

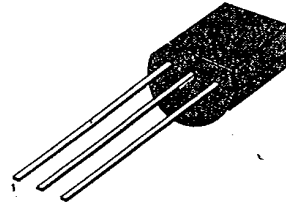
**2N6520****PNP EPITAXIAL SILICON TRANSISTOR**

T-29-21

**HIGH VOLTAGE TRANSISTOR****ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

| Characteristic                  | Symbol    | Rating  | Unit                 |
|---------------------------------|-----------|---------|----------------------|
| Collector-Base Voltage          | $V_{CBO}$ | -350    | V                    |
| Collector-Emitter Voltage       | $V_{CEO}$ | -350    | V                    |
| Emitter-Base Voltage            | $V_{EBO}$ | -5      | V                    |
| Collector Current               | $I_C$     | -500    | mA                   |
| Base Current                    | $I_B$     | -250    | mA                   |
| Collector Dissipation           | $P_C$     | 0.625   | W                    |
| Derate above $25^\circ\text{C}$ |           | 5       | mW/ $^\circ\text{C}$ |
| Junction Temperature            | $T_J$     | 150     | $^\circ\text{C}$     |
| Storage Temperature             | $T_{stg}$ | -55~150 | $^\circ\text{C}$     |

TO-92



1. Emitter 2. Base 3. Collector

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

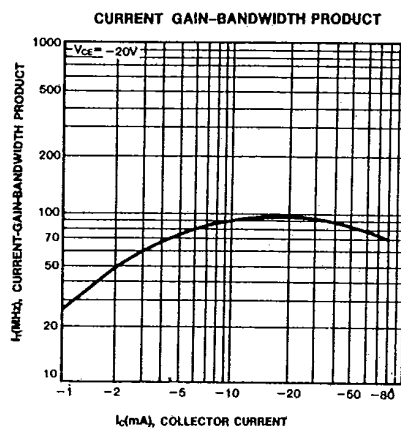
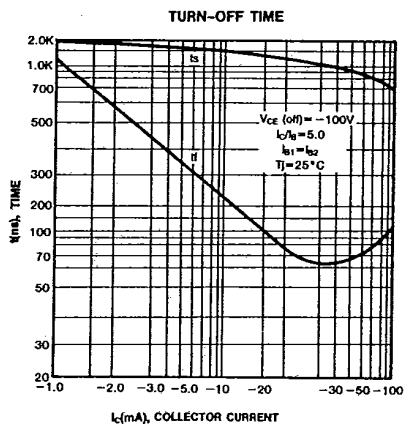
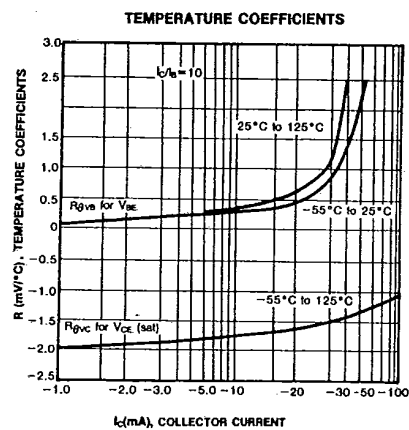
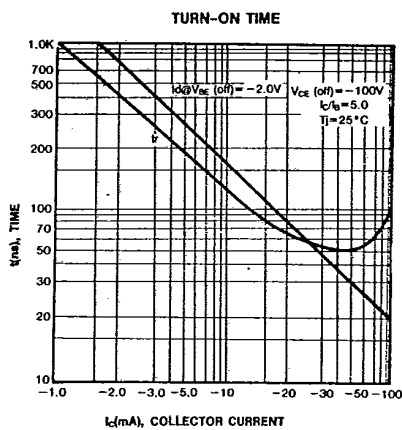
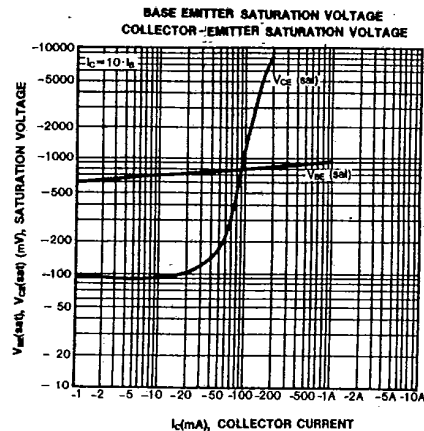
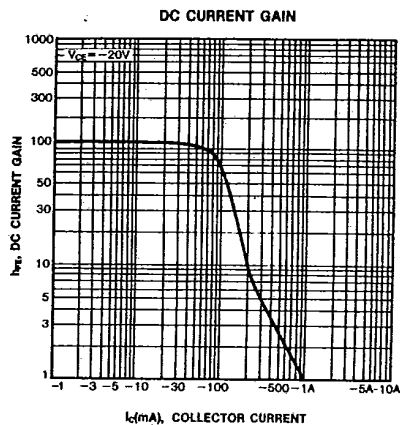
| Characteristic                       | Symbol        | Test Condition                                                                                       | Min  | Max   | Unit |
|--------------------------------------|---------------|------------------------------------------------------------------------------------------------------|------|-------|------|
| Collector Base Breakdown Voltage     | $BV_{CBO}$    | $I_C = -100\mu\text{A}$ , $I_E = 0$                                                                  | -350 |       | V    |
| Collector Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C = -1\text{mA}$ , $I_B = 0$                                                                      | -350 |       | V    |
| Emitter Base Breakdown Voltage       | $BV_{EBO}$    | $I_E = -10\mu\text{A}$ , $I_C = 0$                                                                   | -5   |       | V    |
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB} = -250\text{V}$ , $I_E = 0$                                                                  |      | -50   | nA   |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{EB} = -4\text{V}$ , $I_C = 0$                                                                    |      | -50   | nA   |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = -10\text{V}$ , $I_C = -1\text{mA}$                                                         | 20   |       |      |
|                                      |               | $V_{CE} = -10\text{V}$ , $I_C = -10\text{mA}$                                                        | 30   |       |      |
|                                      |               | $V_{CE} = -10\text{V}$ , $I_C = -30\text{mA}$                                                        | 30   | 200   |      |
|                                      |               | $V_{CE} = -10\text{V}$ , $I_C = -50\text{mA}$                                                        | 20   | 200   |      |
|                                      |               | $V_{CE} = -10\text{V}$ , $I_C = -100\text{mA}$                                                       | 15   |       |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -10\text{mA}$ , $I_B = -1\text{mA}$                                                           |      | -0.30 | V    |
|                                      |               | $I_C = -20\text{mA}$ , $I_B = -2\text{mA}$                                                           |      | -0.35 | V    |
|                                      |               | $I_C = -30\text{mA}$ , $I_B = -3\text{mA}$                                                           |      | -0.50 | V    |
|                                      |               | $I_C = -50\text{mA}$ , $I_B = -5\text{mA}$                                                           |      | -1    | V    |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = -10\text{mA}$ , $I_B = -1\text{mA}$                                                           |      | -0.75 | V    |
|                                      |               | $I_C = -20\text{mA}$ , $I_B = -2\text{mA}$                                                           |      | -0.85 | V    |
|                                      |               | $I_C = -30\text{mA}$ , $I_B = -3\text{mA}$                                                           |      | -0.90 | V    |
| Base Emitter On Voltage              | $V_{BE(on)}$  | $V_{CE} = -10\text{V}$ , $I_C = -100\text{mA}$                                                       |      | -2    | V    |
| Current Gain Bandwidth Product       | $f_T$         | $V_{CE} = -20\text{V}$ , $I_C = -10\text{mA}$ , $f = 20\text{MHz}$                                   | 40   | 200   | MHz  |
| Collector Base Capacitance           | $C_{cb}$      | $V_{CB} = -20\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$                                               |      | 6     | pF   |
| Emitter Base Capacitance             | $C_{eb}$      | $V_{EB} = -0.5\text{V}$ , $I_C = 0$ , $f = 1\text{MHz}$                                              |      | 100   | pF   |
| Turn On Time                         | $t_{on}$      | $V_{BE(off)} = -2\text{V}$ , $V_{CC} = -100\text{V}$<br>$I_C = -50\text{mA}$ , $I_B1 = -10\text{mA}$ |      | 200   | ns   |
| Turn Off Time                        | $t_{off}$     | $V_{CC} = -100\text{V}$ , $I_C = -50\text{mA}$<br>$I_B1 = I_B2 = -10\text{mA}$                       |      | 3.5   | ns   |

\* Pulse Test:  $PWS \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ 

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**2N6520****PNP EPITAXIAL SILICON TRANSISTOR**

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