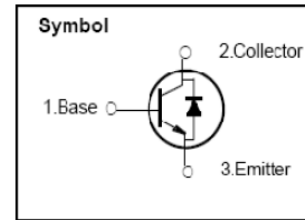


High Voltage Fast-Switching NPN Power Transistor

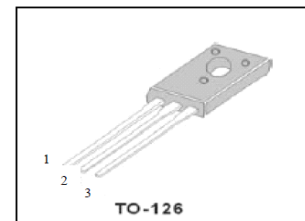
Features

- ◆ Very High Switching Speed
- ◆ High Voltage Capability
- ◆ Wide Reverse Bias 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

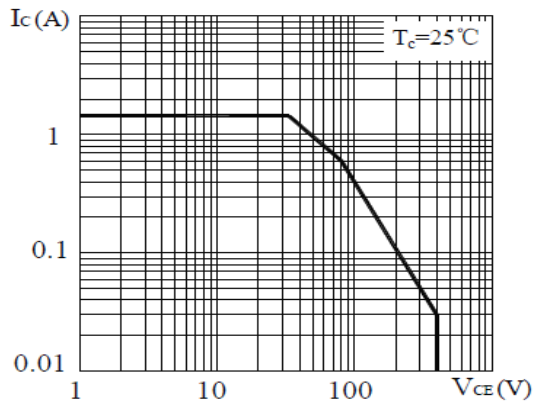
| Symbol | Parameter | Test Conditions | Value | Units |
|------------------|--|------------------------|------------|-------|
| V _{CES} | Collector-Emitter Voltage | V _{BE} = 0 | 700 | V |
| V _{CEO} | Collector-Emitter Voltage | I _C = 1mA | 400 | V |
| V _{EBO} | Emitter-Base Voltage | I _E = 0.1mA | 9 | V |
| I _C | Collector Current | | 1.5 | A |
| I _{CP} | Collector pulse Current | | 3.0 | A |
| I _B | Base Current | | 0.75 | A |
| I _{BM} | Base Peak Current | t _P = 5ms | 1.5 | A |
| P _C | Total Dissipation at T _c = 25°C | | 50 | W |
| | Total Dissipation at T _a = 25°C | | 1.25 | |
| T _J | Operation Junction emperature | | - 40 ~ 150 | °C |
| T _{STG} | Storage Temperature | | -55 ~ 150 | °C |

Electrical Characteristics (Tc = 25° C)

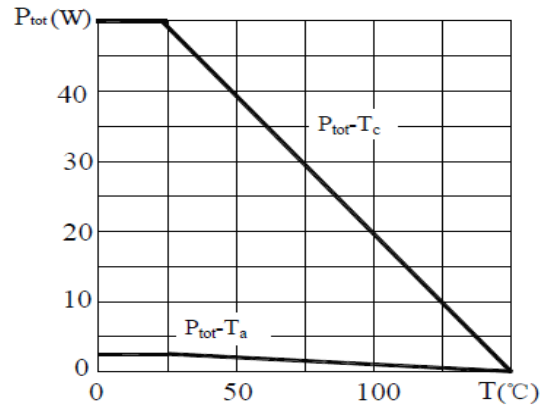
| Symbol | Parameter | Test Conditions | Value | | | Units |
|----------------------|--------------------------------------|--|-------|-----|-----|-------|
| | | | Min | Typ | Max | |
| BV _{CBO} | Collector-Base Breakdown Voltage | I _c =0.5mA, I _e =0 | 600 | | | V |
| BV _{CEO} | Collector-Base Breakdown Voltage | I _c =10mA, I _b =0 | 400 | - | - | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _c =200mA, I _b =100mA | - | - | 1.6 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _c =200mA, I _b =100mA | - | - | 1.2 | V |
| I _{CBO} | Collector-Base Cutoff Current | V _{cb} =600V, I _e =0mA | - | - | 0.1 | mA |
| I _{CEO} | Collector-Emitter Cutoff Current | V _{ce} =400V, I _b =0mA | - | - | 0.1 | mA |
| I _{EBO} | Emitter- Base Cutoff Current | V _{eb} =9V, I _c =0mA | - | - | 0.1 | mA |
| h _{FE} | DC Current Gain | V _{ce} =5V, I _c =5mA V _{ce} =5V, I _c =0.2mA | 0.75 | 0.9 | | |
| t _s | Storage Time | I _C =0.1A | 3 | - | 5 | μs |
| t _f | Fall Time | | - | - | 1 | |

Note:

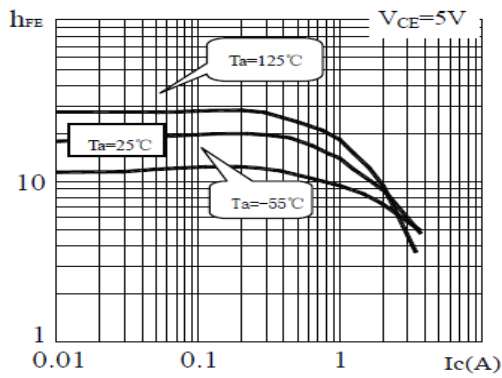
Pulse Test : Pulse width 300, Duty cycle 2%



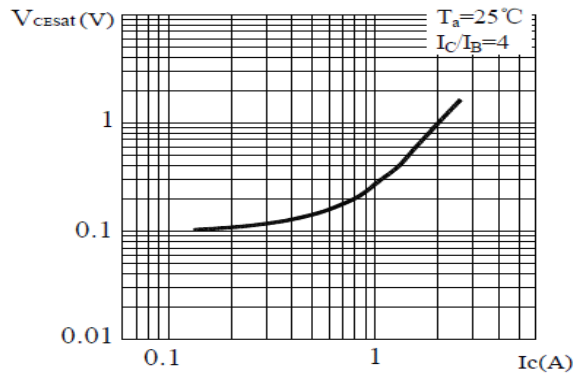
IC[A],COLLECTOR CURRENT
Fig.1DC Current Gain



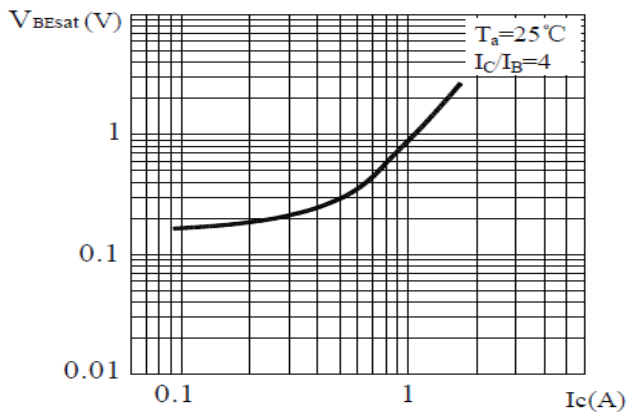
IC[A].COLLECTOR CURRENT
Fig.2 Saturation Voltage



$h_{FE} - I_c$



$V_{CESat} - I_c$



$V_{BEsat} - I_c$

TO-126 Package Dimension

| Dim | mm | | | Inch | | |
|-----|------|-----|------|-------|-------|-------|
| | Min | Typ | Max | Min | Typ | Max |
| A | 7.5 | | 7.9 | 0.295 | | 0.311 |
| B | 10.8 | | 11.2 | 0.425 | | 0.441 |
| C | 14.2 | | 14.7 | 0.559 | | 0.579 |
| D | 2.7 | | 2.9 | 0.106 | | 0.114 |
| E | | 3.8 | | | 0.150 | |
| F | | 2.5 | | 0.047 | 0.098 | |
| G | 1.2 | | 1.5 | | | 0.059 |
| H | | 2.3 | | | 0.091 | |
| I | | 4.6 | | | 0.181 | |
| J | 0.48 | | 0.62 | 0.019 | | 0.024 |
| K | 0.7 | | 0.86 | 0.028 | | 0.034 |
| L | | 1.4 | | | 0.055 | |
| Φ | | 3.2 | | | 0.126 | |

