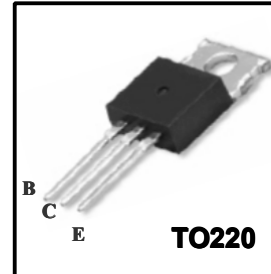


*High Voltage Fast-Switching NPN Power Transistor***Features**

- ◆ 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 and inverters motor controls

**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-Base Voltage	$I_C = 0$	9.0	V
I_C	Collector Current		12	A
I_{CP}	Collector pulse Current		24	A
I_B	Base Current		6.0	A
I_{BM}	Base Peak Current	$t_p = 5ms$	12	A
P_C	Total Dissipation at $T_C = 25^{\circ}C$		100	W
T_J	Operation Junction Temperature		150	$^{\circ}C$
T_{STG}	Storage Temperature		- 65 ~ 150	$^{\circ}C$

Thermal Characteristics

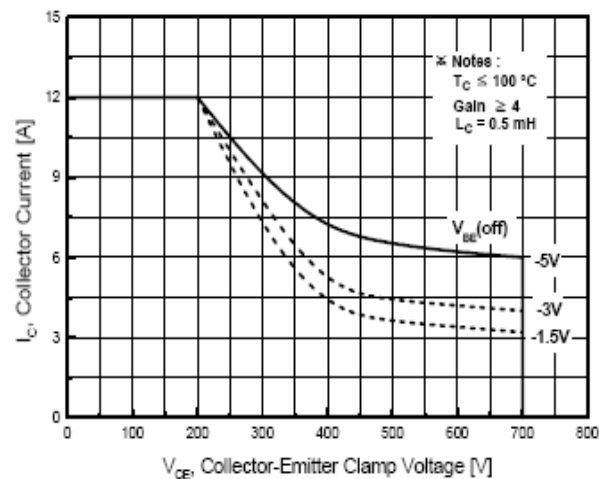
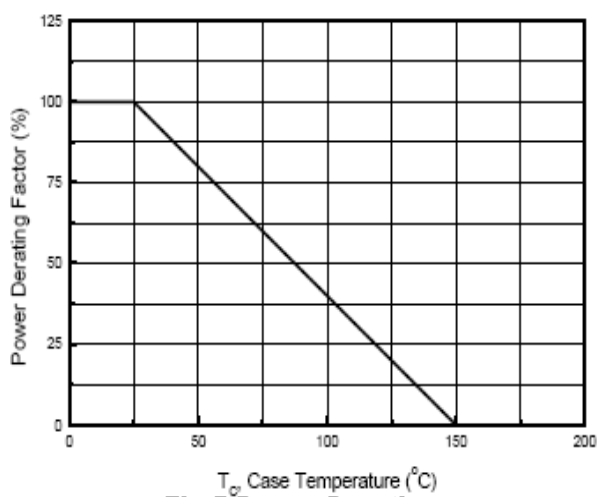
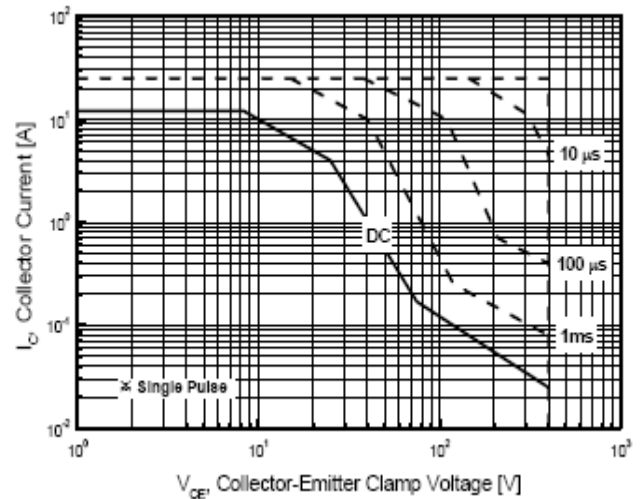
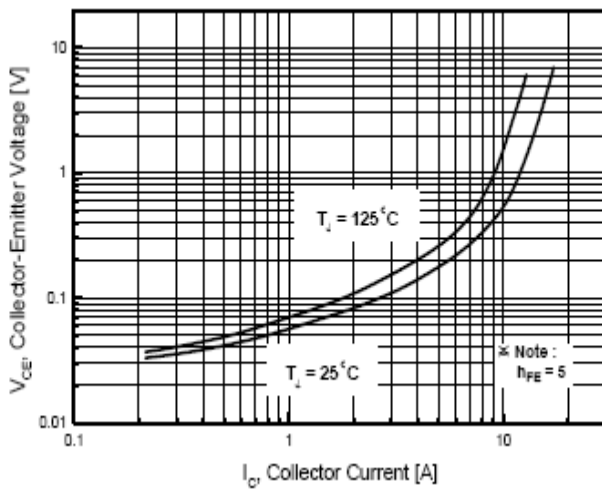
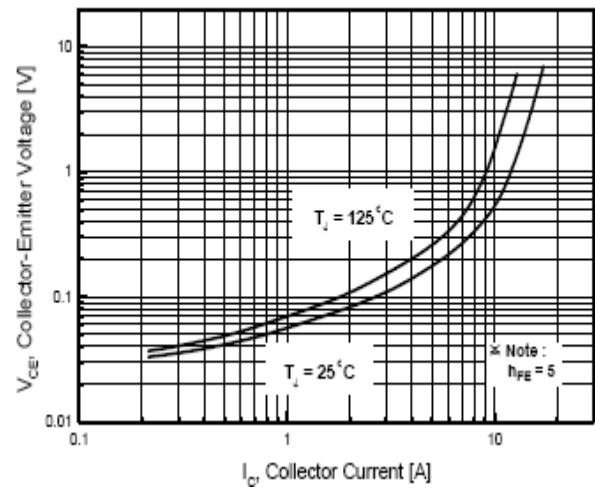
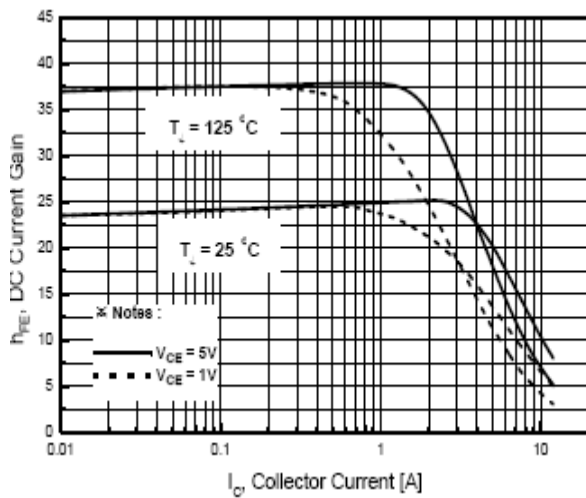
Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case	1.25	$^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	40	$^{\circ}C/W$

Electrical Characteristics (T_c=25°C unless otherwise noted)

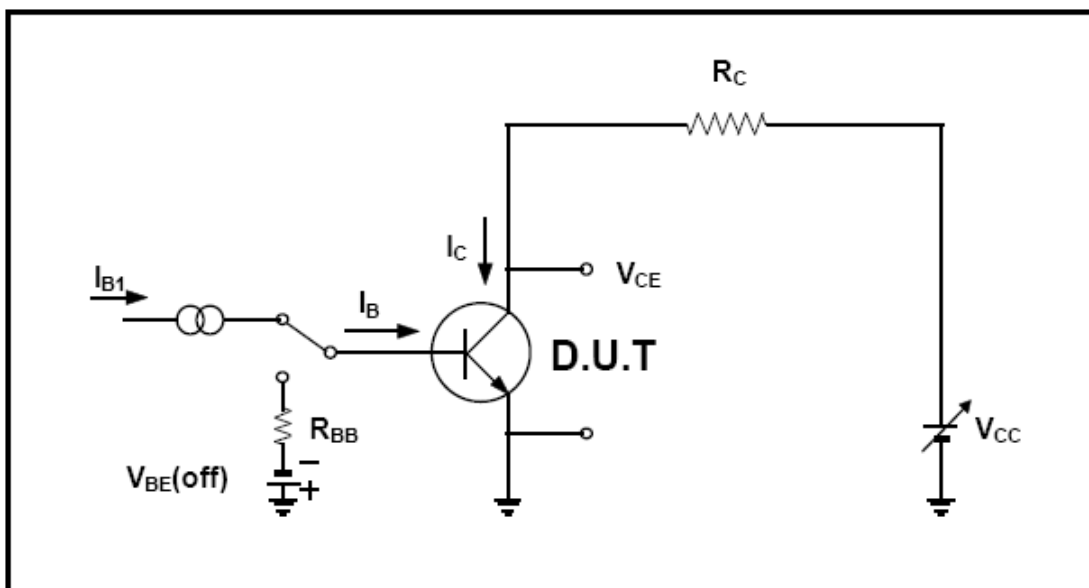
Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
V _{CEO(sus)}	Collector-Emitter Breakdown Voltage	I _c =10mA, I _b =0	400	-	-	V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _c =5.0A, I _b =1.0A I _c =8.0A, I _b =1.6A I _c =12A, I _b =3.0A	-	-	1.0 1.5 3.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _c =5.0A, I _b =1.0A I _c =8.0A, I _b =1.6A	-	-	1.2 1.6	V
I _{CBO}	Collector-Base Cutoff Current (V _{be} =-1.5V)	V _{cb} =600V	-	-	100	nA
h _{FE}	DC Current Gain	V _{ce} =5V, I _c =5.0A V _{ce} =5V, I _c =8.0A	8 6	- -	40 -	
t _s t _f	Resistive Load Storage Time Fall Time	V _{CC} =125V, I _c =6.0A I _{B1} =1.6A, I _{B2} =-1.6A T _p =25μs	-	1.5 0.17	3.0 0.4	μs
t _s t _f	Inductive Load Storage Time Fall Time	V _{CC} =15V, I _c =5A I _{B1} =1.6A, V _{be(off)} =5V L=0.35mH, V _{clamp} =300V	- -	0.8 0.04	2.0 0.1	μs
t _s t _f	Inductive Load Storage Time Fall Time	V _{CC} =15V, I _c =1A I _{B1} =0.4A, V _{be(off)} =5V L=0.2mH, V _{clamp} =300V T _c =100°C	- -	0.8 0.05	2.5 0.15	μs

Note:

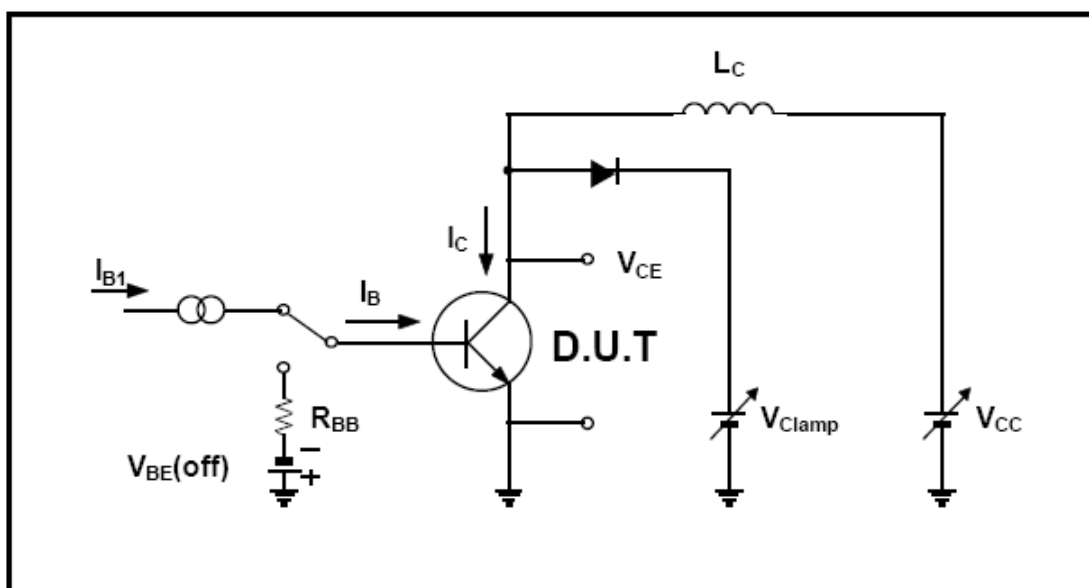
Pulse Test : Pulse width 300, Duty cycle 2%



Resistive Load Switching Test Circuit



Inductive Load Switching & RBSOA Test Circuit



TO-220 Package Dimension

