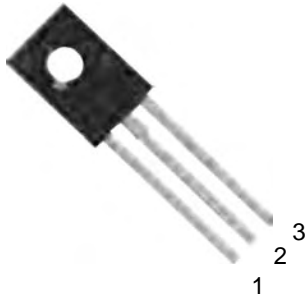


BD439/441(NPN)

TO-126 Transistor

TO-126



1. EMITTER
2. COLLECTOR
3. BASE

Features

✧ Amplifier and switching applications

MAXIMUM RATINGS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------|-------------------------------|-------------|--------------------|
| V_{CBO} | Collector-Base Voltage | BD439 60 | V |
| | | BD441 80 | |
| V_{CEO} | Collector-Emitter Voltage | BD439 60 | V |
| | | BD441 80 | |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current –Continuous | 4 | A |
| P_C | Collector Power Dissipation | 1.25 | W |
| T_J | Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^{\circ}\text{C}$ |

Dimensions in inches and (millimeters)

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------------|--------------------------------------|-------------|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$ | BD439 60 | | | V |
| | | | BD441 80 | | | |
| Collector-emitter breakdown voltage | $V_{CEO(SUS)}^{(1)}$ | $I_C=100\text{mA}, I_B=0$ | BD439 60 | | | V |
| | | | BD441 80 | | | |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60\text{V}, I_E=0$ | BD439 | | 100 | μA |
| | | $V_{CB}=80\text{V}, I_E=0$ | BD441 | | | |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_E=0$ | | | 1 | mA |
| DC current gain | $h_{FE(1)}^{(1)}$ | $V_{CE}=1\text{V}, I_C=500\text{mA}$ | 40 | | 475 | |
| | $h_{FE(2)}^{(1)}$ | $V_{CE}=5\text{V}, I_C=10\text{mA}$ | BD439 20 | | | |
| | | | BD441 15 | | | |
| | $h_{FE(3)}^{(1)}$ | $V_{CE}=1\text{V}, I_C=2\text{A}$ | BD439 25 | | | |
| | | | BD441 15 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}^{(1)}$ | $I_C=3\text{A}, I_B=0.3\text{A}$ | | | 0.8 | V |
| Base-emitter voltage | $V_{BE}^{(1)}$ | $V_{CE}=1\text{V}, I_C=2\text{A}$ | | | 1.1 | V |
| Transition frequency | f_T | $V_{CE}=1\text{V}, I_C=250\text{mA}$ | 3 | | | MHz |

⁽¹⁾Pulse test

BD439/441(NPN)

TO-126 Transistor

Typical Characteristics

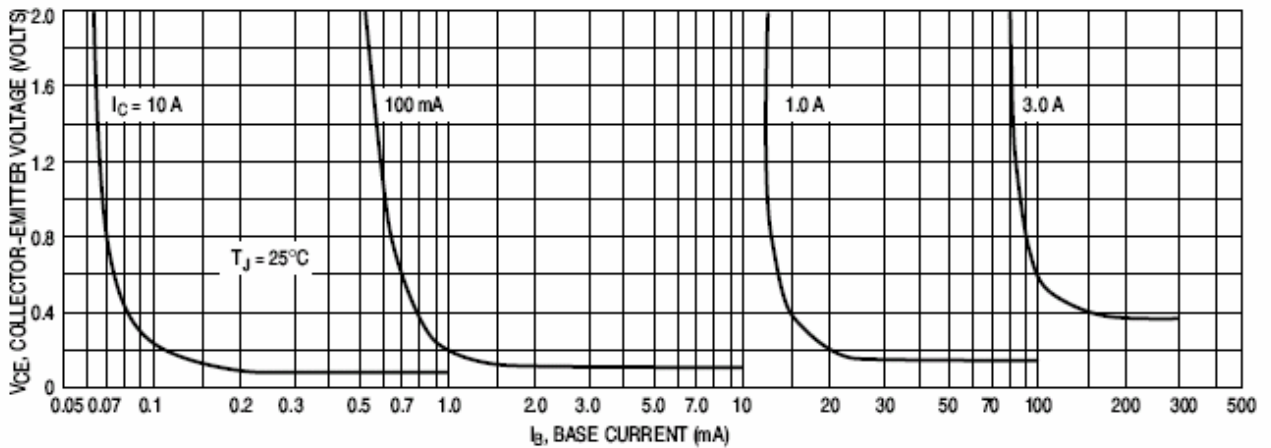


Figure 1. Collector Saturation Region

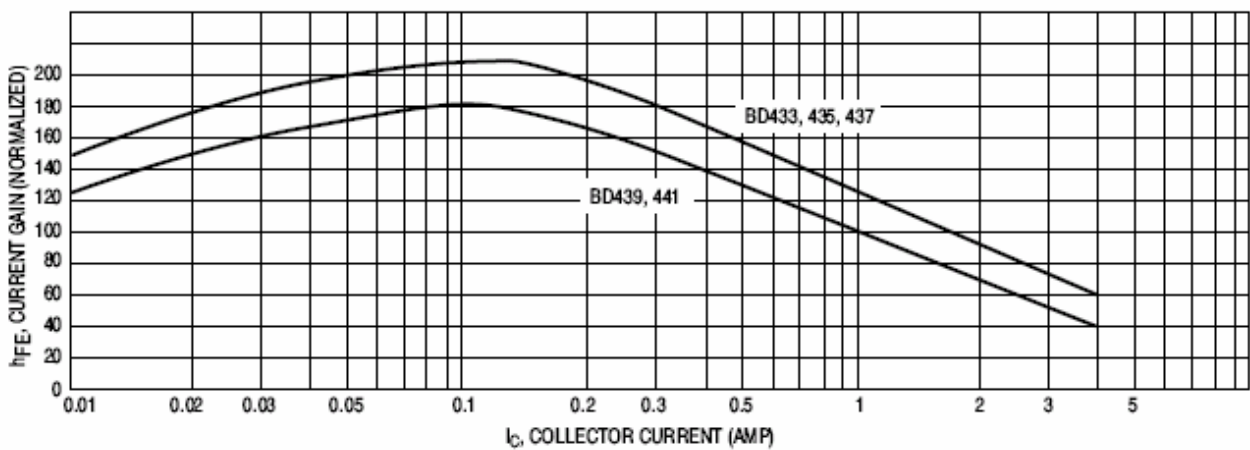


Figure 2. Current Gain

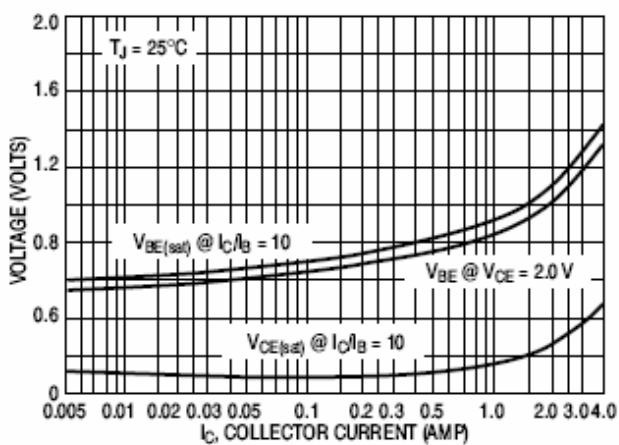


Figure 3. "On" Voltage

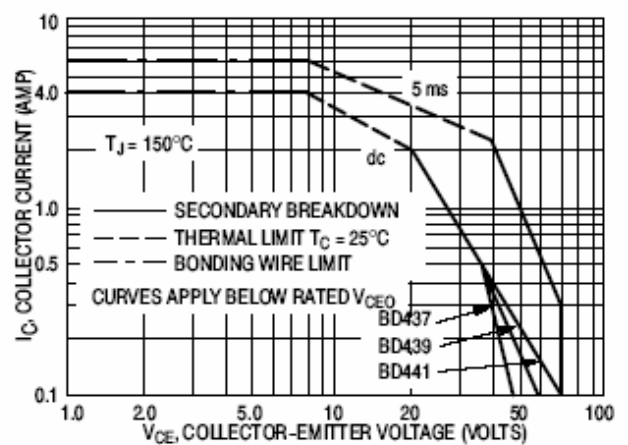


Figure 4. Active Region Safe Operating Area

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