

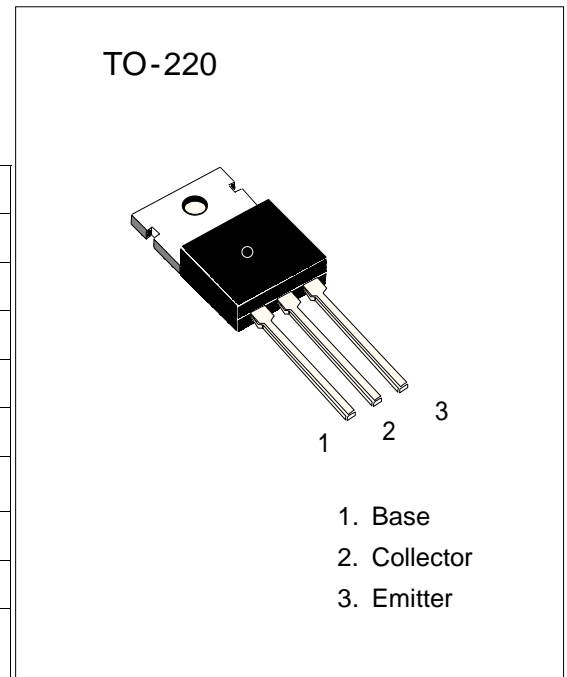
HIGH VOLTAGE SWITCH MODE APPLICATION

High Speed Switching

Suitable for Switching Regulator and Motor Control

ABSOLUTE MAXIMUM RATINGS (Ta=25)

| Characteristic | Symbol | Value | Unit |
|-----------------------------|--------|----------|------|
| Collector-Base Voltage | VCBO | 700 | V |
| Collector-Emitter Voltage | VCEO | 400 | V |
| Emitter-Base voltage | VEBO | 9 | V |
| Collector Current | IC | 8 | A |
| Collector Current* | IC | 16 | A |
| Base Current | IB | 4 | A |
| Collector Power Dissipation | PC | 80 | W |
| Junction Temperature | Tj | 150 | |
| Storage Temperature | Tstg | -65~+150 | |



* Pulse Test : Pulse Width=100ms ,Duty Cycle 50%

ELECTRICAL CHARACTERISTICS (Ta=25 , unless otherwise specified)

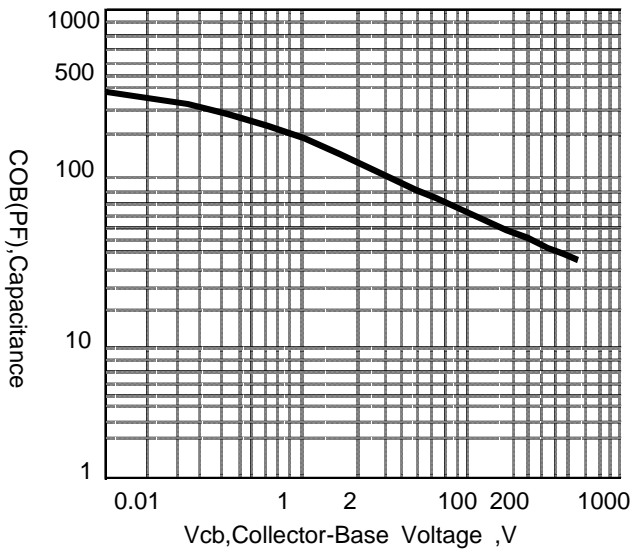
| Characteristic | Symbol | Test Condition | Min | TYP | MAX | Unit |
|---------------------------------------|-------------------|---|--------|-----|-------------|------|
| *Collector-emitter Sustaining voltage | BVCEO(sus) | IC=10mA ,IB=0 | 400 | | | V |
| Emitter cut-off current | IEBO | VEB= 9V ,IC=0 | | | 1 | mA |
| *DC current gain | #hFE(1) hFE(2) | VCE=5V, IC=2A, VCE=5V, IC=5A | 8 5 | | 60 30 | |
| *Collector-emitter saturation voltage | VCE(sat) | IC=2A, IB=400mA IC=5A, IB=1A IC=8A, IB=2A | | | 1 2 3 | V |
| *Base-emitter saturation voltage | VBE(sat) | IC=2A, IB=400mA IC=5A, IB=1A | | | 1.2 1.6 | V |
| Base Emitter On Voltage | VBE(ON) | VCE=4V, IC=6A | | | 2.0 | V |
| Output Capacitance | Cob | VCB=-10V ,IE=0,f=1MHZ | | 110 | | pF |
| Current Gain Bandwidth Product | fT | VCE=10V, IC=500mA | 4.0 | | | MHZ |
| Turn On Time | tON | Vcc=125V, IC=5A IB1=IB2=0.4A | | | 1.6 | μ S |
| Storage Time | tS | | | | 3 | μ S |
| Fall Time | tF | | | | 0.7 | μ S |

* Pulse Test : Pulse Width=300μs ,Duty Cycle 2%

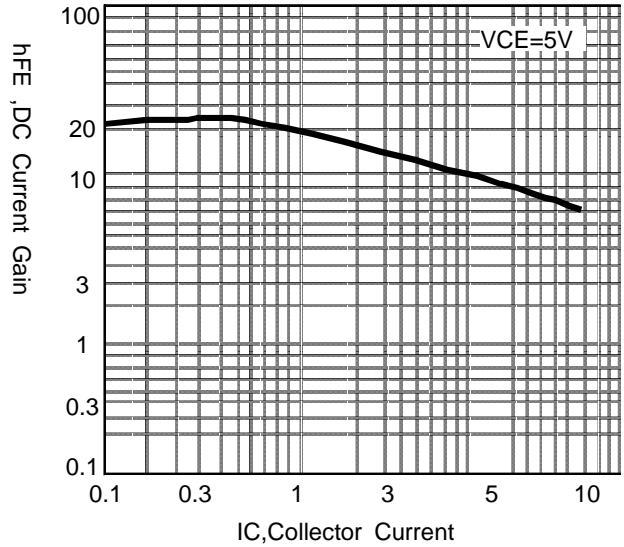
hFE(1) Classification

| Classification | H1 | H2 | H3 | H4 | N |
|----------------|-------|-------|-------|-------|------------|
| hFE | 15~20 | 20~25 | 25~30 | 30~35 | 8~15,35~40 |

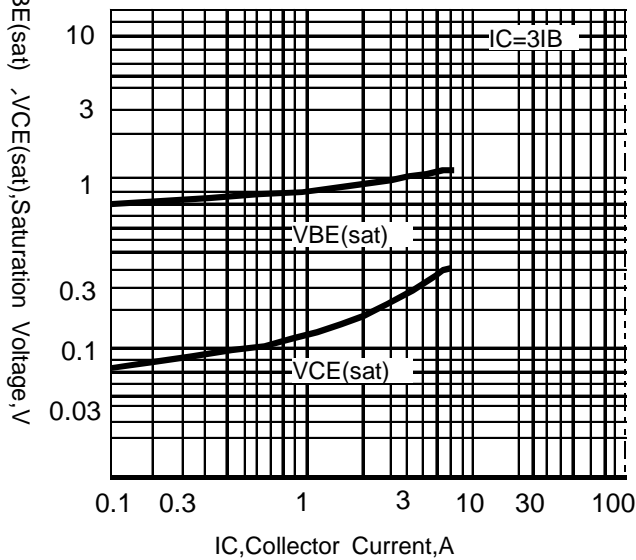
Collector Output Capacitance



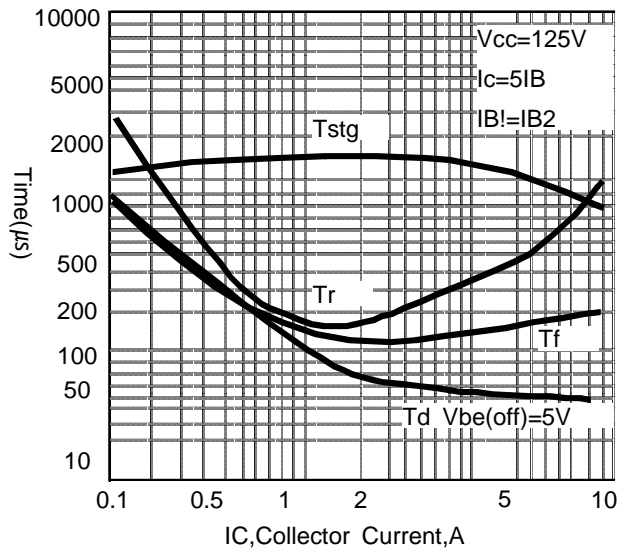
DC Current Gain



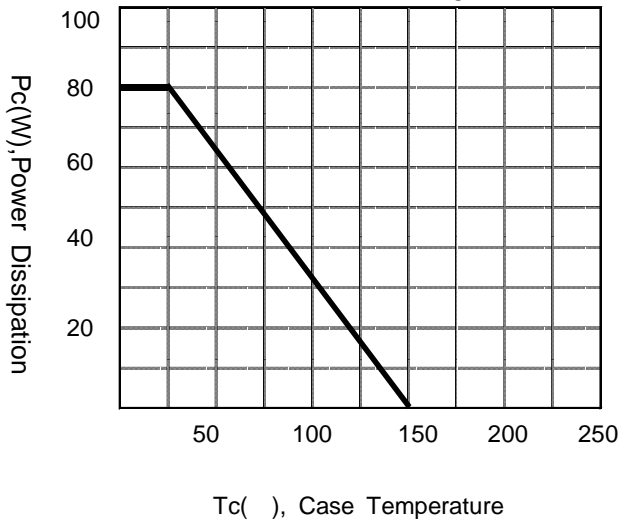
Base Emitter Saturation Voltage
Collector Emitter Saturation Voltage



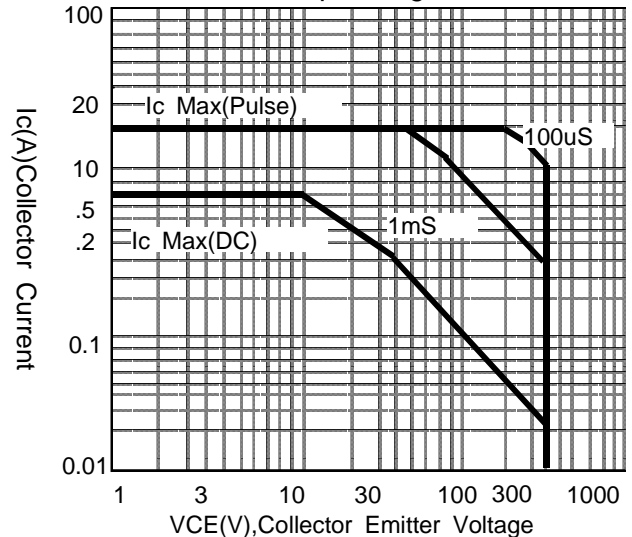
Switching Time



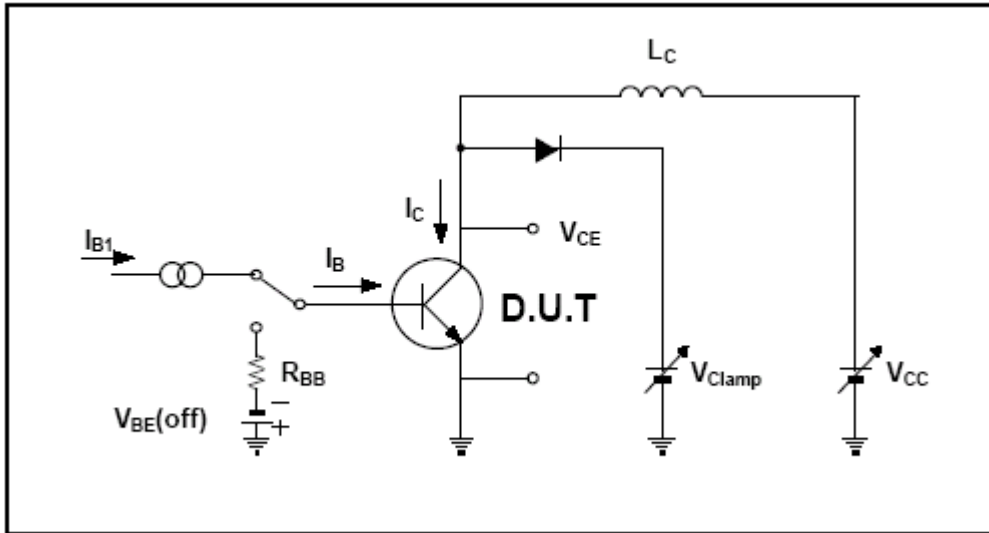
Power Derating



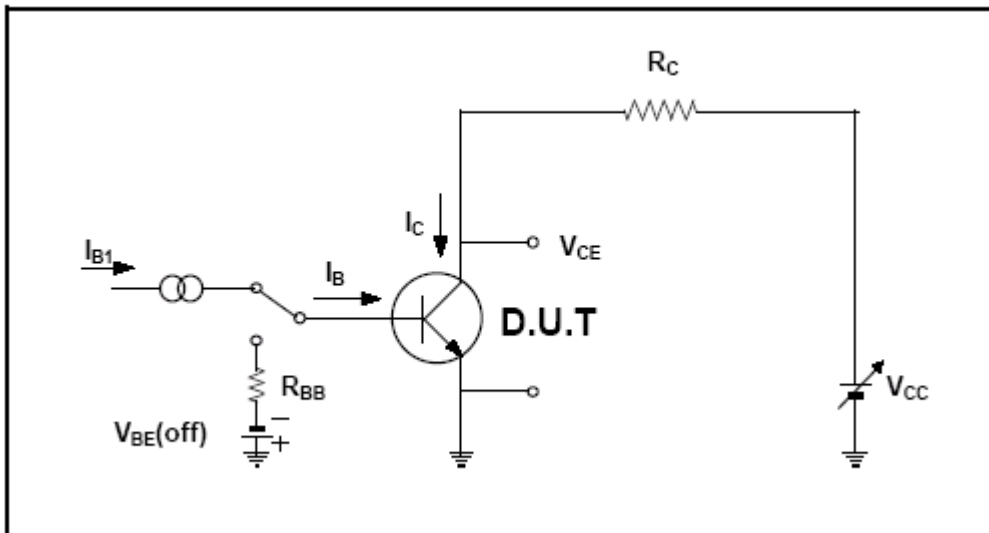
Safe Operating Area



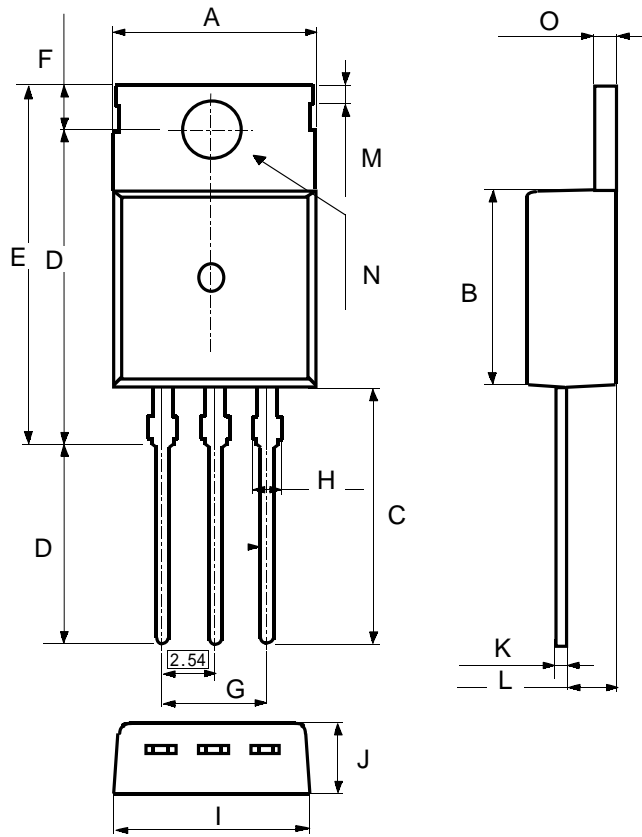
Inductive Load Switching & RBSOA Test Circuit



Resistive Load Switching Test Circuit



[TO-220 Package Outline]



| Package Dimension(unit:mm) | | | |
|----------------------------|-------|---------|-------|
| Symbol | Min | Typ | Max |
| A | - | [9.90] | - |
| B | 9.00 | 9.20 | 9.40 |
| C | 12.88 | 13.08 | 13.28 |
| D | 9.78 | 10.08 | 10.38 |
| E | - | - | 18.95 |
| F | 2.70 | 2.80 | 2.90 |
| G | 4.88 | 5.08 | 5.28 |
| H | 1.42 | 1.52 | 1.62 |
| I | 9.80 | 10.00 | 10.20 |
| J | 4.30 | 4.50 | 4.70 |
| K | 0.45 | 0.50 | 0.60 |
| L | 2.30 | 2.40 | 2.50 |
| M | 1.20 | 1.30 | 1.40 |
| N | - | [3.60] | - |
| O | 1.25 | 1.30 | 1.40 |