

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

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

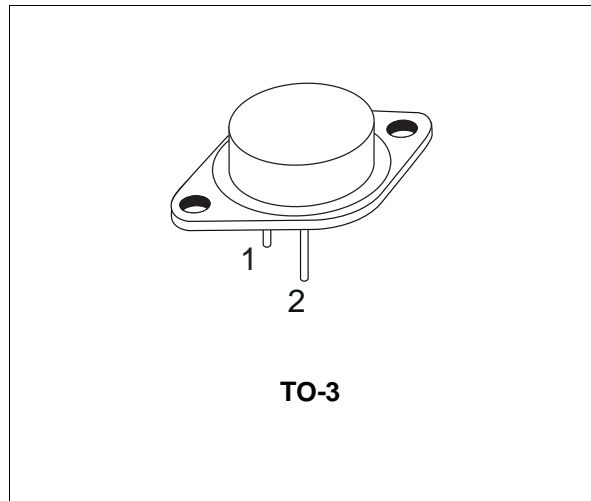
APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

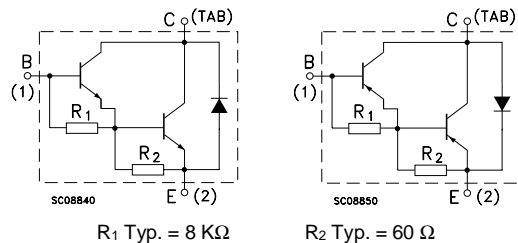
DESCRIPTION

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



ABSOLUTE MAXIMUM RATINGS

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

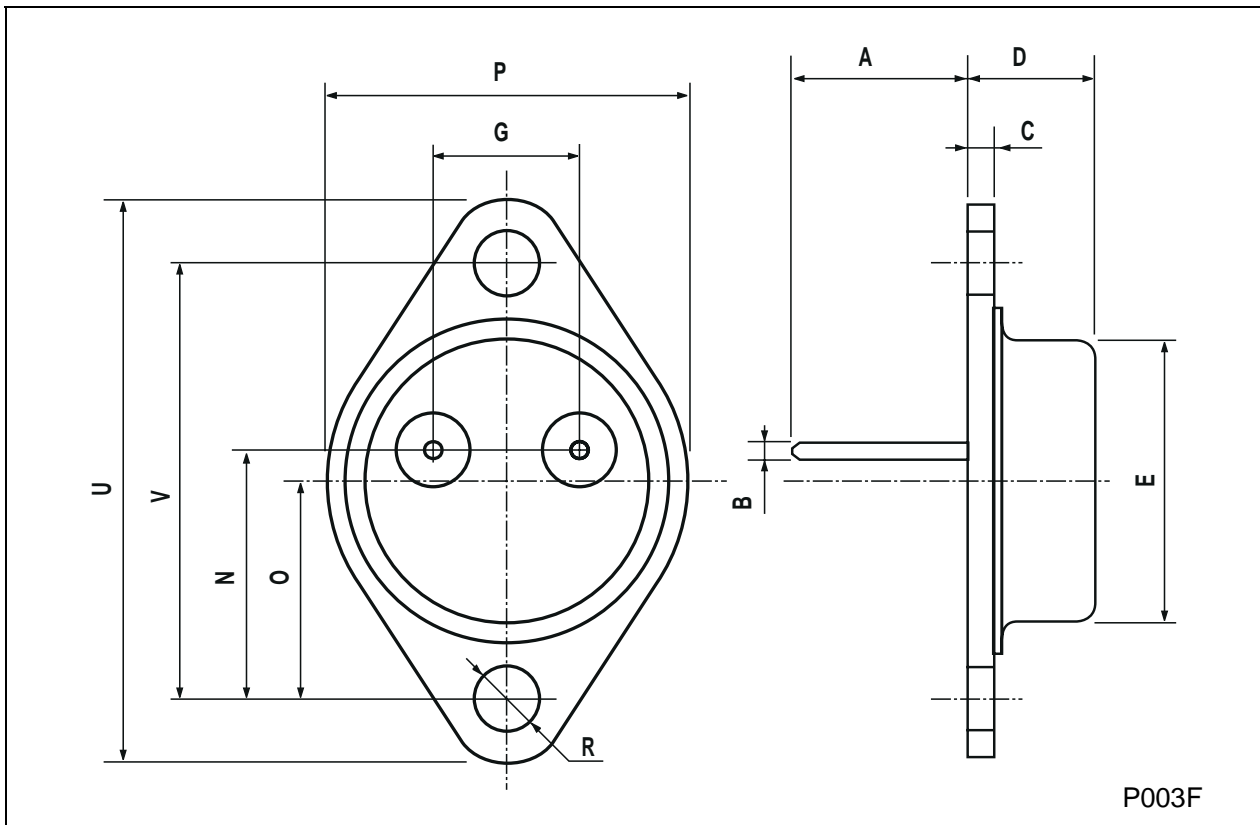
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| 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 |



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
...