

BU406

NPN Epitaxial Silicon Transistor

Features

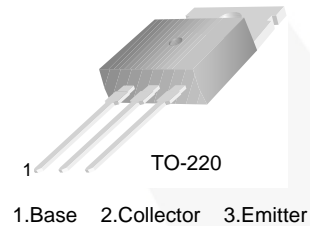
- High-Voltage Capability
- High Switching Speed
- Low Saturation Voltage

Applications

- Horizontal deflection for TV and CRT

Description

The BU406 is a 400 V 7 A Silicon Epitaxial Planar NPN Transistor. The BU406 is designed for high speed switching applications which utilizes the industry standard TO-220 package offering flexibility in design and excellent Power Dissipation.



Ordering Information

| Part Number | Marking | Package | Packing Method |
|-------------|---------|-----------|----------------|
| BU406 | BU406 | TO-220 3L | Rail |
| BU406TU | BU406 | | |

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_C = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Units |
|-----------|---------------------------|-------------|------------------|
| V_{CBO} | Collector-Base Voltage | 400 | V |
| V_{CEO} | Collector-Emitter Voltage | 200 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current (DC) | 7 | A |
| I_{CP} | Collector Current (Pulse) | 10 | A |
| I_B | Base Current | 4 | A |
| P_C | Collector Dissipation | 60 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 55 to 150 | $^\circ\text{C}$ |

Electrical CharacteristicsValues are at $T_C = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---------------|--------------------------------------|---|------|------|---------------|
| I_{CES} | Collector Cut-Off Current | $V_{CE} = 400\text{ V}, V_{BE} = 0$ | | 5 | mA |
| | | $V_{CE} = 250\text{ V}, V_{BE} = 0$ | | 100 | μA |
| | | $V_{CE} = 250\text{ V}, V_{BE} = 0$ at $T_C = 150^\circ\text{C}$ | | 1 | mA |
| I_{EBO} | Emitter Cut-Off Current | $V_{BE} = 6\text{ V}, I_C = 0$ | | 1 | mA |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 5\text{ A}, I_B = 0.5\text{ A}$ | | 1 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 5\text{ A}, I_B = 0.5\text{ A}$ | | 1.2 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}$ | 10 | | MHz |
| t_{OFF} | Turn-Off Time | $I_C = 5\text{ A}, I_B = 0.5\text{ A}$ | | 0.75 | μs |

Typical Performance Characteristics

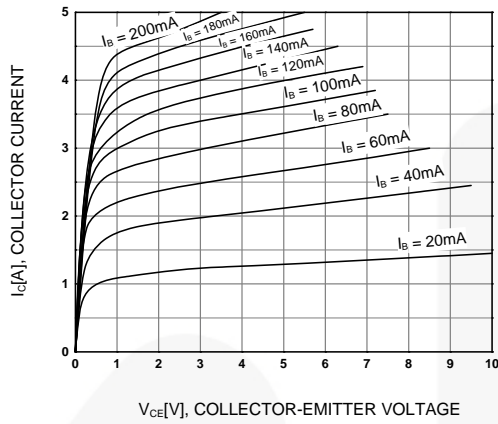


Figure 1. Static Characteristic

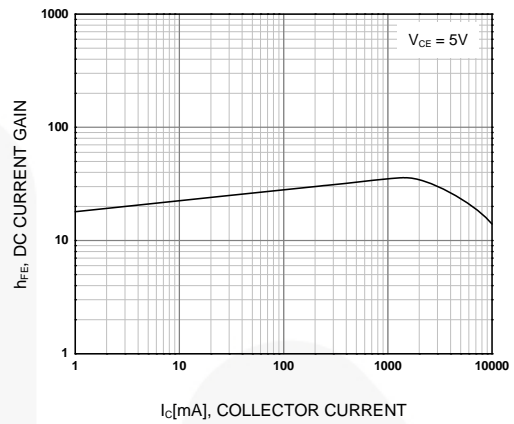


Figure 2. DC Current Gain

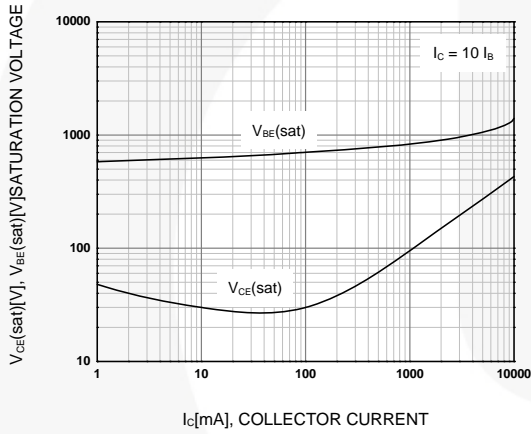


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

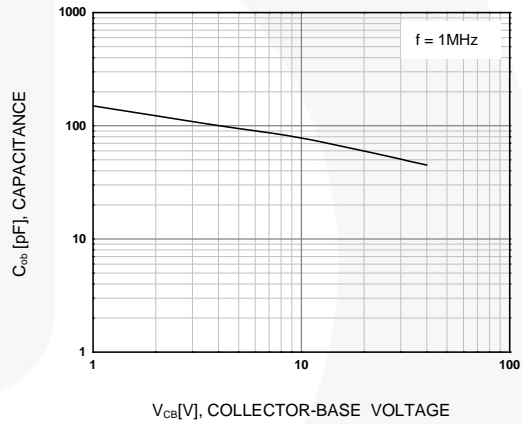


Figure 4. Collector Output Capacitance

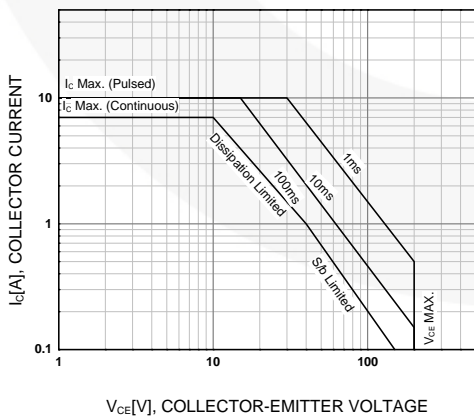


Figure 5. Safe Operating Area

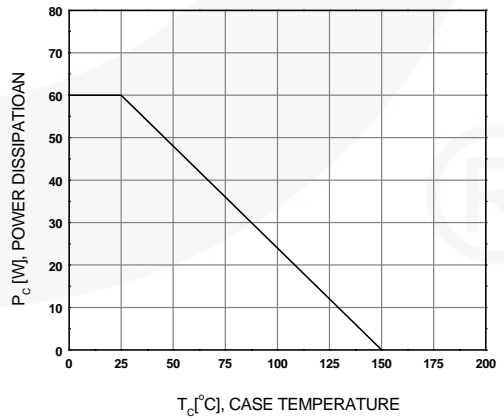


Figure 6. Power Derating

Physical Dimensions

TO-220

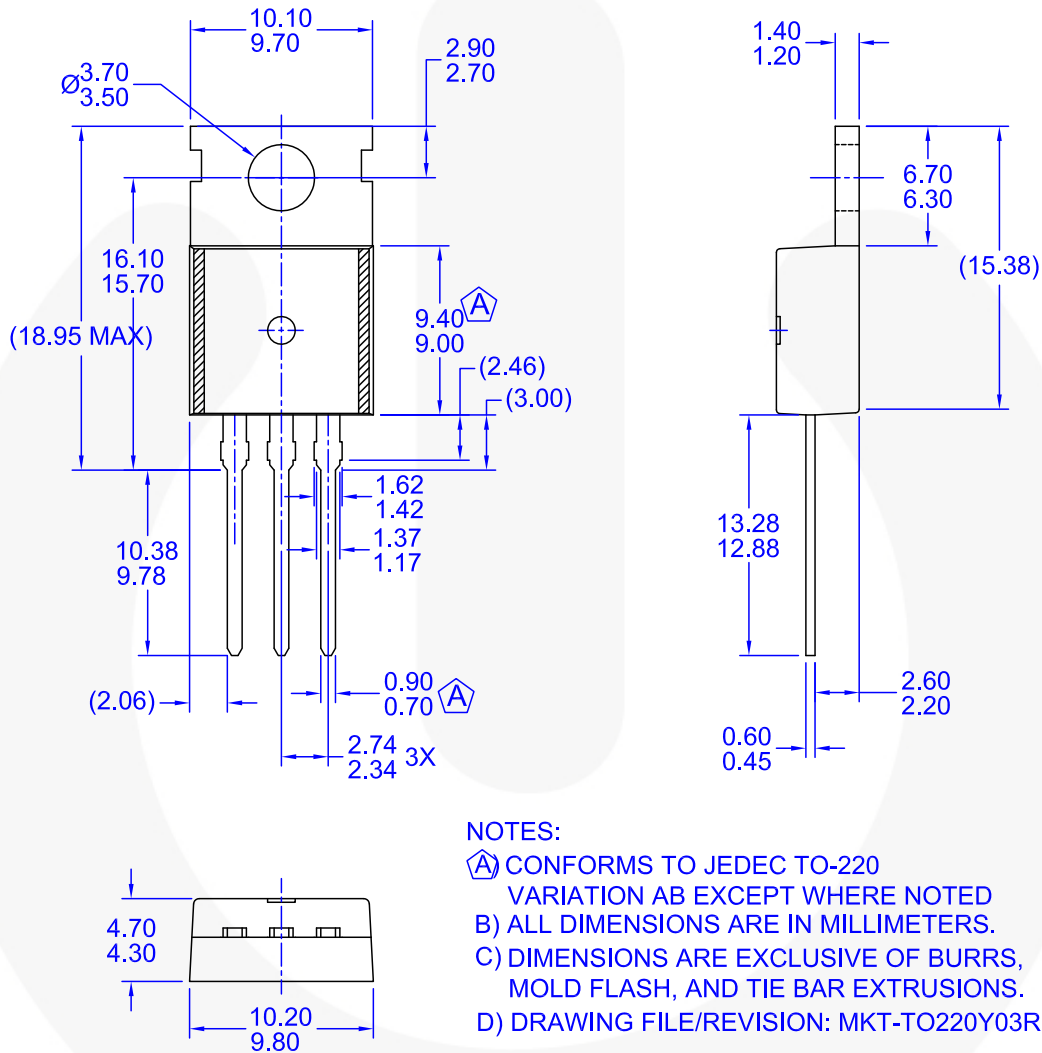


Figure 7. TO-220, MOLDED, 3-LEAD, JEDEC VARIATION AB

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|--------------------------|-----------------------|---|
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