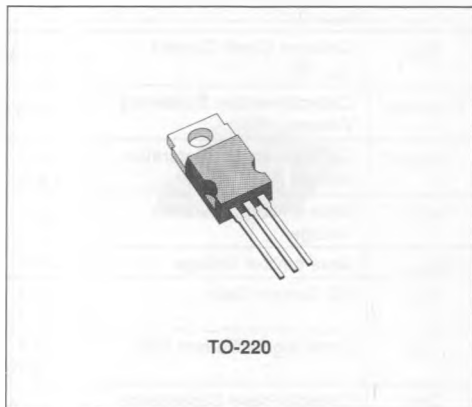
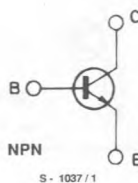
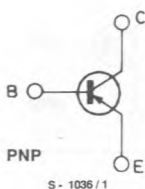


GENERAL PURPOSE
DESCRIPTION

The 2N6045 is a silicon epitaxial-base NPN transistor in monolithic Darlington configuration and is mounted in Jedec TO-220 plastic package. It is intended for use in power linear and switching applications. The complementary PNP type is the 2N6042.


INTERNAL SCHEMATIC DIAGRAMS

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|-------------|------------|
| V_{CBO} | Collector-base Voltage | 100 | V |
| V_{CEO} | Collector-emitter Voltage | 100 | V |
| I_C | Collector Current | 12 | A |
| I_{CM} | Collector Peak Current | 15 | A |
| I_B | Base Current | 0.2 | A |
| P_{Tot} | Total Power Dissipation at $T_{case} \leq 25^\circ C$ | 80 | W |
| T_{stg} | Storage Temperature | - 65 to 150 | $^\circ C$ |
| T_J | Junction Temperature | 150 | $^\circ C$ |

For PNP type voltage and current values are negative.

THERMAL DATA

| | | | | |
|------------------|----------------------------------|-----|------|------|
| $R_{th(j-case)}$ | Thermal Resistance Junction-case | Max | 1.56 | °C/W |
|------------------|----------------------------------|-----|------|------|

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

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|---|--|-------------|------|--------|---------------|
| I_{EBO} | Emitter Cutoff Current ($I_C = 0$) | $V_{EB} = 6\text{ V}$ | | | 2 | mA |
| I_{CEO} | Collector Cutoff Current ($I_B = 0$) | $V_{CE} = 100\text{ V}$ | | | 20 | μA |
| $V_{CE(sus)}^*$ | Collector-emitter Sustaining Voltage | $I_C = 100\text{ mA}$ | 100 | | | V |
| $V_{CE(sat)}^*$ | Collector-emitter Saturation Voltage | $I_C = 3\text{ A}$ $I_B = 12\text{ mA}$ $I_C = 8\text{ A}$ $I_B = 80\text{ mA}$ | | | 2 4 | V V |
| $V_{BE(sat)}^*$ | Base-emitter Saturation Voltage | $I_C = 8\text{ A}$ $I_B = 80\text{ mA}$ | | | 4.5 | V |
| $V_{BE(on)}^*$ | Base-emitter Voltage | $I_C = 4\text{ A}$ $V_{CE} = 4\text{ V}$ | | | 2.8 | V |
| h_{FE} | DC Current Gain | $I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 8\text{ A}$ $V_{CE} = 4\text{ V}$ | 1000 100 | | 20000 | |
| h_{fe} | Small Signal Current Gain | $I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$ $f = 1\text{ MHz}$ | 4 | | | |
| C_{CBO} | Collector-base Capacitance ($I_E = 0$) | $V_{CB} = 10\text{ V}$ $f = 0.1\text{ MHz}$ | | | 300 | pF |

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