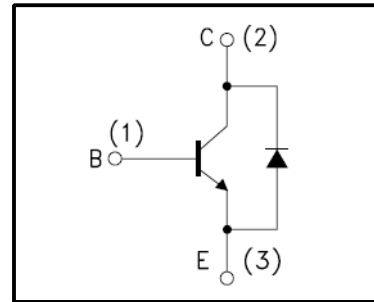


High Voltage Fast-Switching NPN Power Transistor

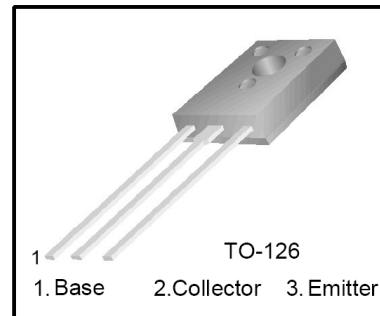
Features

- ◆ 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 _{CES}	Collector-Emitter Voltage	V _{BE} = 0	400	V
V _{CEO}	Collector-Emitter Voltage	I _B = 0	200	V
V _{EBO}	Emitter-Base Voltage	I _C = 0	9.0	V
I _C	Collector Current		1.2	A
I _{CP}	Collector pulse Current		3.0	A
P _C	Total Dissipation at Tc = 25°C		10	W
T _J	Operation Junction Temperature		150	°C
T _{STG}	Storage Temperature		- 40 ~ 150	°C

Thermal Characteristics

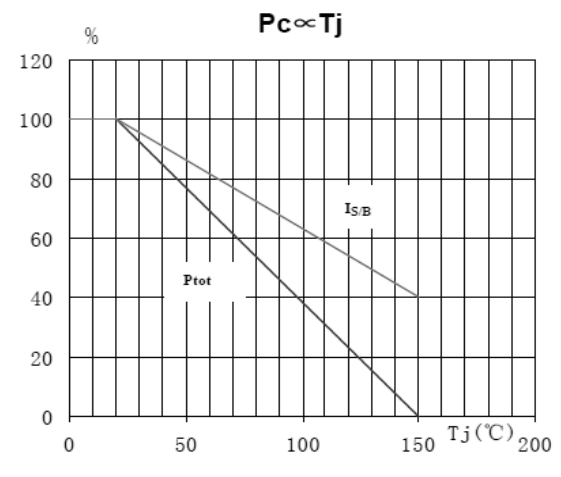
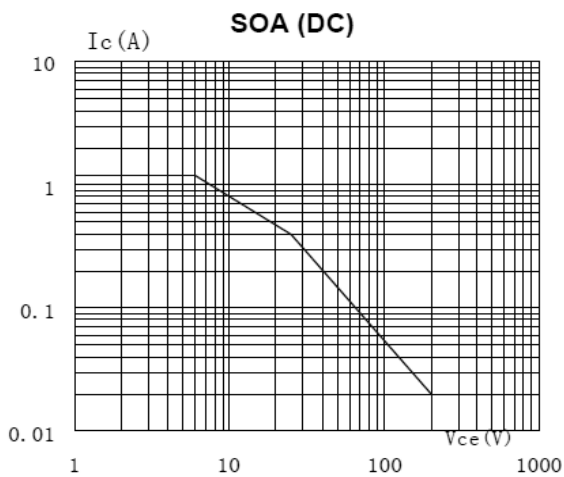
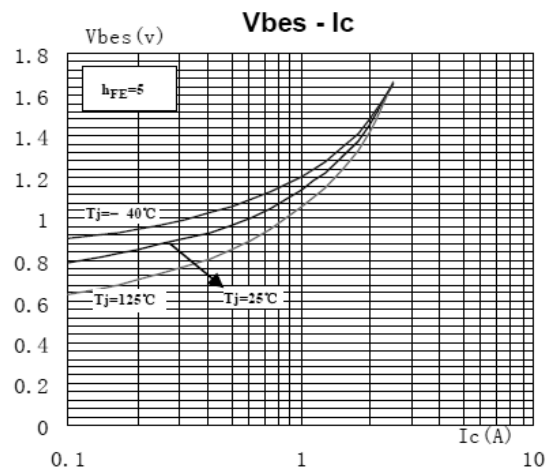
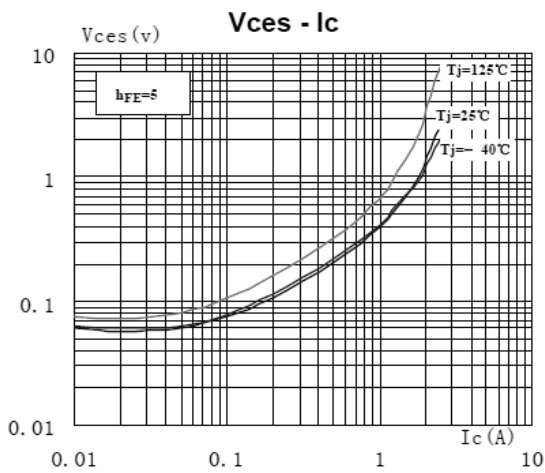
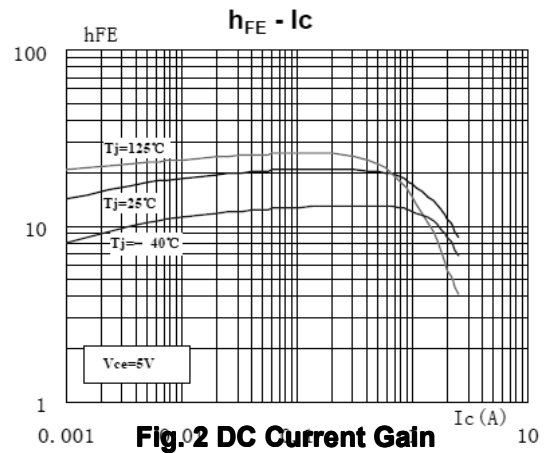
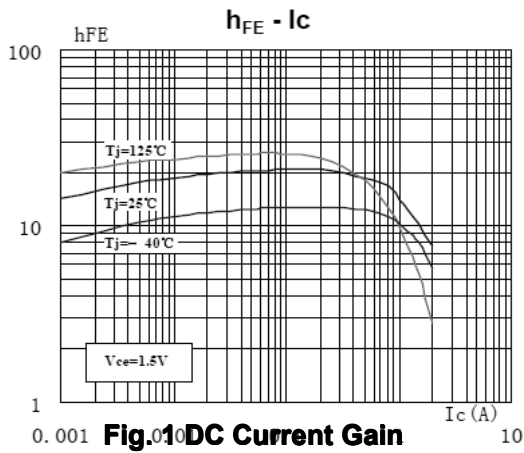
Symbol	Parameter	Value	Units
R _{θJc}	Thermal Resistance Junction to Case	3.12	°C/W
R _{θJA}	Thermal Resistance Junction to Ambient	89	°C/W

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	μA
I_{CEO}	Collector-Emitter Cutoff Current	$V_{ce}=200\text{V}, I_b=0\text{mA}$	-	-	200	μA
I_{EBO}	Emitter- Base Cutoff Current	$V_{eb}=9\text{V}, I_c=0\text{mA}$	-	-	20	μA
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	μs
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%



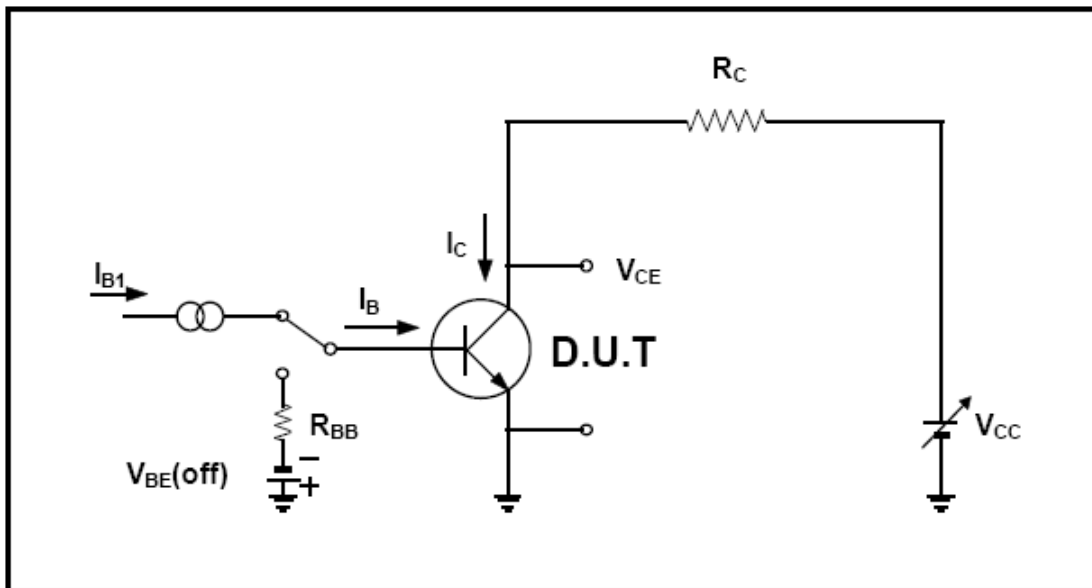


Fig.7 Resistive Load Switching Test Circuit

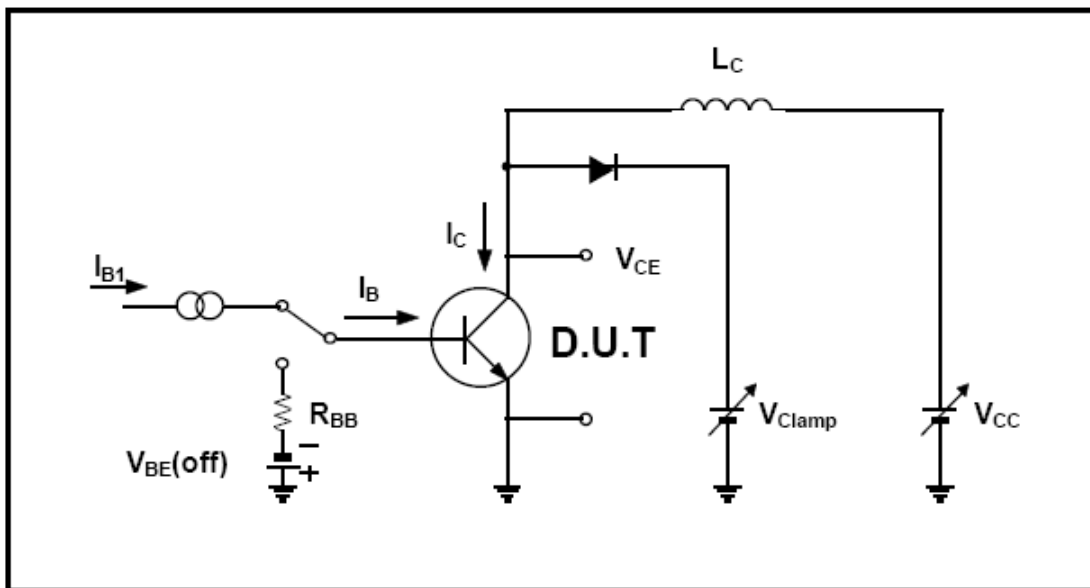


Fig.8 Inductive Load Switching & RBSOA Test Circuit

TO-126 Package Dimension

