SGS-THOMSON MICROELECTRONICS

# 2N6283/2N6284 2N6286/2N6287

## COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

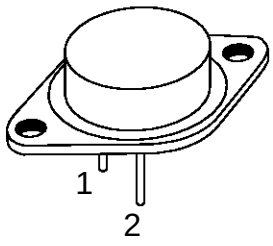
- 2N6284 AND2N6287 ARE SGS-THOMSON PREFERRED SALESTYPES

**DESCRIPTION**

The 2N6283 and 2N6284 are silicon epitaxial-base NPN power transistor in monolithic Darlington configuration mounted in Jedec TO-3 metal case.

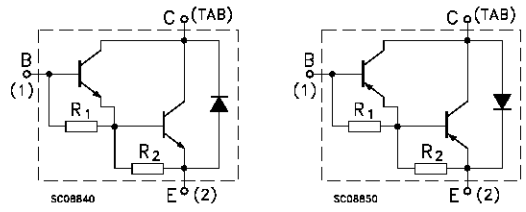
They are inteded for general purpose amplifier and low frequency switching applications.

The complementary PNP types are 2N6286 and 2N6287 respectively.




**TO-3**

**INTERNAL SCHEMATIC DIAGRAM**




$R_1$ Typ. = 8 KΩ $R_2$ Typ. = 60 Ω

**ABSOLUTE MAXIMUM RATINGS**

| Symbol | Parameter | | Value | | Unit |
|---|---|---|---|---|---|
| | | NPN | 2N6283 | 2N6284 | |
| | | PNP | 2N6286 | 2N6287 | |
| $V_{CBO}$ | Collector-Base Voltage ($I_E$ = 0) | | 80 | 100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage ($I_B$ = 0) | | 80 | 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 $T_c \leq 25\ ^oC$ | | 160 | | W |
| $T_{stg}$ | Storage Temperature | | -65 to 200 | | $^oC$ |
| $T_j$ | Max. Operating Junction Temperature | | 200 | | $^oC$ |

For PNP types voltage and current values are negative.

## THERMAL DATA

| | | | | |
|---|---|---|---|---|
| $R_{thj\text{-}case}$ | Thermal Resistance Junction-case | Max | 1.09 | $^oC/W$ |

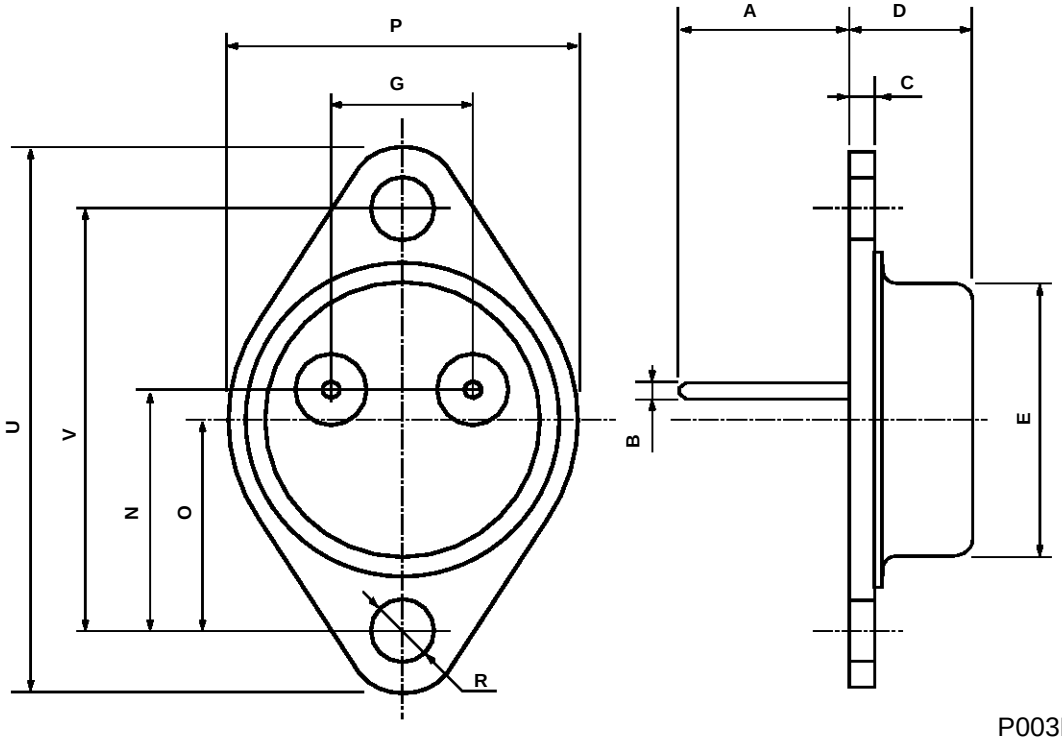
## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25 $^oC$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CEV}$ | Collector Cut-off Current ($V_{BE}$ = -1.5V) | $V_{CE}$ = rated $V_{CEO}$<br>$V_{CE}$ = rated $V_{CEO}$ $T_c$ = 150 $^oC$ | | | 0.5<br>5 | mA<br>mA |
| $I_{CEO}$ | Collector Cut-off Current ($I_B$ = 0) | for **2N6283/2N6286** $V_{CE}$ = 40 V<br>for **2N6284/2N6287** $V_{CE}$ = 50 V | | | 1<br>1 | mA<br>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<br>for **2N6283/2N6286**<br>for **2N6284/2N6287** | <br>80<br>100 | | | <br>V<br>V |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage | $I_C$ = 10 A $I_B$ = 40 mA<br>$I_C$ = 20 A $I_B$ = 200 mA | | | 2<br>3 | V<br>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<br>$I_C$ = 20 A $V_{CE}$ = 3 V | 750<br>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<br>for **NPN types**<br>for **PNP types** | | | <br>400<br>600 | <br>pF<br>pF |

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

## TO-3 (H) MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 11.7 | | | 0.460 | |
| B | 0.96 | | 1.10 | 0.037 | | 0.043 |
| C | | | 1.70 | | | 0.066 |
| D | | | 8.7 | | | 0.342 |
| E | | | 20.0 | | | 0.787 |
| G | | 10.9 | | | 0.429 | |
| N | | 16.9 | | | 0.665 | |
| P | | | 26.2 | | | 1.031 |
| R | 3.88 | | 4.09 | 0.152 | | 0.161 |
| U | | | 39.50 | | | 1.555 |
| V | | 30.10 | | | 1.185 | |

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