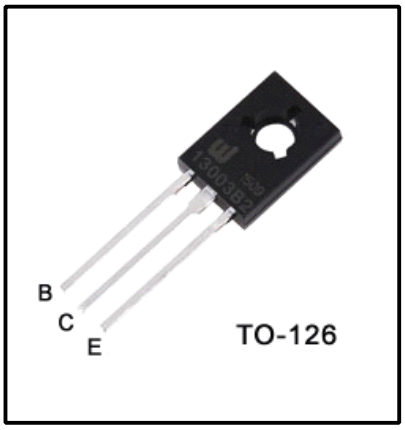
WBR13003B2

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	600	V
V_{CEO}	Collector -Emitter voltage	I_B=0	400	V
V_{EBO}	Emitter-Bade Voltage	I_C=0	9.0	V
I_C	Collector Current		1.2	A
I_{CP}	Collector pulse Current		2.4	A
I_B	Base Current		0.75	A
I_{BM}	Base Peak Current	t_P=5ms	1.5	A
P_C	Total dissipation at Tc=25℃		20	W
T_J	Operation Junction Temperature		-40~150	℃
T_{STG}	Storage Temperature		-40~150	℃

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\Theta JC}$	Thermal Resistance Junction to Case	6.25	℃/W
$R_{\Theta JA}$	Thermal Resistance Junction to Ambient	89	℃/W

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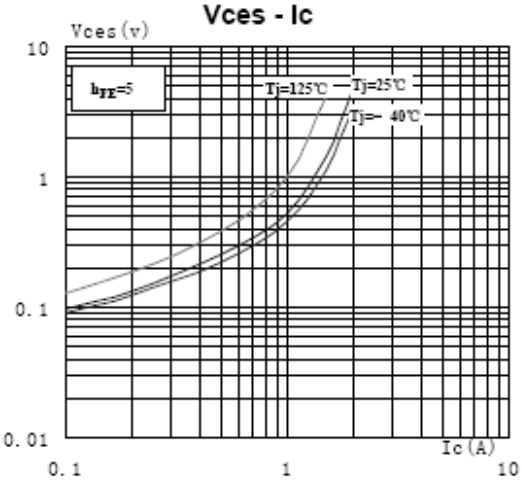
Electrical Characteristics(Tc=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage	Ic=10mA,Ib=0	400	–	–	V
$V_{CE(sat)}$	Collector –Emitter Saturation Voltage	Ic=0.2A,Ib=40mA	–	–	0.3	V
$V_{BE(sat)}$	Base –Emitter Saturation Voltage	Ic=0.2A,Ib=40mA	–	–	1.2	V
I_{CBO}	Collector –Base Cutoff Current	Vcb=600V Ie=0	–	–	0.1	mA
I_{CEO}	Collector –EmitterCutoff Current	Vce=400V Ib=0	–	–	0.25	mA
I_{EBO}	Emitter –Base Cutoff Current	Veb=7V Ic=0	–	–	0.1	mA
hFE	DC Current Gain	Vce=10V,Ic=10mA	10	–	30	
f_T	Characteristic frequency	Vce=10V Ic=50mA F=1MHz	5	–	–	MHz
ton ts tf	Turn –on Time Storage Time Fall Time	Vcc=5V, Ic=0.25A	1.5	0.2 – 0.15	1.0 4.0 0.4	μs

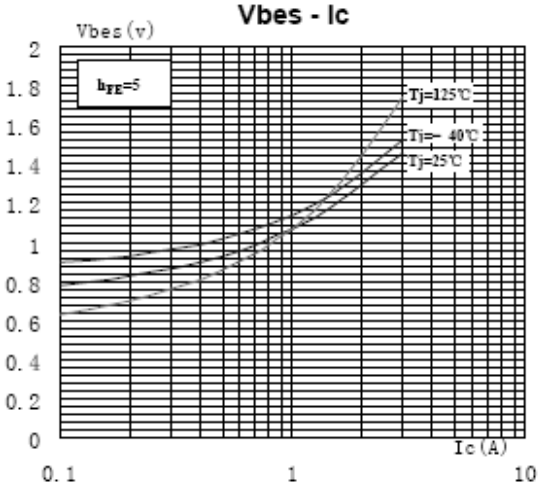
Note：

Pulse Test：Pulse width 300,Duty cycle 2%

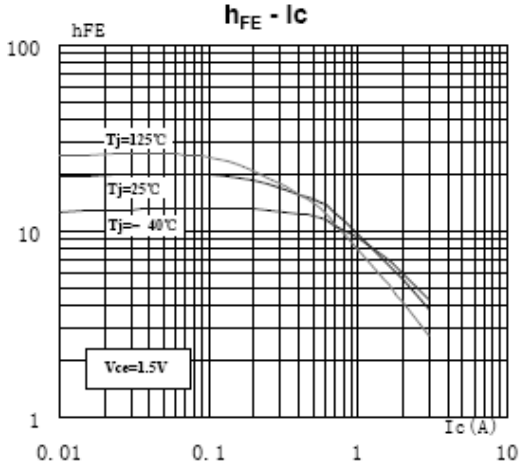
Vces - Ic



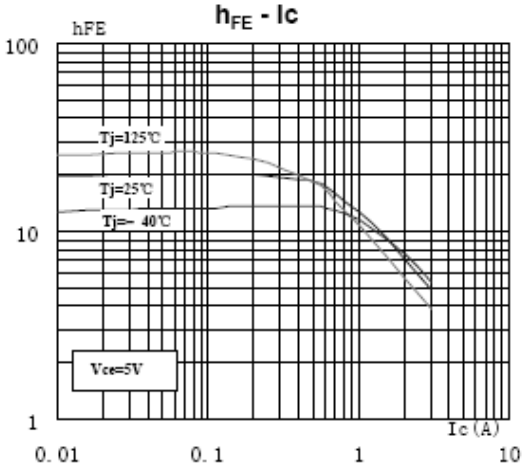
Vbes - Ic



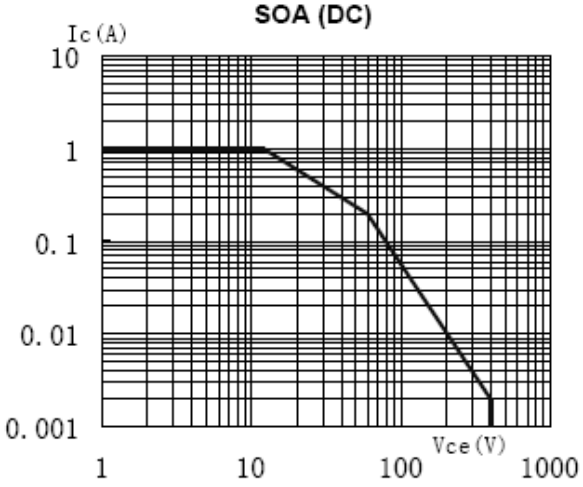
h_{FE} - Ic



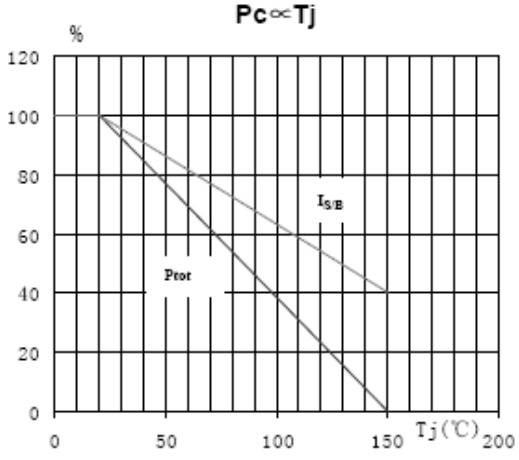
h_{FE} - Ic

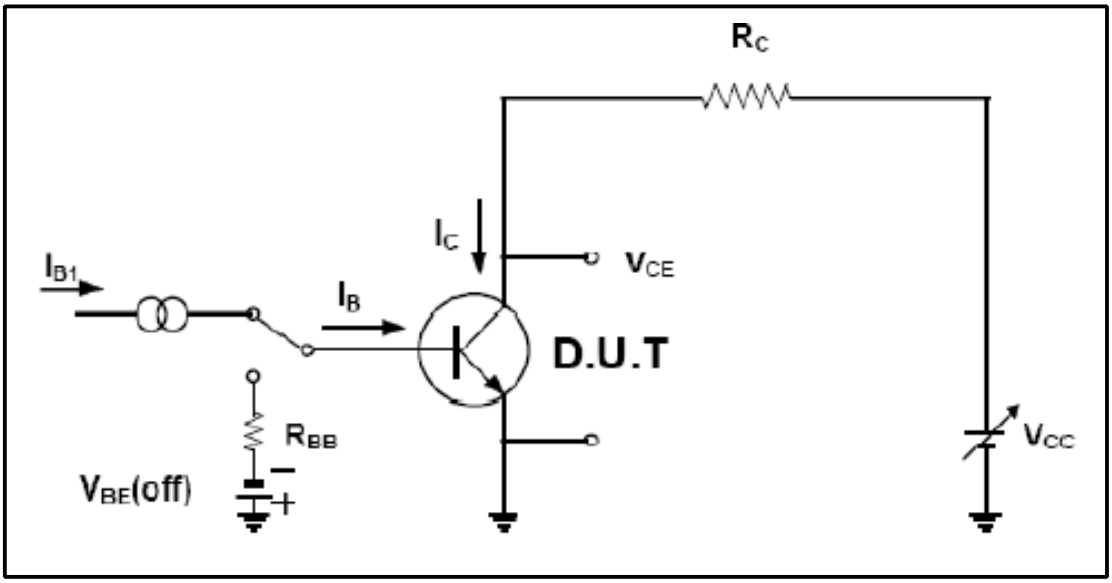


SOA (DC)

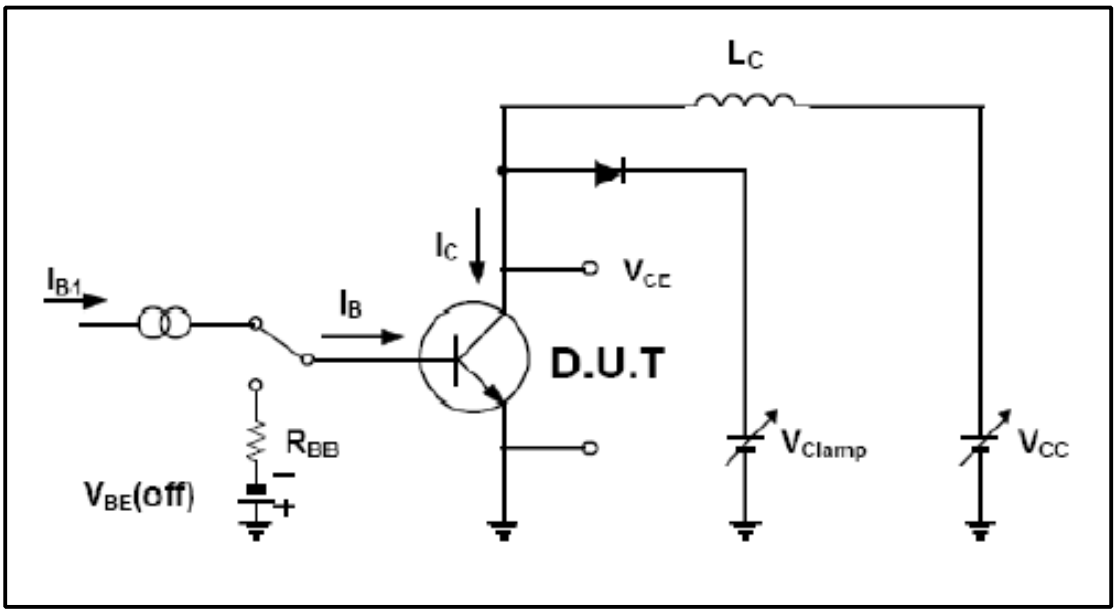


Pc∝Tj





Resistive Load Switching test Circuit



Inductive Load Switching & RBSOA Test circuit

TO-126 Package Dimension

Unit:mm

