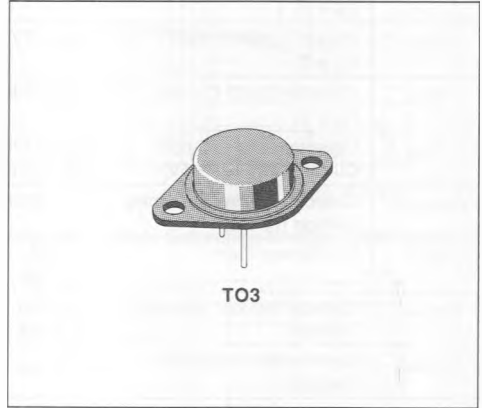


COMPLEMENTARY HIGH POWER TRANSISTORS

DESCRIPTION

The 2N5629 (NPN) and 2N6029 (PNP) are complementary silicon epitaxial-base transistors in Jedec TO-3 metal case. They are intended for high power audio amplifier applications and switching regular circuits.



INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|-------------|------------|
| V_{CE0} | Collector-emitter Voltage ($I_B = 0$) | 100 | V |
| V_{CBO} | Collector-base Voltage ($I_E = 0$) | 100 | V |
| V_{EBO} | Emitter-base Voltage ($I_C = 0$) | 7 | V |
| I_C | Collector Current | 16 | A |
| I_{CM} | Collector Peak Current | 20 | A |
| I_B | Base Current | 5 | A |
| P_{tot} | Total Power Dissipation at $T_{case} \leq 25^\circ C$ | 200 | W |
| T_{stg} | Storage Temperature | - 65 to 200 | $^\circ C$ |
| T_J | Junction Temperature | 200 | $^\circ C$ |

For PNP type voltage and current values are negative.

THERMAL DATA

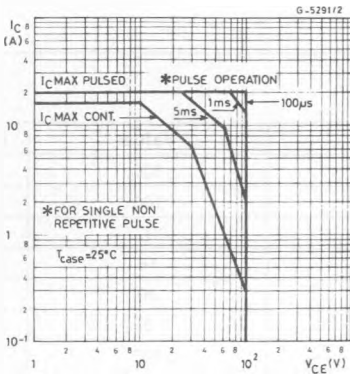
| | | | | |
|------------------|----------------------------------|-----|-------|------|
| $R_{th\ j-case}$ | Thermal Resistance Junction-case | Max | 0.875 | °C/W |
|------------------|----------------------------------|-----|-------|------|

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

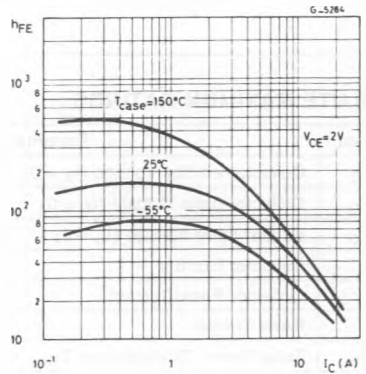
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------|---|---|---------|------|-------------|----------|
| I_{CEO} | Collector Cutoff Current ($I_B = 0$) | $V_{CE} = 50V$ | | | 1 | mA |
| I_{EBO} | Emitter Cutoff Current ($I_C = 0$) | $V_{EB} = 7V$ | | | 1 | mA |
| I_{CBO} | Collector Cutoff Current ($I_E = 0$) | $V_{CB} = 100V$ | | | 1 | mA |
| I_{CEV} | Collector-emitter Cutoff Current ($V_{BE} = -1.5V$) | $V_{CE} = 100V$ $V_{CE} = 100V$ $T_{case} = 150^{\circ}C$ | | | 1 5 | mA mA |
| $V_{CEO(sus)}^*$ | Collector-emitter Sustaining Voltage ($I_B = 0$) | $I_C = 200mA$ | 100 | | | V |
| h_{FE}^* | DC Current Gain | $I_C = 8A$ $V_{CE} = 2V$ $I_C = 16A$ $V_{CE} = 2V$ | 25 4 | | 100 | |
| $V_{CE(sat)}^*$ | Collector-emitter Saturation Voltage | $I_C = 10A$ $I_B = 1A$ $I_C = 16A$ $I_B = 4A$ | | | 1 2 | V V |
| $V_{BE(sat)}^*$ | Base-emitter Saturation Voltage | $I_C = 10A$ $I_B = 1A$ | | | 1.8 | V |
| V_{BE}^* | Base-emitter Voltage | $I_C = 8A$ $V_{CE} = 2V$ | | | 1.5 | V |
| f_T | Transition Frequency | $I_C = 1A$ $V_{CE} = 20V$ $f = 0.5MHz$ | 1 | | | MHz |
| C_{CBO} | Collector-base Capacitance | $V_{CB} = 10V$ $I_E = 0$ $f = 0.1MHz$ for 2N6029 | | | 500 1000 | pF pF |
| h_{fe} | Small Signal Current Gain | $I_C = 4A$ $V_{CE} = 10V$ $f = 1KHz$ | 15 | | | |

* Pulsed : pulse duration = 300 μs , duty cycle < 2 %.
For PNP type voltage and current values are negative.

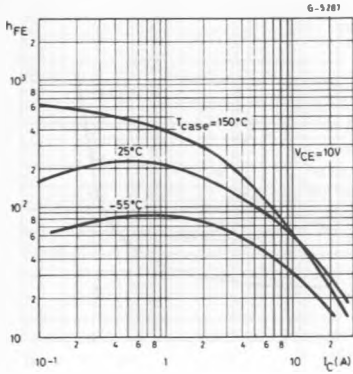
Safe Operating Areas.



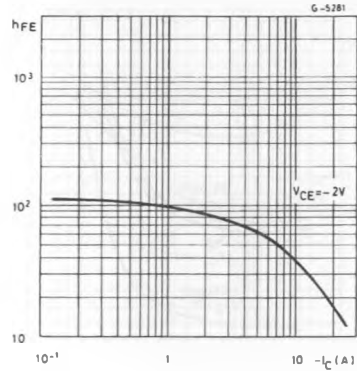
DC Current Gain (NPN type).



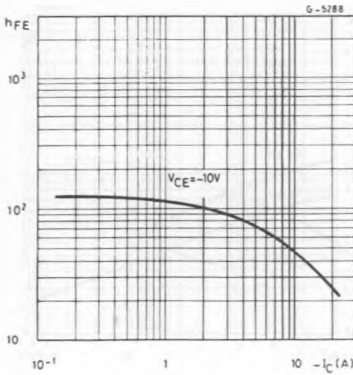
DC Current Gain (NPN type).



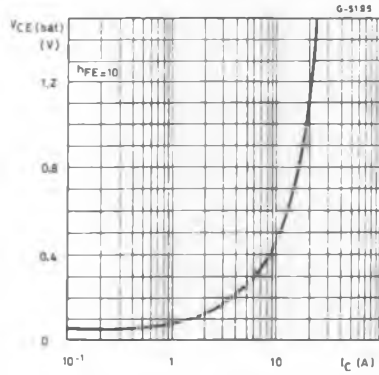
DC Current Gain (PNP type).



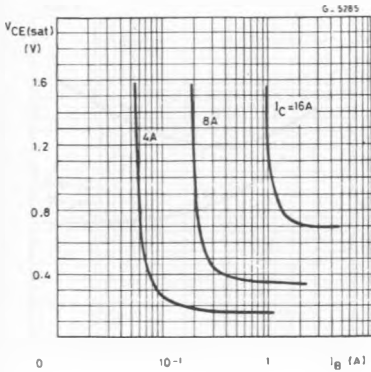
DC Current Gain (PNP type).



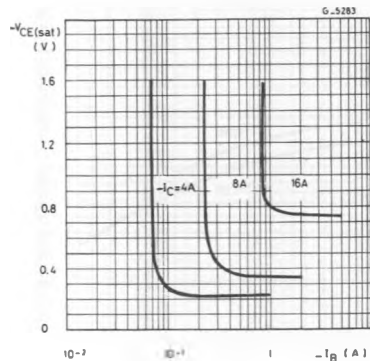
Collector-emitter Saturation Voltage (PNP type).



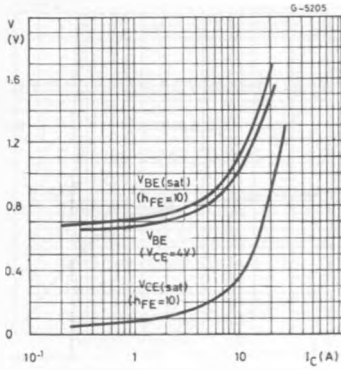
Collector-emitter Saturation Voltage (NPN type).



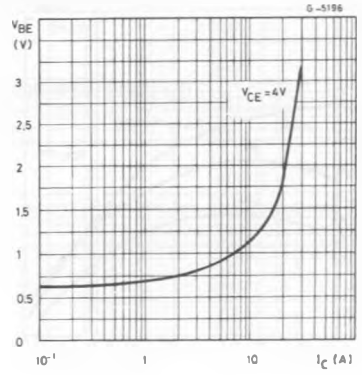
Collector-emitter Saturation Voltage (PNP type).



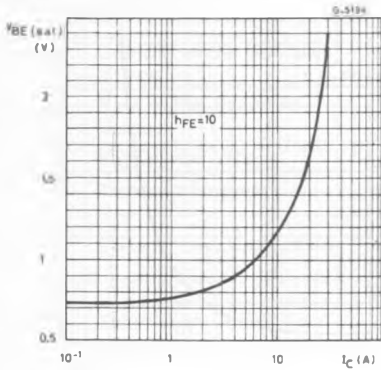
Saturation Voltage (PNP type).



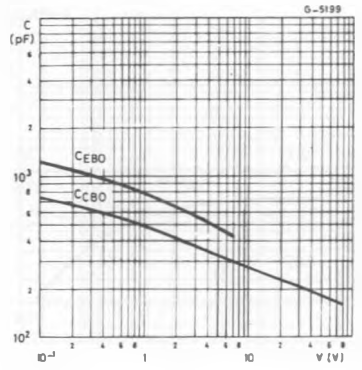
Base-emitter Voltage (PNP type).



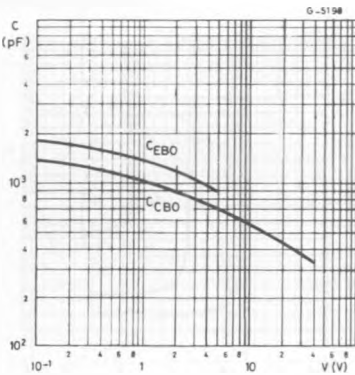
Base-emitter Saturation Voltage (PNP type).



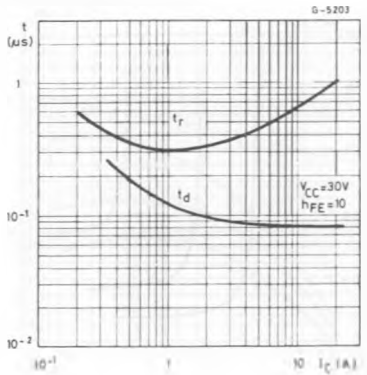
Capacitances (NPN type).



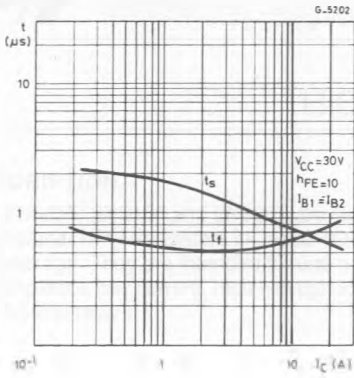
Capacitances (PNP type).



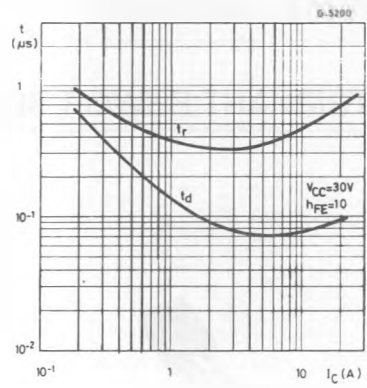
Turn-on Time (NPN type).



Turn-off Time (NPN type).



Turn-on Time (PNP type).



Turn-off Time (PNP type).

