



**BU806  
BU807**

## MEDIUM VOLTAGE NPN FAST SWITCHING DARLINGTON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- NPN DARLINGTONS
- LOW BASE-DRIVE REQUIREMENTS
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE

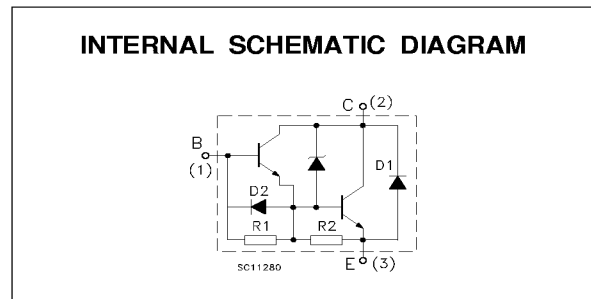
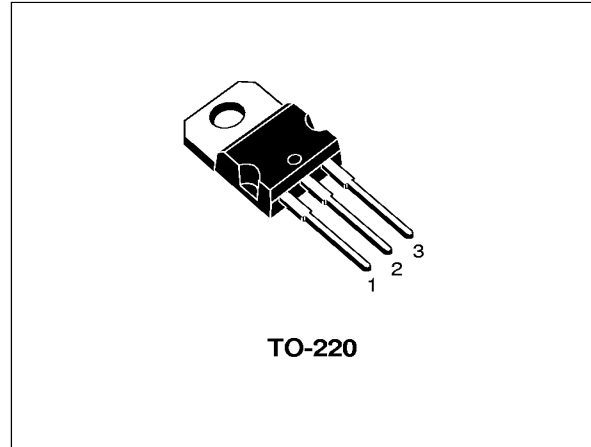
### APPLICATION

- HORIZONTAL DEFLECTION FOR MONOCHROME TVs

### DESCRIPTION

The devices are silicon epitaxial planar NPN power transistors in Darlington configuration with integrated base-emitter speed-up diode, mounted in TO-220 plastic package.

They can be used in horizontal output stages of 110 °CRT video displays.



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter  | Value      |       | Unit |
|-----------|--|------------|-------|------|
|           |  | BU806      | BU807 |      |
| $V_{CBO}$ | Collector-base Voltage ( $I_E = 0$ )                 | 400        | 330   | V    |
| $V_{CEV}$ | Collector-emitter Voltage ( $V_{BE} = -6V$ )         | 400        | 330   | V    |
| $V_{CEO}$ | Collector-emitter Voltage ( $I_B = 0$ )              | 200        | 150   | V    |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )                   | 6          |       | V    |
| $I_C$     | Collector Current                                    | 8          |       | A    |
| $I_{CM}$  | Collector Peak Current                               | 15         |       | A    |
| $I_{DM}$  | Damper Diode Peak Forward Current                    | 10         |       | A    |
| $I_B$     | Base Current   | 2          |       | A    |
| $P_{tot}$ | Total Power Dissipation at $T_{case} < 25\text{ °C}$ | 60         |       | W    |
| $T_{stg}$ | Storage Temperature                                  | -65 to 150 |       | °C   |
| $T_j$     | Max Operating Junction Temperature                   | 150        |       | °C   |

## BU806 / BU807

### THERMAL DATA

|                       |                                     |     |      |      |
|-----------------------|-------------------------------------|-----|------|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case    | Max | 2.08 | °C/W |
| R <sub>thj-amb</sub>  | Thermal Resistance Junction-ambient | Max | 70   | °C/W |

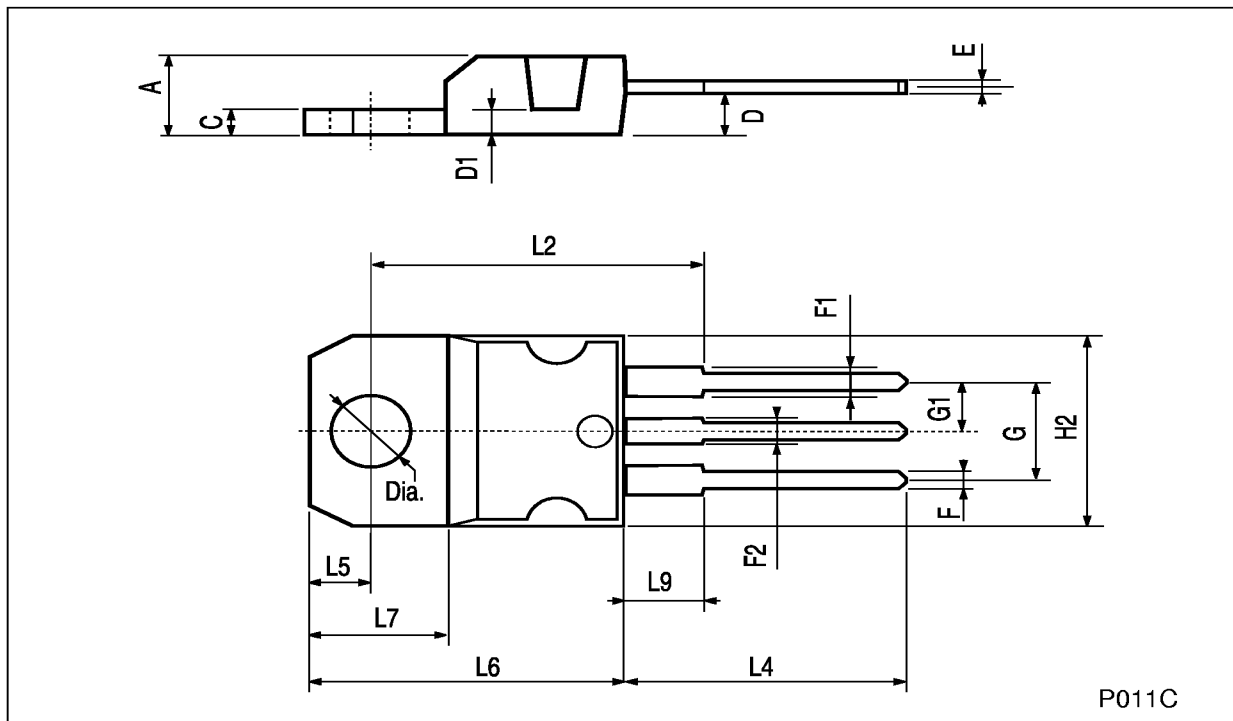
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol  | Parameter  | Test Conditions                                 |  | Min.       | Typ.                       | Max.       | Unit                 |
|---|--|---|--|------------|----------------------------|------------|----------------------|
| I <sub>CEs</sub>  | Collector Cut-off Current (V <sub>BE</sub> = 0)                              | for <b>BU807</b><br>for <b>BU806</b>            | V <sub>CE</sub> = 330 V<br>V <sub>CE</sub> = 400 V   |            |                            | 100<br>100 | μA<br>μA             |
| I <sub>CEV</sub>  | Collector Cut-off Current (V <sub>BE</sub> = -6V)                            | for <b>BU807</b><br>for <b>BU806</b>            | V <sub>CE</sub> = 330 V<br>V <sub>CE</sub> = 400 V   |            |                            | 100<br>100 | μA<br>μA             |
| I <sub>EBO</sub>  | Emitter Cut-off Current (I <sub>C</sub> = 0)                                 | V <sub>EB</sub> = 6 V                           |  |            |                            | 3.5        | mA                   |
| V <sub>CEO(sus)*</sub>  | Collector-Emitter Sustaining Voltage   | I <sub>C</sub> = 100 mA                         | for <b>BU807</b><br>for <b>BU806</b>                 | 150<br>200 |                            |            | V<br>V               |
| V <sub>CE(sat)*</sub>   | Collector-Emitter Saturation Voltage   | I <sub>C</sub> = 5 A                            | I <sub>B</sub> = 50mA                                |            |                            | 1.5        | V                    |
| V <sub>BE(sat)*</sub>   | Base-Emitter Saturation Voltage  | I <sub>C</sub> = 5 A                            | I <sub>B</sub> = 50mA                                |            |                            | 2.4        | V                    |
| V <sub>F*</sub>   | Damper Diode Forward Voltage   | I <sub>F</sub> = 4 A                            |  |            |                            | 2          | V                    |
| t <sub>on</sub><br>t <sub>off</sub><br>t <sub>s</sub><br>t <sub>f</sub> | RESISTIVE LOAD<br>Turn-on Time<br>Turn-off Time<br>Storage Time<br>Fall Time | I <sub>C</sub> = 5 A<br>I <sub>B1</sub> = 50 mA | V <sub>CC</sub> = 100 V<br>I <sub>B2</sub> = -500 mA |            | 0.35<br>0.4<br>0.55<br>0.2 | 1          | μs<br>μs<br>μs<br>μs |

\* 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 |       | 0.051 |
| D    | 2.40  |      | 2.72  | 0.094 |       | 0.107 |
| D1   |       | 1.27 |       |       | 0.050 |       |
| 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 |       | 0.203 |
| G1   | 2.4   |      | 2.7   | 0.094 |       | 0.106 |
| H2   | 10.0  |      | 10.40 | 0.393 |       | 0.409 |
| L2   |       | 16.4 |       |       | 0.645 |       |
| L4   | 13.0  |      | 14.0  | 0.511 |       | 0.551 |
| L5   | 2.65  |      | 2.95  | 0.104 |       | 0.116 |
| L6   | 15.25 |      | 15.75 | 0.600 |       | 0.620 |
| L7   | 6.2   |      | 6.6   | 0.244 |       | 0.260 |
| L9   | 3.5   |      | 3.93  | 0.137 |       | 0.154 |
| DIA. | 3.75  |      | 3.85  | 0.147 |       | 0.151 |



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