

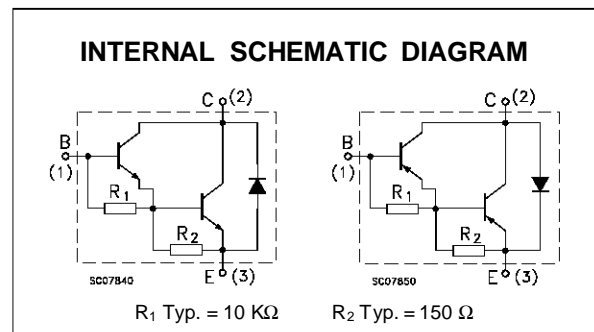
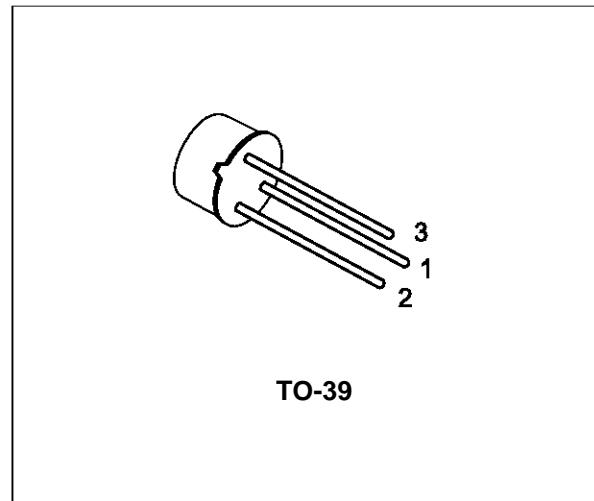
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The BDW91 is a silicon epitaxial-base NPN transistors in monolithic Darlington configuration mounted in Jedec TO-39 metal case, intended for use in linear and switching applications.

The complementary PNP types is BDW92.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|-----------|--|-------|------------|------------|
| | | NPN | BDW91 | |
| | | PNP | BDW92 | |
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | | 180 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | | 180 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | | 6 | V |
| I_C | Collector Current | | 4 | A |
| I_B | Base Current | | 100 | mA |
| P_{tot} | Total Dissipation at $T_{case} \leq 25^\circ C$ $T_{amb} \leq 25^\circ C$ | | 10 | W |
| | | | 1 | W |
| T_{stg} | Storage Temperature | | -65 to 200 | $^\circ C$ |
| T_j | Max. Operating Junction Temperature | | 200 | $^\circ C$ |

For PNP types voltage and current values are negative.

BDW91/BDW92

THERMAL DATA

| | | | | |
|-----------------------|----------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 17.5 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-amb | Max | 175 | °C/W |

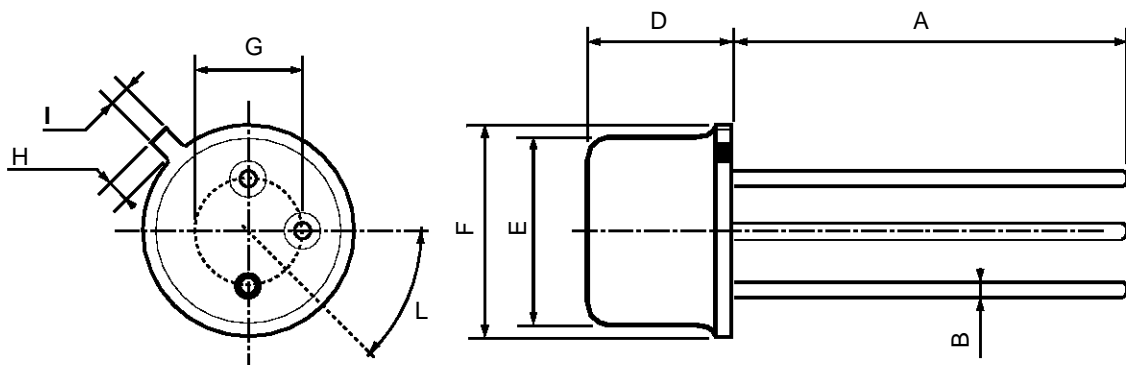
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-------------------------|--|--|-------------|-------------|------|------|
| I _{CBO} | Collector Cut-off Current (I _E = 0) | V _{CB} = 180 V | | | 50 | μA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CE} = 90 V | | | 50 | μA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 6 V | 0.4 | | 2 | mA |
| V _{CEO(sus)} * | Collector-Emitter Sustaining Voltage | I _C = 50 mA | 180 | | | V |
| V _{CE(sat)} * | Collector-Emitter Saturation Voltage | I _C = 2 A I _B = 4 mA | | | 2 | V |
| V _{BE} * | Base-Emitter Voltage | I _C = 2 A V _{CE} = 2 V | | | 2.5 | V |
| h _{FE} * | DC Current Gain | I _C = 2 A V _{CE} = 5 V I _C = 50 mA V _{CE} = 5 V | 1000 150 | 3000 300 | | |
| V _F * | Parallel Diode Forward Voltage | I _F = 2 A | | | 2.5 | V |
| h _{fe} | Small Signal Current Gain | I _C = 0.5 A V _{CE} = .2 V f = 1 MHz | | 20 | | MHz |

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %
For PNP types voltage and current values are negative.

TO39 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.) | | | | | |



P008B

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