



D4203D

Preliminary

NPN SILICON TRANSISTOR

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

DESCRIPTION

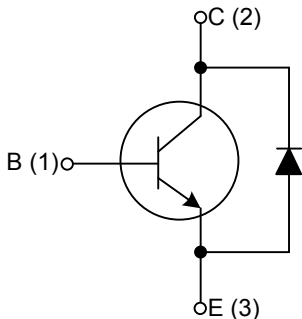
The UTC **D4203D** is a high voltage fast-switching NPN power transistor. It is characterized by high breakdown voltage, high current capability, high switching speed and high reliability.

The UTC **D4203D** is intended to be used in energy-saving lights, electronic ballasts, high frequency switching power supplies, high frequency power transforms or common power amplifier, etc.

FEATURES

- * High Breakdown Voltage
- * High Current Capability
- * High Switching Speed
- * High Reliability
- * High Resistance to Shock
- * Built-In Diode

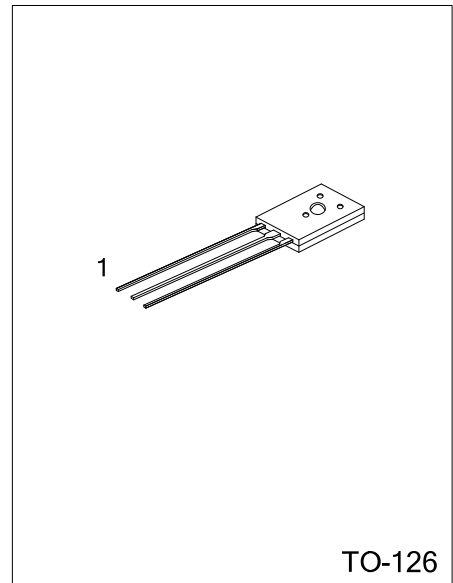
INTERNAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|---------|
| Lead Free | Halogen-Free | TO-126 | 1 | 2 | 3 | Bulk |
| D4203DL-T60-K | D4203DG-T60-K | | B | C | E | |

| | |
|---|---|
| <p>D4203DG-T60-K</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Halogen Free | <ul style="list-style-type: none"> (1) K: Bulk (2) T60: TO-126 (3) G: Halogen Free |
|---|---|



■ ABSOLUTE MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------------------------|-----------|------------|--------------------|
| Collector- Base Voltage | V_{CBO} | 700 | V |
| Collector-Emitter Voltage ($I_B=0$) | V_{CEO} | 400 | V |
| Emitter-Base Voltage | V_{EBO} | 9 | V |
| Collector Current (DC) | I_C | 2.0 | A |
| Collector Current (pulse) | I_{CP} | 4.0 | A |
| Total Power Dissipation | P_C | 20 | W |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Pulse Test: Pulse Width = 5.0ms, Duty Cycle < 10%.

■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|------------------|---------------|---------|-----------------------------|
| Junction to Case | θ_{JC} | 6.25 | $^{\circ}\text{C}/\text{W}$ |

■ ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------|--|-----|-----|-----|---------------|
| Collector-Emitter Sustaining Voltage | $V_{CEO(SUS)}$ | $I_C=10\text{mA}, I_B=0$ | 400 | | | V |
| Collector -Base Breakdown Voltage | BV_{CBO} | $I_C=1\text{mA}, I_E=0$ | 700 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=1\text{mA}, I_C=0$ | 9 | | | V |
| Collect - Base Cut-off Current | I_{CBO} | $V_{CB}=680\text{V}, I_E=0$ | | | 100 | μA |
| Collect - Emitter Cut-off Current | I_{CEO} | $V_{CE}=400\text{V}, I_B=0$ | | | 50 | μA |
| Emitter - Base Cut-off Current | I_{EBO} | $V_{EB}=7\text{V}, I_C=0$ | | | 10 | μA |
| DC Current Gain | h_{FE1} | $V_{CE}=5\text{V}, I_C=5\text{mA}$ | 6 | | 40 | |
| | h_{FE2} | $V_{CE}=10\text{V}, I_C=200\text{mA}$ | 8 | | 40 | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)1}$ | $I_C=0.5\text{A}, I_B=0.1\text{A}$ | | | 0.5 | V |
| | $V_{CE(SAT)2}$ | $I_C=1.5\text{A}, I_B=0.5\text{A}$ | | | 2 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C=1\text{A}, I_B=0.25\text{A}$ | | | 1.8 | V |
| Resistive Load | Fall Time | $V_{CC}=24\text{V}, I_C=2\text{A}, I_{B1}=-I_{B2}=0.4\text{A}$ | | | 0.7 | μs |
| | Storage Time | | | | 4 | μs |
| Current Gain Bandwidth Product | f_T | $V_{CE}=10\text{V}, I_C=0.5\text{A}$ | 4 | | | MHz |

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