

## BD410

### NPN EPITAXILA SILICON POWER TRANSISTORS

They are silicon epitaxial planar NPN power transistors mounted in a TO-126 plastic package.

AF-amplifier for high supply voltage

They are intended for control circuit, vertical output stages in TVsets, and general purpose applications.

Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                                           |                          | Value       | Unit |
|-----------|---------------------------------------------------|--------------------------|-------------|------|
| $V_{CBO}$ | Collector-Base Voltage                            |                          | 500         | V    |
| $V_{CEO}$ | Collector-Emitter Voltage                         |                          | 325         | V    |
| $V_{EBO}$ | Emitter-Base Voltage                              |                          | 5           | V    |
| $I_C$     | Collector Current                                 |                          | 1           | A    |
| $I_{CM}$  | Collector Peak Current                            |                          | 1.5         | A    |
| $P_T$     | Total Power Dissipation                           | $T_a = 25^\circ\text{C}$ | 1.25        | W    |
|           |                                                   | $T_c = 25^\circ\text{C}$ | 20          |      |
| $t_J$     | Junction Temperature                              |                          | -55 to +125 | °C   |
| $t_s$     | Storage Temperature range                         |                          | -55 to +125 |      |
| $t_L$     | Lead Temperature 1.6 mm From Case For 10 Secondes |                          | 260         |      |

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### ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise noted

| Symbol        | Ratings                                  | Test Condition(s)                       | Min | Typ | Max | Unit          |
|---------------|------------------------------------------|-----------------------------------------|-----|-----|-----|---------------|
| $V_{CEO}$     | Collector-Emitter Breakdown Voltage (*)  | $I_C=10\text{ mA}, I_B=0$               | 325 | -   | -   | V             |
| $V_{CBO}$     | Collector-Base Breakdown Voltage         | $I_C=0.5\text{ mA}, I_E=0$              | 500 | -   | -   | V             |
| $V_{EBO}$     | Collector-Base Breakdown Voltage         | $I_E=50\text{ }\mu\text{A}, I_C=0$      | 5   | -   | -   | V             |
| $I_{CES}$     | Collector Cutoff Current                 | $V_{CE}=300\text{ V}, I_B=0$            | -   | -   | 100 | $\mu\text{A}$ |
| $V_{CE(SAT)}$ | Collector-Emitter saturation Voltage (*) | $I_C=100\text{ mA}, I_B=10\text{ mA}$   | -   | -   | 0.5 | V             |
| $V_{BE}$      | Base-Emitter Voltage (*)                 | $I_C=100\text{ mA}, I_B=10\text{ mA}$   | -   | -   | 1.5 | V             |
| $h_{FE}$      | DC Current Gain (*)                      | $I_C=5\text{ mA}, V_{CE}=10\text{ V}$   | 25  | -   | -   | -             |
|               |                                          | $I_C=50\text{ mA}, V_{CE}=10\text{ V}$  | 30  | -   | 240 |               |
|               |                                          | $I_C=100\text{ mA}, V_{CE}=10\text{ V}$ | 20  | -   | -   |               |

### SWITCHING TIMES.

| Symbol    | Ratings            | Test Condition(s)                            | Min | Typ | Mx | Unit |
|-----------|--------------------|----------------------------------------------|-----|-----|----|------|
| $C_{obo}$ | Output Capacitance | $I_E=0, V_{CB}=10\text{ V}, f=1\text{ MHz}$  | -   | 5.5 | -  | pF   |
| $C_{ibo}$ | Input Capacitance  | $I_E=0, V_{CB}=0.5\text{ V}, f=1\text{ MHz}$ | -   | 90  | -  |      |

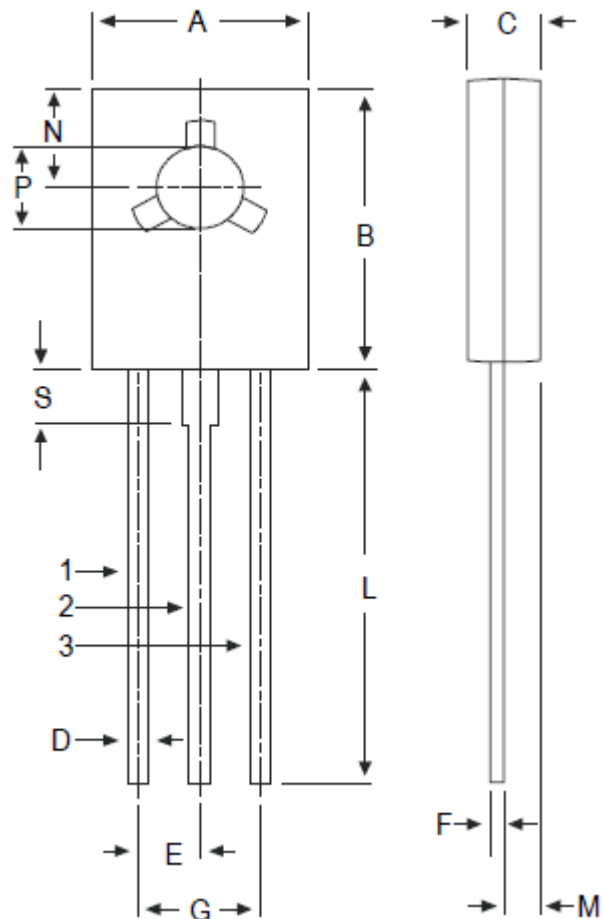
(\*) These parameters must be measured using pulse techniques,  $t_p$  300  $\mu\text{s}$ , Duty Cycle  $\angle 2\%$

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### MECHANICAL DATA CASE TO-126

|   | DIMENSIONS |      |
|---|------------|------|
|   | min        | max  |
| A | 7.4        | 7.8  |
| B | 10.5       | 10.8 |
| C | 2.4        | 2.7  |
| D | 0.7        | 0.9  |
| E | 2.25 typ.  |      |
| F | 0.49       | 0.75 |
| G | 4.4 typ.   |      |
| L | 15.7 typ.  |      |
| M | 1.27 typ.  |      |
| N | 3.75 typ.  |      |
| P | 3.0        | 3.2  |
| S | 2.54 typ.  |      |

|         |           |
|---------|-----------|
| Pin 1 : | Emitter   |
| Pin 2 : | Collector |
| Pin 3 : | Base      |



Revised August 2012

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