

SILICON NPN SWITCHING TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- VERY HIGH SWITCHING SPEED

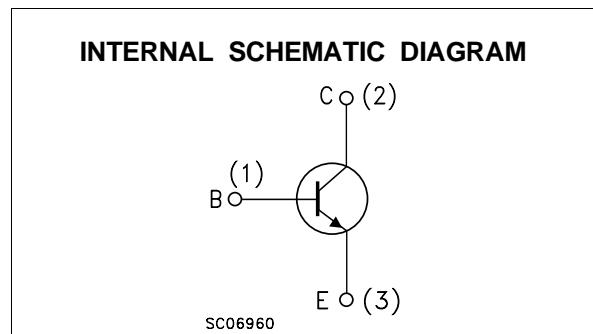
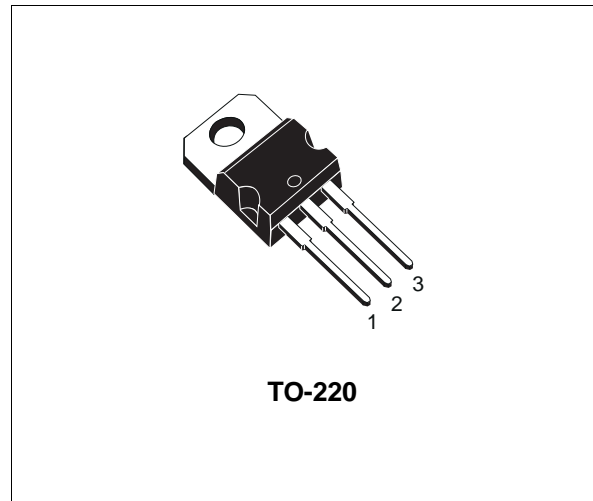
APPLICATIONS:

- HORIZONTAL DEFLECTION FOR MONOCHROME TV

DESCRIPTION

The BU406 is a silicon Epitaxial Planar NPN transistor in Jedec TO-220 plastic package.

It is a fast switching device for use in horizontal deflection output stages of large screens MTV receivers with 110° CRT.


ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | 400 | V |
| V_{CEV} | Collector-Emitter Voltage ($V_{BE} = -1.5$ V) | 400 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 200 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 6 | V |
| I_C | Collector Current | 7 | A |
| I_{CM} | Collector Peak Current (repetitive) | 10 | A |
| I_{CM} | Collector Peak Current ($t_p < 10$ ms) | 15 | A |
| I_B | Base Current | 4 | A |
| P_{tot} | Total Dissipation at $T_c \leq 25$ °C | 60 | W |
| T_{stg} | Storage Temperature | -65 to 150 | °C |
| T_j | Max. Operating Junction Temperature | 150 | °C |

THERMAL DATA

| | | | | |
|-----------------------|-------------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 2.08 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-ambient | Max | 70 | °C/W |

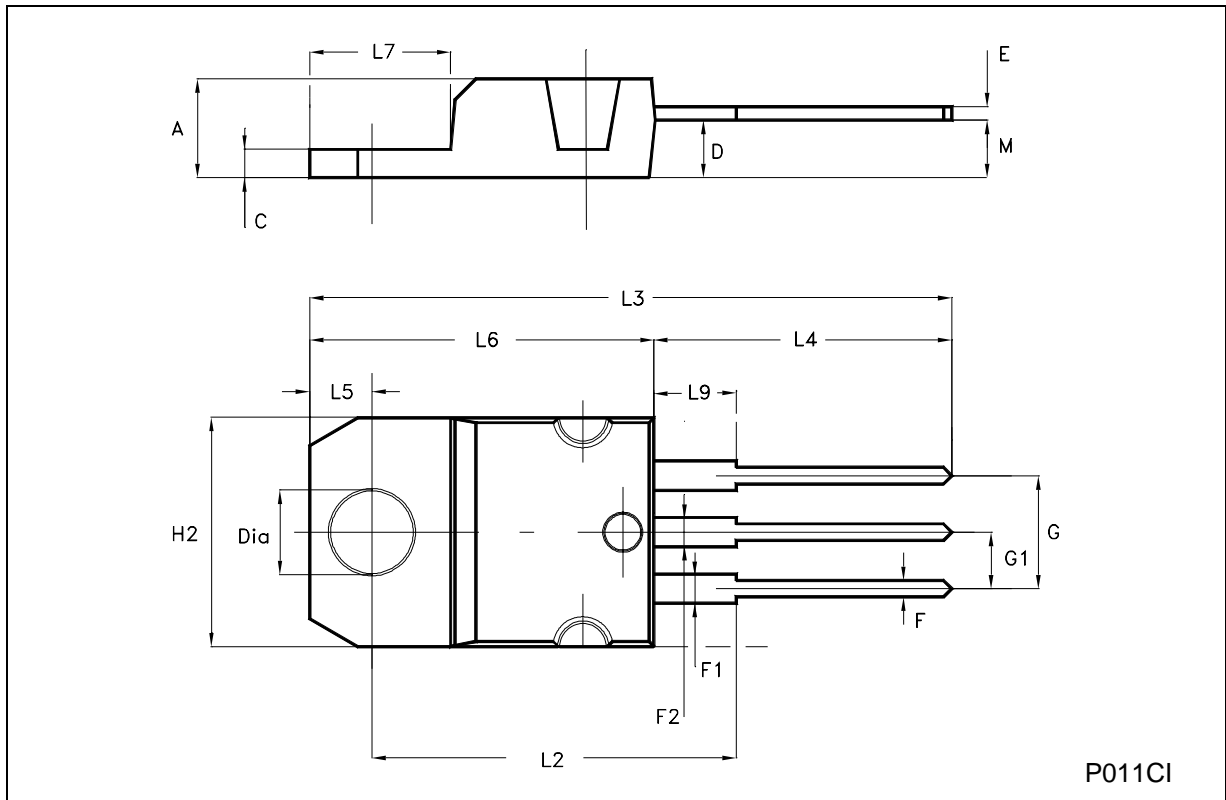
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|-----------------------|---|---|---------------------------|------|------|---------------|----------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = 400 V V _{CE} = 250 V V _{CE} = 250 V | T _c = 150°C | | | 5 100 1 | mA μA mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 6 V | | | | 1 | mA |
| V _{CE(sat)*} | Collector-emitter Saturation Voltage | I _C = 5 A | I _B = 0.5 A | | | 1 | V |
| V _{BE(sat)*} | Base-emitter Saturation Voltage | I _C = 5 A | I _B = 0.5 A | | | 1.2 | V |
| f _T | Transition-Frequency | I _C = 0.5 A | V _{CE} = 10V | 10 | | | MHz |
| t _{off} | Turn-off Time | I _C = 5 A | I _{Bend} = 0.5 A | | | 0.75 | μs |
| I _{s/b} | Second Breakdown Collector Current | V _{CE} = 40 V | t = 10 ms | | 4 | | A |

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %.

TO-220 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|-------|-------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| C | 1.23 | | 1.32 | 0.048 | | 0.052 |
| D | 2.40 | | 2.72 | 0.094 | | 0.107 |
| E | 0.49 | | 0.70 | 0.019 | | 0.027 |
| F | 0.61 | | 0.88 | 0.024 | | 0.034 |
| F1 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| F2 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| G | 4.95 | | 5.15 | 0.194 | | 0.202 |
| G1 | 2.40 | | 2.70 | 0.094 | | 0.106 |
| H2 | 10.00 | | 10.40 | 0.394 | | 0.409 |
| L2 | | 16.40 | | | 0.645 | |
| L4 | 13.00 | | 14.00 | 0.511 | | 0.551 |
| L5 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| L6 | 15.25 | | 15.75 | 0.600 | | 0.620 |
| L7 | 6.20 | | 6.60 | 0.244 | | 0.260 |
| L9 | 3.50 | | 3.93 | 0.137 | | 0.154 |
| M | | 2.60 | | | 0.102 | |
| DIA. | 3.75 | | 3.85 | 0.147 | | 0.151 |



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