

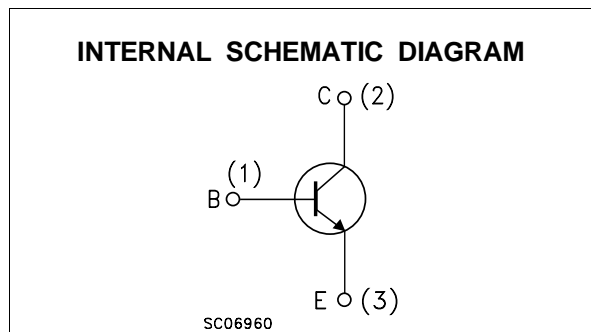
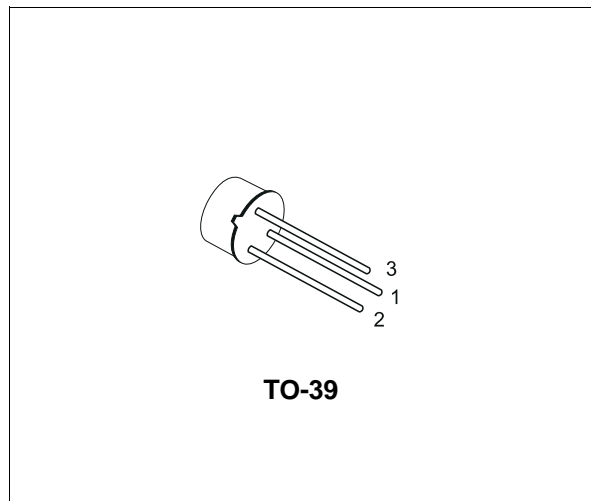
## SMALL SIGNAL PNP TRANSISTORS

- SILICON EPITAXIAL PLANAR PNP TRANSISTORS
- MEDIUM POWER AMPLIFIER
- NPN COMPLEMENTS ARE 2N5320 AND 2N5321

### DESCRIPTION

The 2N5322 and 2N5323 are silicon epitaxial planar PNP transistors in Jedec TO-39 metal case. They are especially intended for high-voltage medium power application in industrial and commercial equipments.

The complementary NPN types are respectively the 2N5320 and 2N5321



### ABSOLUTE MAXIMUM RATINGS

| Symbol         | Parameter   | Value      |        | Unit             |
|----------------|---|------------|--------|------------------|
|                |   | 2N5322     | 2N5323 |                  |
| $V_{CBO}$      | Collector-Base Voltage ( $I_E = 0$ )                      | -100       | -75    | V                |
| $V_{CEV}$      | Collector-Emitter Voltage ( $V_{BE} = -1.5V$ )            | -100       | -75    | V                |
| $V_{CEO}$      | Collector-Emitter Voltage ( $I_B = 0$ )                   | -75        | -50    | V                |
| $V_{EBO}$      | Emitter-Base Voltage ( $I_C = 0$ )                        | -6         | -5     | V                |
| $I_C$          | Collector Current   | -1.2       |        | A                |
| $I_{CM}$       | Collector Peak Current                                    | -2         |        | A                |
| $I_B$          | Base Current  | -1         |        | A                |
| $P_{tot}$      | Total Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$ | 1          |        | W                |
| $P_{tot}$      | Total Dissipation at $T_c = 25\text{ }^\circ\text{C}$     | 10         |        | W                |
| $T_{stg}, T_j$ | Storage and Junction Temperature                          | -65 to 200 |        | $^\circ\text{C}$ |

## 2N5322/2N5323

### THERMAL DATA

|                       |                                     |     |      |      |
|-----------------------|-------------------------------------|-----|------|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-Case    | Max | 17.5 | °C/W |
| R <sub>thj-amb</sub>  | Thermal Resistance Junction-Ambient | Max | 175  | °C/W |

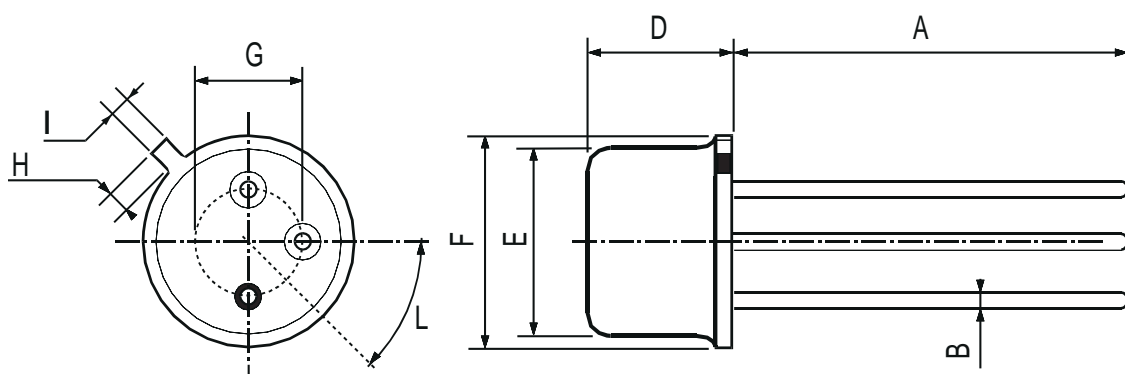
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                | Parameter  | Test Conditions  | Min.           | Typ.         | Max.         | Unit     |
|-----------------------|--|--|----------------|--------------|--------------|----------|
| I <sub>CBO</sub>      | Collector Cut-off Current (I <sub>E</sub> = 0)               | V <sub>CB</sub> = -80 V for <b>2N5322</b><br>V <sub>CB</sub> = -60 V for <b>2N5323</b>   |                |              | -0.5<br>-5   | μA<br>μA |
| I <sub>EBO</sub>      | Collector Cut-off Current (I <sub>C</sub> = 0)               | V <sub>EB</sub> = -5 V for <b>2N5322</b><br>V <sub>EB</sub> = -4 V for <b>2N5323</b>   |                | -0.1<br>-0.5 |              | μA<br>μA |
| V <sub>(BR)CEV</sub>  | Collector-Emitter Breakdown Voltage (V <sub>BE</sub> = 1.5V) | I <sub>C</sub> = -100 μA for <b>2N5322</b><br>for <b>2N5323</b>  | -100<br>-75    |              |              | V<br>V   |
| V <sub>(BR)CEO*</sub> | Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)     | I <sub>C</sub> = -10 mA for <b>2N5322</b><br>for <b>2N5323</b>   | -75<br>-50     |              |              | V<br>V   |
| V <sub>(BR)EBO</sub>  | Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)          | I <sub>E</sub> = -100 μA for <b>2N5322</b><br>for <b>2N5323</b>  | -6<br>-5       |              |              | V<br>V   |
| V <sub>CE(sat)*</sub> | Collector-Emitter Saturation Voltage                         | I <sub>C</sub> = -500 mA I <sub>B</sub> = -50 mA for <b>2N5322</b><br>for <b>2N5323</b>  |                |              | -0.7<br>-1.2 | V<br>V   |
| V <sub>BE*</sub>      | Base-Emitter Voltage   | I <sub>C</sub> = -500 mA V <sub>CE</sub> = -4 V for <b>2N5322</b><br>for <b>2N5323</b>   |                |              | -1.1<br>-1.4 | V<br>V   |
| h <sub>FE*</sub>      | DC Current Gain  | for <b>2N5322</b><br>I <sub>C</sub> = -500 mA V <sub>CE</sub> = -4 V<br>I <sub>C</sub> = -1 A V <sub>CE</sub> = -2 V<br>for <b>2N5323</b><br>I <sub>C</sub> = -500 mA V <sub>CE</sub> = -4 V | 30<br>10<br>40 |              | 130<br>250   |          |
| f <sub>T</sub>        | Transition Frequency   | I <sub>C</sub> = -50 mA V <sub>CE</sub> = -4 V f = 10 MHz  | 50             |              |              | MHz      |
| t <sub>on</sub>       | Turn-on Time   | I <sub>C</sub> = -500 mA V <sub>CC</sub> = -30 V<br>I <sub>B1</sub> = -50 mA   |                |              | 100          | ns       |
| t <sub>off</sub>      | Turn-off Time  | I <sub>C</sub> = -500 mA V <sub>CC</sub> = -30 V<br>I <sub>B1</sub> = -I <sub>B2</sub> = -50 mA  |                |              | 1000         | ns       |

\* Pulsed: Pulse duration = 300 μs, duty cycle = 1 %

## TO-39 MECHANICAL DATA

| DIM. | mm         |      |      | inch  |      |       |
|------|------------|------|------|-------|------|-------|
|      | MIN.       | TYP. | MAX. | MIN.  | TYP. | MAX.  |
| A    | 12.7       |      |      | 0.500 |      |       |
| B    |            |      | 0.49 |       |      | 0.019 |
| D    |            |      | 6.6  |       |      | 0.260 |
| E    |            |      | 8.5  |       |      | 0.334 |
| F    |            |      | 9.4  |       |      | 0.370 |
| G    | 5.08       |      |      | 0.200 |      |       |
| H    |            |      | 1.2  |       |      | 0.047 |
| I    |            |      | 0.9  |       |      | 0.035 |
| L    | 45° (typ.) |      |      |       |      |       |



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