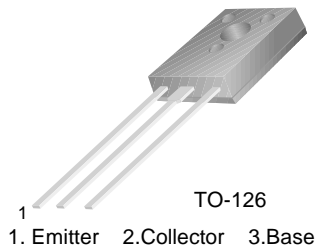


FJE3303

High Voltage Fast-Switching NPN Power Transistor

- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Regulator



Absolute Maximum Ratings T_C = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|------------------|---|-----------|-------|
| V _{CBO} | Collector-Base Voltage | 700 | V |
| V _{CEO} | Collector-Emitter Voltage | 400 | V |
| V _{EBO} | Emitter-Base Voltage | 9 | V |
| I _C | Collector Current (DC) | 1.5 | A |
| I _{CP} | Collector Current (Pulse) * | 3 | A |
| I _B | Base Current (DC) | 0.75 | A |
| I _{BP} | Base Current (Pulse) * | 1.5 | A |
| P _C | Collector Dissipation (T _C = 25°C) | 20 | W |
| T _J | Junction Temperature | 150 | °C |
| T _{STG} | Storage Temperature | -65 ~ 150 | °C |

* Pulse Test: Pulse Width = 5ms, Duty Cycle ≤ 10%

Electrical Characteristics T_C = 25°C unless otherwise noted

| Symbol | Parameter | Conditions | Min. | Typ. | Max | Units |
|--------------------------------------|--------------------------------------|---|--------|------|-------------------|-------------|
| BV _{CBO} | Collector-Base Breakdwon Voltage | I _C = 500μA, I _E = 0 | 700 | | | V |
| BV _{CEO} | Collector-Emitter Breakdown Voltage | I _C = 5mA, I _B = 0 | 400 | | | V |
| BV _{EBO} | Emitter-Base Breakdown Voltage | I _E = 500μA, I _C = 0 | 9 | | | V |
| I _{CBO} | Collector Cut-off Current | V _{CB} = 700V, I _E = 0 | | | 10 | μA |
| I _{EBO} | Emitter Cut-off Current | V _{EB} = 9V, I _C = 0 | | | 10 | μA |
| h _{FE1} h _{FE2} | DC Current Gain * | V _{CE} = 2V, I _C = 0.5A V _{CE} = 2V, I _C = 1.0A | 8 5 | | 21 | |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 0.5A, I _B = 0.1A I _C = 1.0A, I _B = 0.25A I _C = 1.5A, I _B = 0.5A | | | 0.5 1.0 3.0 | V V V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 0.5A, I _B = 0.1A I _C = 1.0A, I _B = 0.25A | | | 1.0 1.2 | V V |
| f _T | Current Gain Bandwidth Product | V _{CE} = 10V, I _C = 0.1A | 4 | | | MHz |
| C _{ob} | Output Capacitance | V _{CB} = 10V, f = 0.1MHz | | 21 | | pF |
| t _{ON} | Turn On Time | V _{CC} = 125V, I _C = 1A I _{B1} = 0.2A, I _{B2} = -0.2A R _L = 125Ω | | | 1.1 | μs |
| t _{STG} | Storage Time | | | | 4.0 | μs |
| t _F | Fall Time | | | | 0.7 | μs |

* Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 2%

h_{FE} Classification

| Classification | H1 | H2 |
|------------------|--------|---------|
| h _{FE1} | 8 ~ 16 | 14 ~ 21 |

Typical Performance Characteristics

Figure 1. Static Characteristic

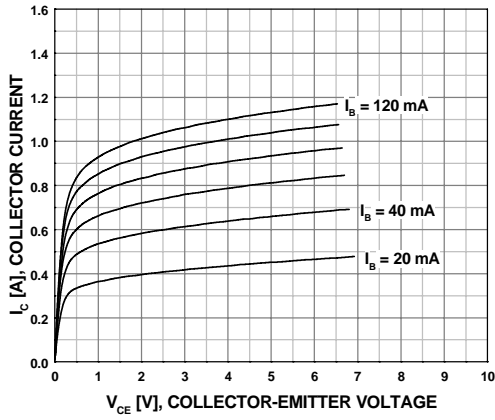


Figure 2. DC Current Gain

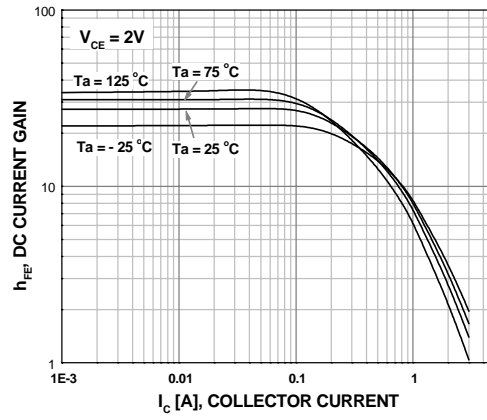


Figure 3. Collector-Emitter Saturation Voltage

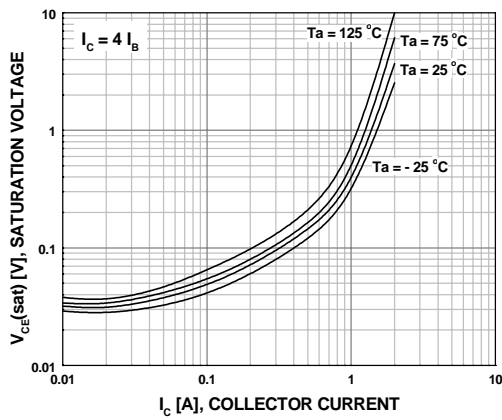


Figure 4. Base-Emitter Saturation Voltage

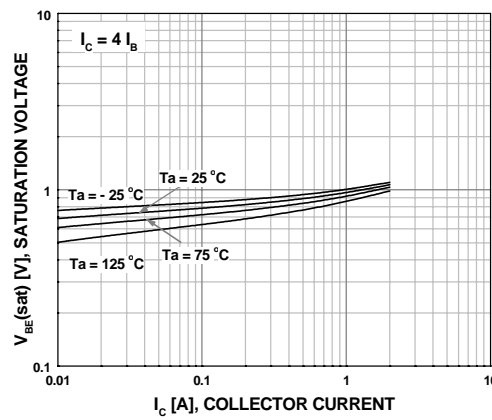


Figure 5. Resistive Load Switching Time

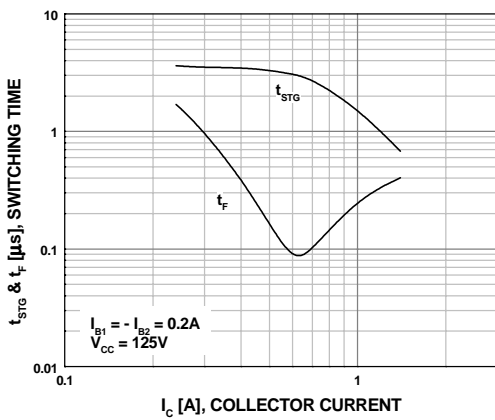
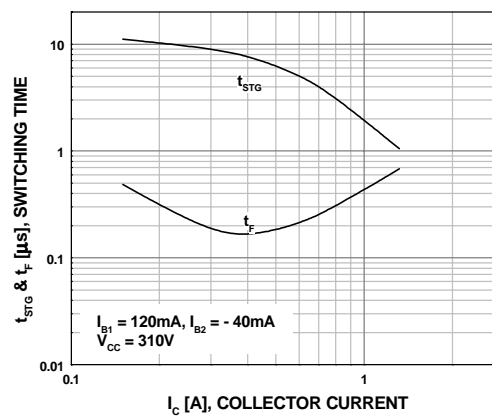


Figure 6. Resistive Load Switching Time



Typical Performance Characteristics (Continued)

Figure 7. Forward Biased Safe Operating Area

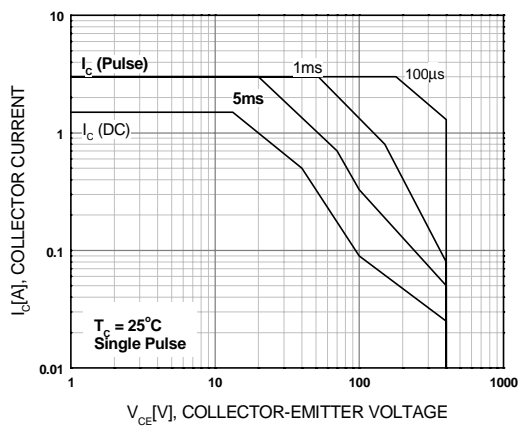


Figure 8. Reverse Biased Safe Operating Area

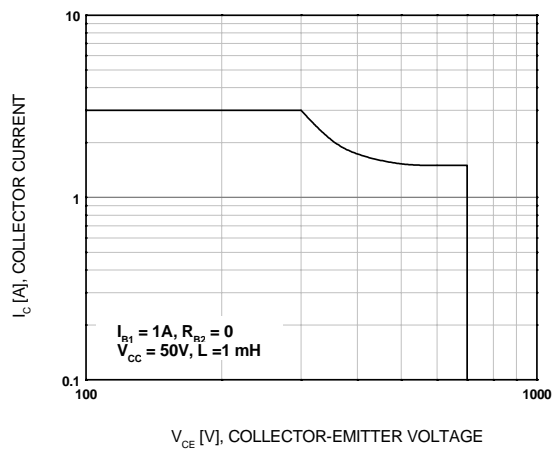
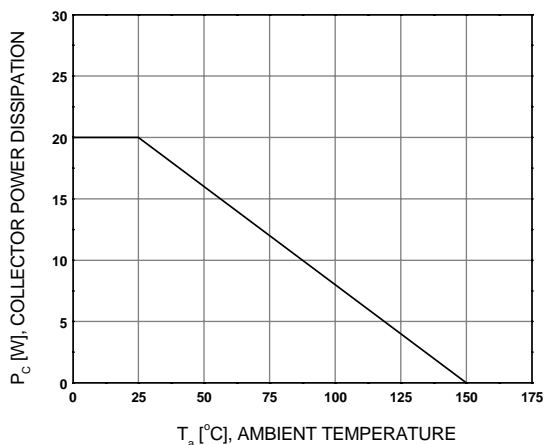
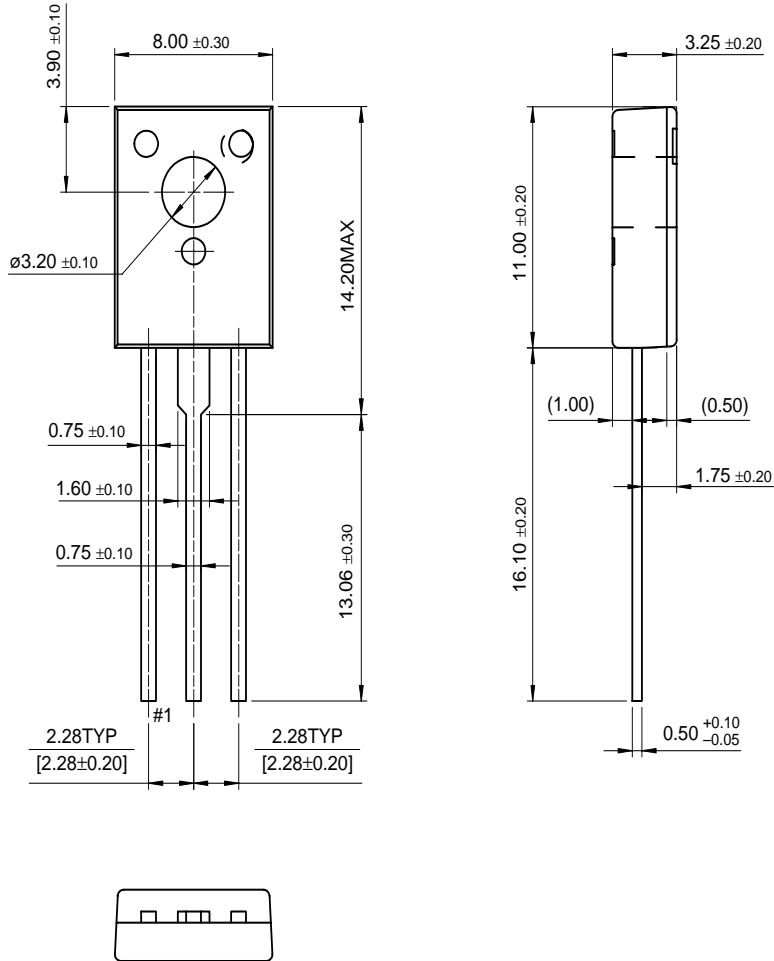


Figure 9. Power Derating



Mechanical Dimensions

TO-126



Dimensions in Millimeters

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