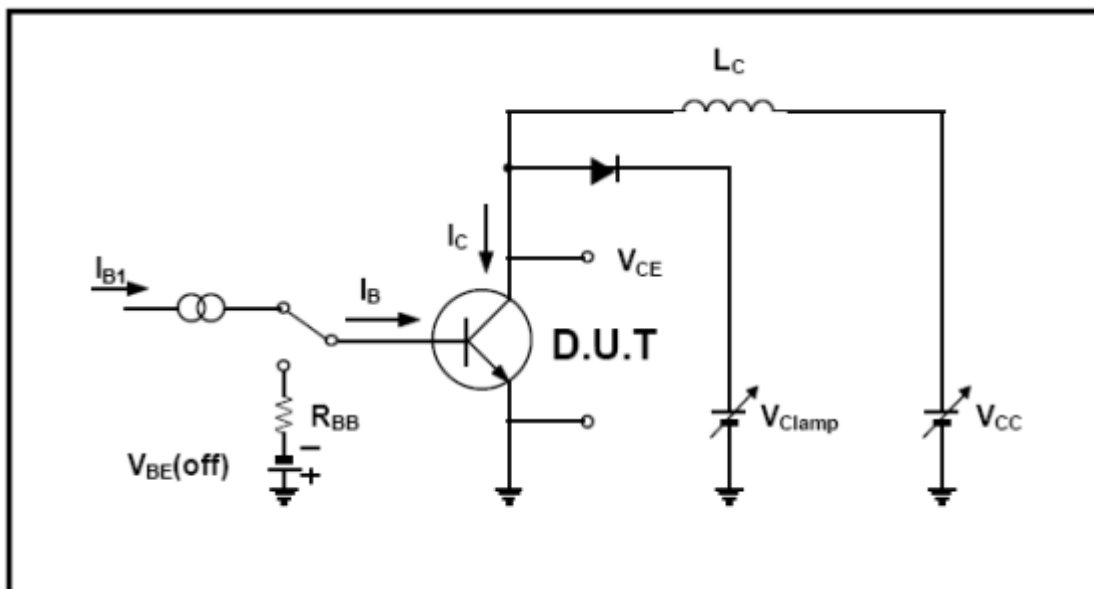


Fig.5 Static Characteristics

Resistive Load Switching Test Circuit

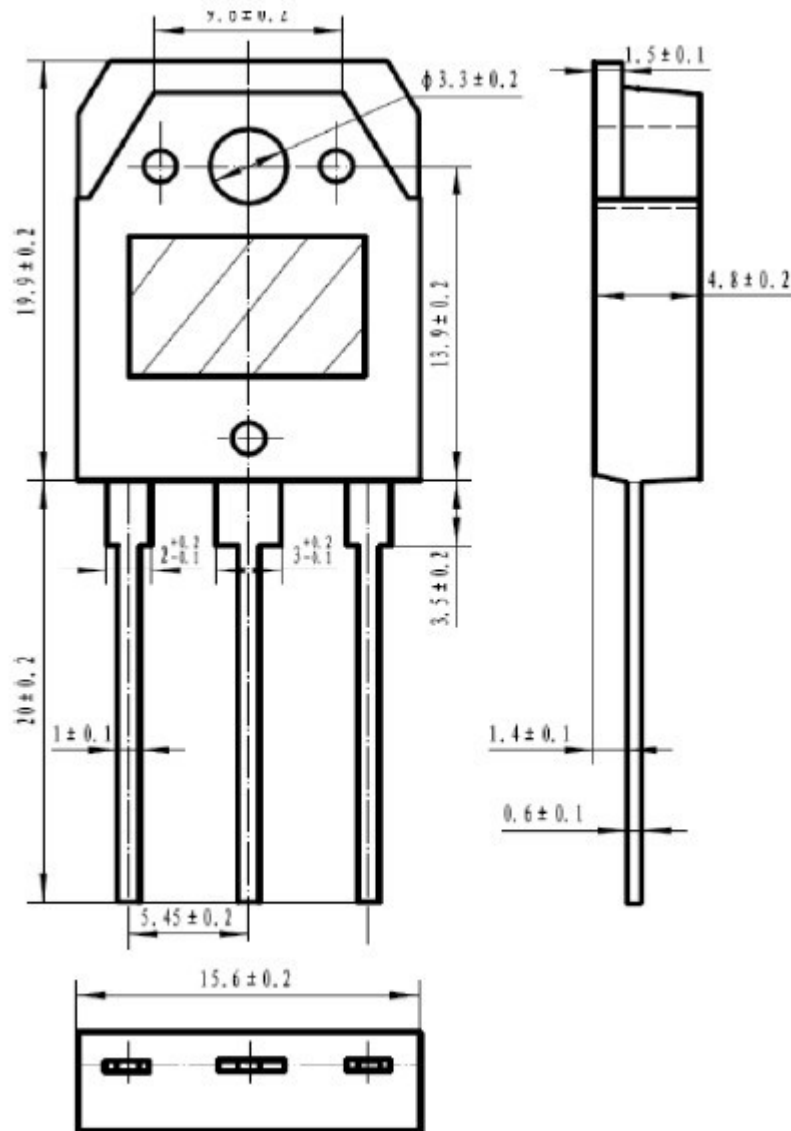


Inductive Load Switching & RBSOA Test Circuit



TO3PB Package Dimension

Unit:mm



TO247 Package Dimension

