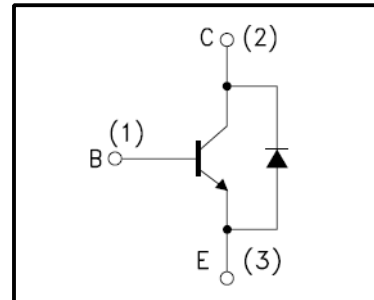


*High Voltage Fast-Switching NPN Power Transistor*

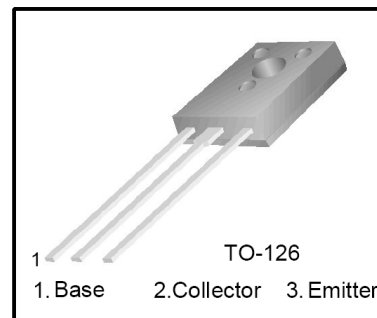
**Features**

- ◆ Very High Switching Speed
- ◆ High Voltage Capability
- ◆ High Voltage Capability
- ◆ Wide Soa
- ◆ Built-in freewheeling 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(Tc = 25°C)**

Symbol	Parameter	Test Conditions	Value	Units
V <sub>CES</sub>	Collector-Emitter Voltage	V <sub>BE</sub> = 0	400	V
V <sub>CEO</sub>	Collector-Emitter Voltage	I <sub>B</sub> = 0	200	V
V <sub>EBO</sub>	Emitter-Base Voltage	I <sub>C</sub> = 0	9.0	V
I <sub>C</sub>	Collector Current		1.2	A
I <sub>CP</sub>	Collector pulse Current		3.0	A
P <sub>C</sub>	Total Dissipation at Tc = 25°C		10	W
T <sub>J</sub>	Operation Junction Temperature		150	°C
T <sub>STG</sub>	Storage Temperature		- 40 ~ 150	°C

**Thermal Characteristics**

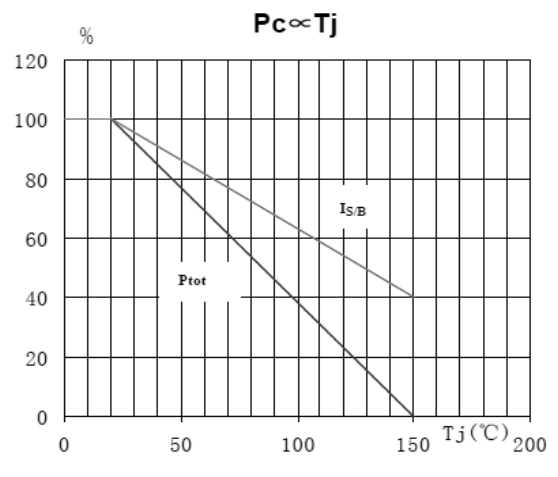
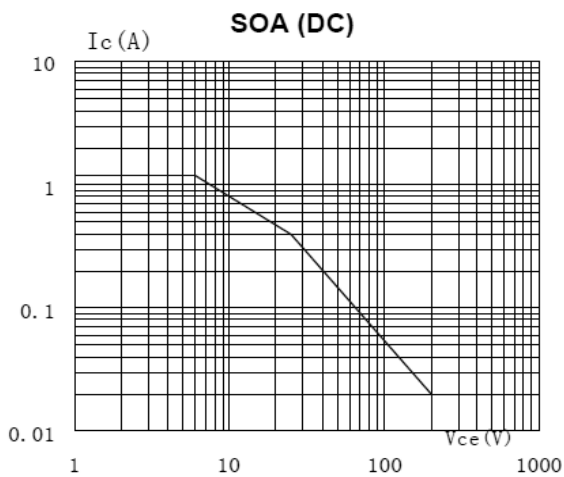
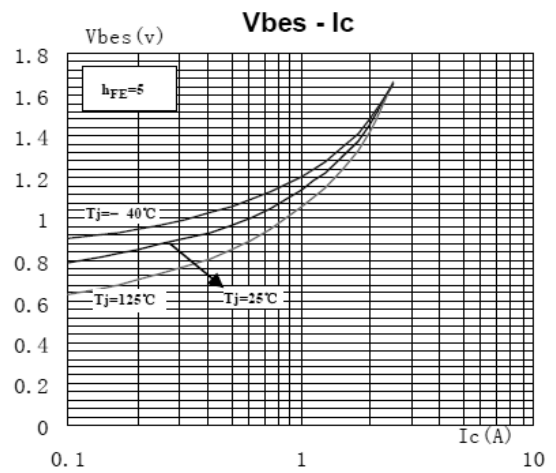
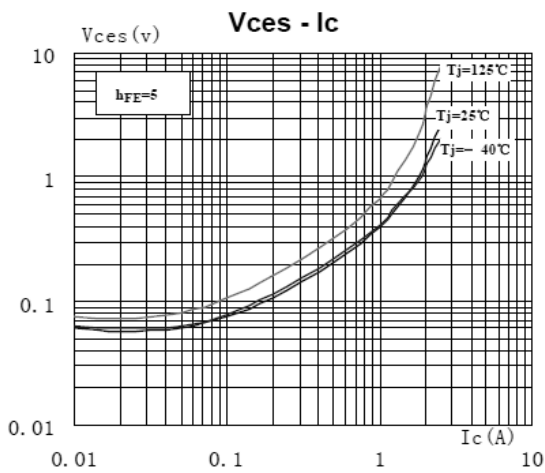
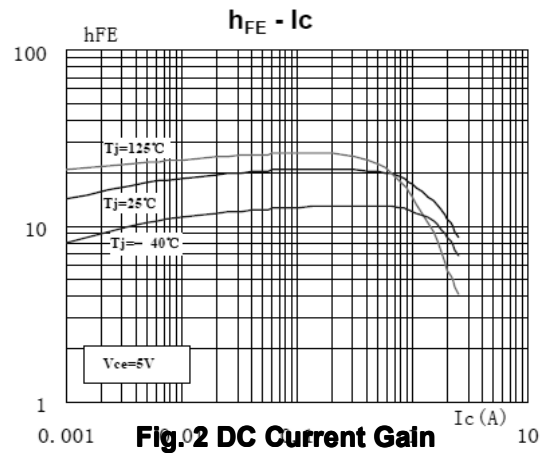
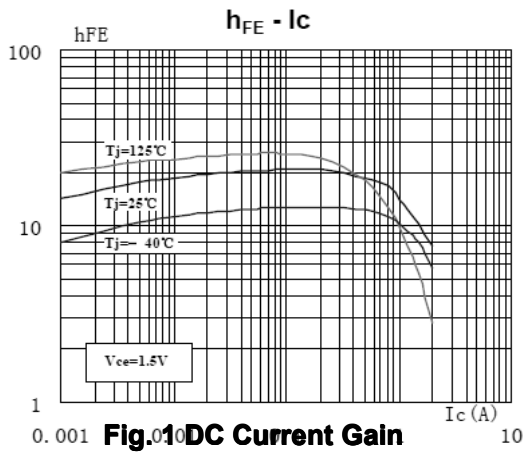
Symbol	Parameter	Value	Units
R <sub>θJc</sub>	Thermal Resistance Junction to Case	3.12	°C/W
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient	89	°C/W

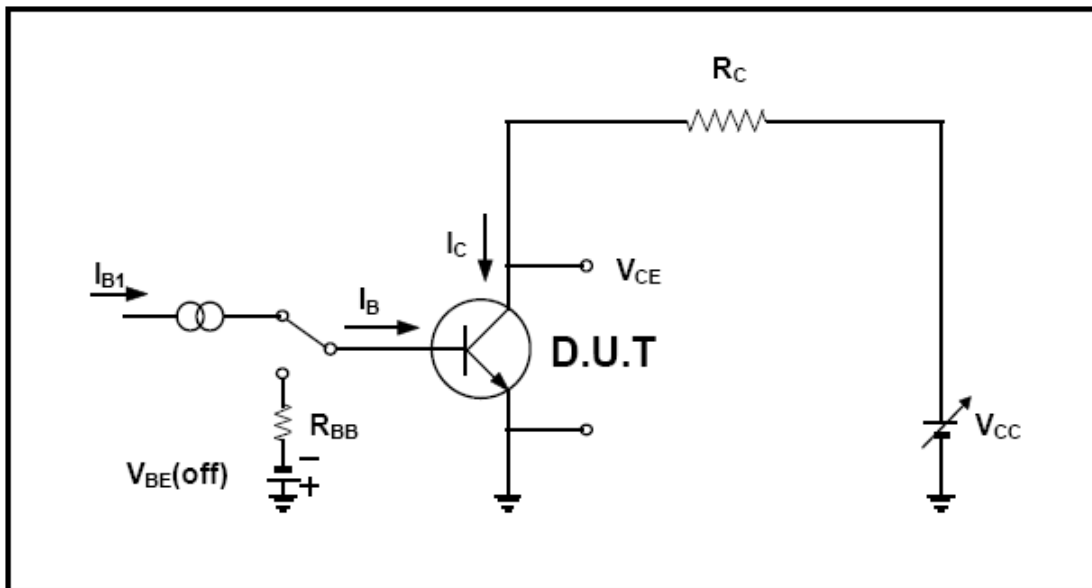
**Electrical Characteristics** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_c=0.5\text{mA}, I_e=0$	400			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_c=10\text{mA}, I_b=0$	200	-	-	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_c=100\text{mA}, I_b=20\text{mA}$	-	-	0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_c=100\text{mA}, I_b=20\text{mA}$	-	-	1.0	V
$I_{CBO}$	Collector-Base Cutoff Current	$V_{cb}=350\text{V}, I_e=0\text{mA}$	-	-	100	$\mu\text{A}$
$I_{CEO}$	Collector-Emitter Cutoff Current	$V_{ce}=200\text{V}, I_b=0\text{mA}$	-	-	200	$\mu\text{A}$
$I_{EBO}$	Emitter- Base Cutoff Current	$V_{eb}=9\text{V}, I_c=0\text{mA}$	-	-	20	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{ce}=5\text{V}, I_c=200\text{mA}$ $V_{ce}=5\text{V}, I_c=1\text{mA}$	10 8	- -	40 -	
$t_s$	Storage Time	$V_{CC}=250\text{V}$	2	-	4	$\mu\text{s}$
$t_f$	Fall Time	$I_c=5 I_B$ $I_{B1}=- I_{B2}=0.04\text{A}$	-	-	0.8	
VFSD						

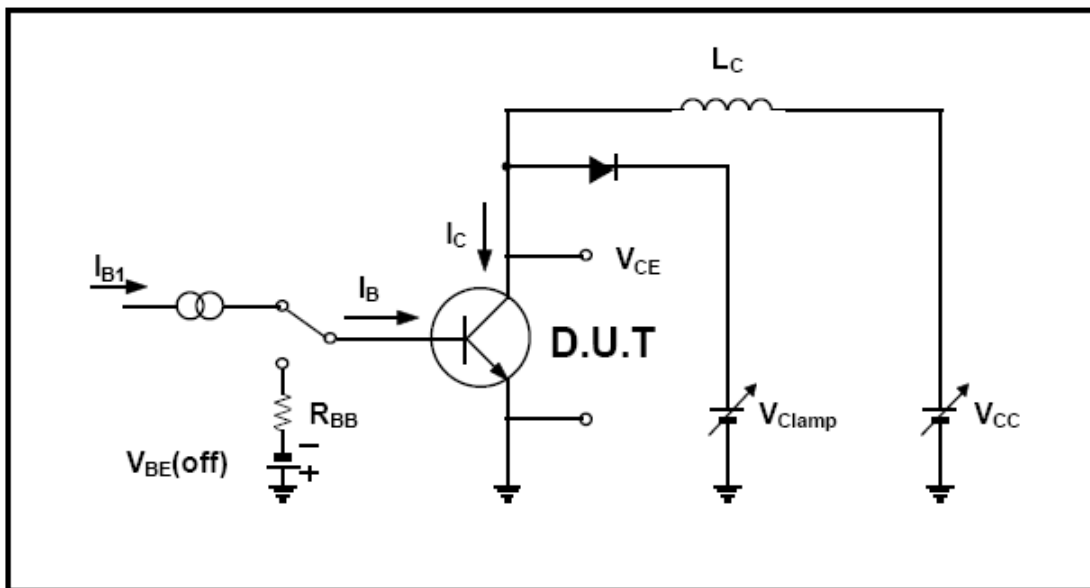
**Note:**

Pulse Test : Pulse width 300, Duty cycle 2%





**Fig.7 Resistive Load Switching Test Circuit**



**Fig.8 Inductive Load Switching & RBSOA Test Circuit**

## TO-126 Package Dimension

