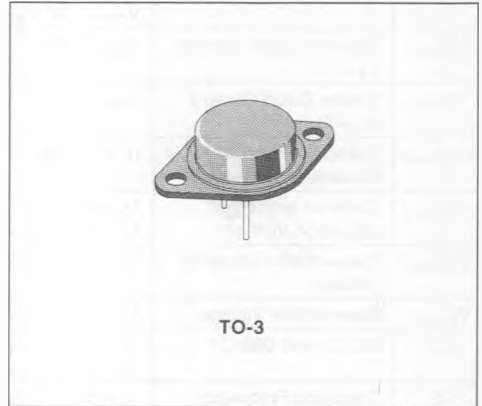


COMPLEMENTARY POWER DARLINGTON

DESCRIPTION

The 2N6053 is a silicon epitaxial base PNP transistor in monolithic Darlington configuration and are mounted in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.

The complementary NPN type is the 2N6055.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | PNP NPN | Value | Unit |
|-----------|---|------------|------------------|------------------|
| | | | 2N6053 2N6055 | |
| V_{CBO} | Collector-base Voltage ($I_E = 0$) | | 60 | V |
| V_{CEO} | Collector-emitter Voltage ($I_B = 0$) | | 60 | V |
| V_{EBO} | Emitter-base Voltage ($I_C = 0$) | | 5 | V |
| I_C | Collector Current | | 8 | A |
| I_{CM} | Collector Peak Current | | 16 | A |
| I_B | Base Current | | 120 | mA |
| P_{tot} | Total Dissipation at $T_C < 25^\circ\text{C}$ | | 100 | W |
| T_{stg} | Storage Temperature | | - 65 to 200 | $^\circ\text{C}$ |
| T_J | Max. Operating Junction Temperature | | 200 | $^\circ\text{C}$ |

For PNP type voltage and current values are negative.

THERMAL DATA

| | | | | |
|----------------|----------------------------------|-----|------|----------------------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | max | 1.75 | $^{\circ}\text{C/W}$ |
|----------------|----------------------------------|-----|------|----------------------|

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|---|--|------------|------|------------|------------------------------|
| I_{CEX} | Collector Cutoff Current | $V_{CE} = 60\text{V}$ $V_{BE} = -1.5\text{V}$ $V_{CE} = 60\text{V}$ $V_{BE} = -1.5\text{V}$ $T_c = 150^{\circ}\text{C}$ | | | 500 5 | μA mA |
| I_{CEO} | Collector Cutoff Current ($I_B = 0$) | $V_{CE} = 30\text{V}$ | | | 0.5 | mA |
| I_{EBO} | Emitter Cutoff Current ($I_C = 0$) | $V_{EB} = 5\text{V}$ | | | 2 | mA |
| $V_{CE(sus)}^*$ | Collector-emitter Sustaining Voltage | $I_C = 100\text{mA}$ | 60 | | | V |
| $V_{CE(sat)}^*$ | Collector-emitter saturation Voltage | $I_C = 4\text{A}$ $I_B = 16\text{mA}$ $I_C = 8\text{A}$ $I_B = 80\text{mA}$ | | | 2 3 | V V |
| $V_{BE(sat)}^*$ | Base-emitter Saturation Voltage | $I_C = 8\text{A}$ $I_B = 80\text{mA}$ | | | 4 | V |
| $V_{BE(on)}^*$ | Base-emitter Voltage | $I_C = 4\text{A}$ $V_{CE} = 3\text{V}$ | | | 2.8 | V |
| h_{FE}^* | DC Current Gain | $I_C = 4\text{A}$ $V_{CE} = 3\text{V}$ $I_C = 8\text{A}$ $V_{CE} = 3\text{V}$ | 750 100 | | 18K | |
| f_T | Transition Frequency | $I_C = 3\text{A}$ $V_{CE} = 3\text{V}$ $f = 1\text{MHz}$ | 4 | | | MHz |
| C_{cbo} | Collector-base Capacitance | $V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1\text{MHz}$ for NPN Type for PNP Type | | | 200 300 | pF pF |

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