

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE

APPLICATIONS

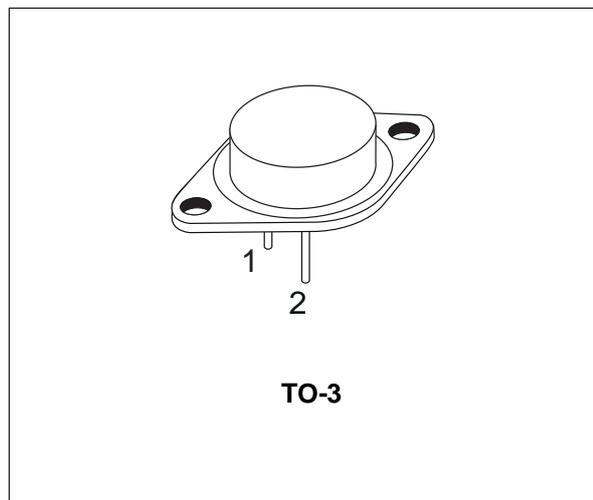
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

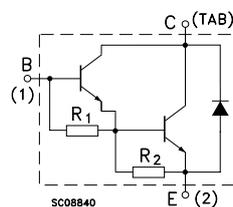
The 2N6284 is a silicon epitaxial-base NPN power transistor in monolithic Darlington configuration mounted in Jedec TO-3 metal case.

It is intended for general purpose amplifier and low frequency switching applications.

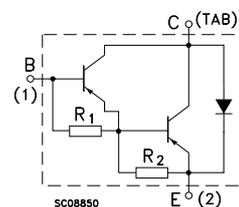
The complementary PNP types is 2N6287.



INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 8 K Ω



R_2 Typ. = 60 Ω

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|-----------|--|-------|------------|------------------|
| | | NPN | 2N6284 | |
| | | PNP | 2N6287 | |
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | | 100 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | | 100 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | | 5 | V |
| I_C | Collector Current | | 20 | A |
| I_{CM} | Collector Peak Current | | 40 | A |
| I_B | Base Current | | 0.5 | A |
| P_{tot} | Total Dissipation at $T_c \leq 25^\circ\text{C}$ | | 160 | W |
| T_{stg} | Storage Temperature | | -65 to 200 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | | 200 | $^\circ\text{C}$ |

For PNP types voltage and current values are negative.

THERMAL DATA

| | | | | |
|-----------------------|----------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 1.09 | °C/W |
|-----------------------|----------------------------------|-----|------|------|

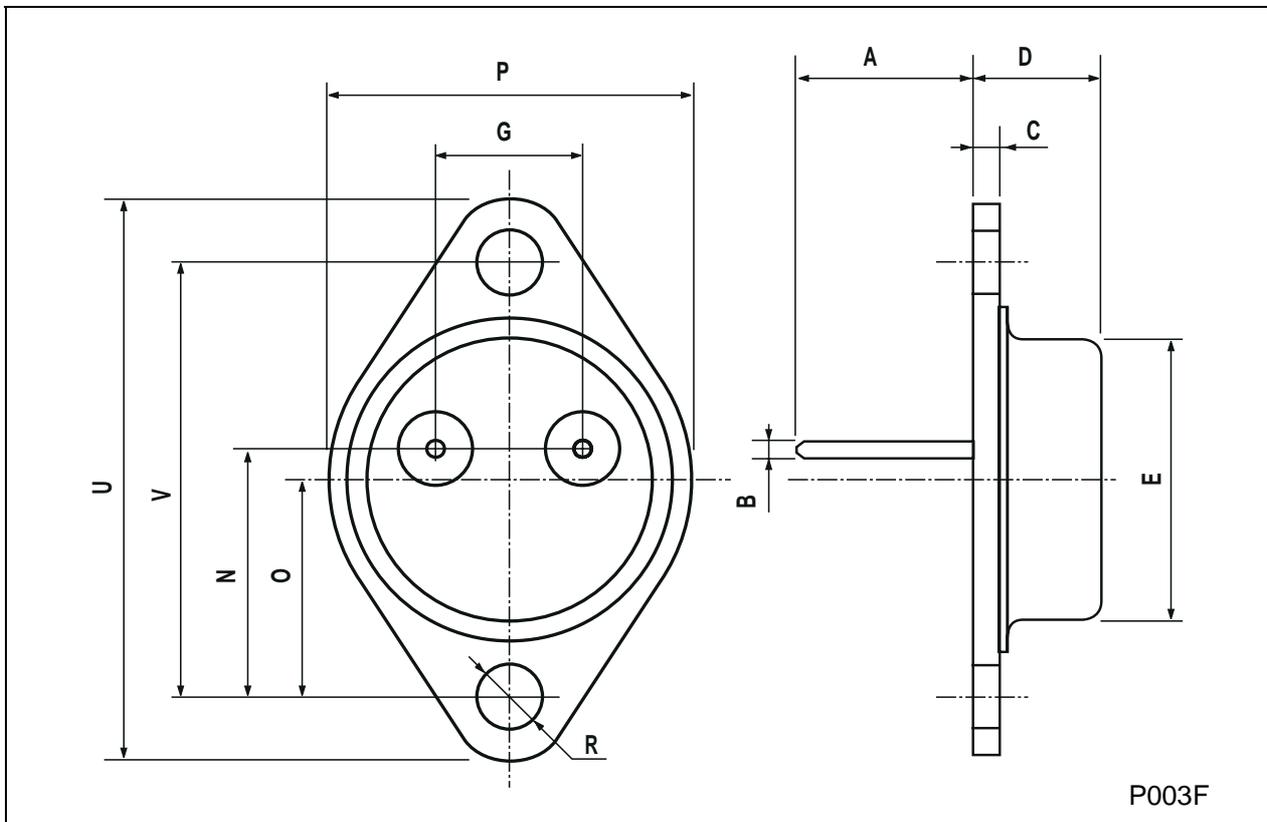
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|---|--|------------|------|------------|----------|
| I _{CEV} | Collector Cut-off Current (V _{BE} = -1.5V) | V _{CE} = rated V _{CEO} V _{CE} = rated V _{CEO} T _C = 150 °C | | | 0.5 5 | mA mA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CE} = 50 V | | | 1 | mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 5 V | | | 2 | mA |
| V _{CEO(sus)*} | Collector-Emitter Sustaining Voltage | I _C = 100 mA | 100 | | | V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = 10 A I _B = 40 mA I _C = 20 A I _B = 200 mA | | | 2 3 | V V |
| V _{BE(sat)*} | Base-Emitter Saturation Voltage | I _C = 20 A I _B = 200 mA | | | 4 | V |
| V _{BE*} | Base-Emitter Voltage | I _C = 10 A V _{CE} = 3 V | | | 2.8 | V |
| h _{FE*} | DC Current Gain | I _C = 10 A V _{CE} = 3 V I _C = 20 A V _{CE} = 3 V | 750 100 | | 18000 | |
| h _{fe} | Small Signal Current Gain | I _C = 3 A V _{CE} = 10 V f = 1KHz | 300 | | | |
| C _{CBO} | Collector Base Capacitance | I _E = 0 V _{CB} = 10 V f = 100KHz for NPN types for PNP types | | | 400 600 | pF pF |

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

TO-3 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|------|-------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 11.00 | | 13.10 | 0.433 | | 0.516 |
| B | 0.97 | | 1.15 | 0.038 | | 0.045 |
| C | 1.50 | | 1.65 | 0.059 | | 0.065 |
| D | 8.32 | | 8.92 | 0.327 | | 0.351 |
| E | 19.00 | | 20.00 | 0.748 | | 0.787 |
| G | 10.70 | | 11.10 | 0.421 | | 0.437 |
| N | 16.50 | | 17.20 | 0.649 | | 0.677 |
| P | 25.00 | | 26.00 | 0.984 | | 1.023 |
| R | 4.00 | | 4.09 | 0.157 | | 0.161 |
| U | 38.50 | | 39.30 | 1.515 | | 1.547 |
| V | 30.00 | | 30.30 | 1.187 | | 1.193 |



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