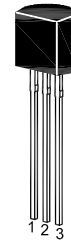


# BF420 / 422

## NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.



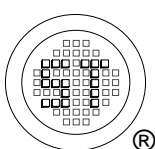
1. Emitter 2. Collector 3. Base  
TO-92 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

| Parameter                 | Symbol         | Value     | Unit          |                  |
|---------------------------|----------------|-----------|---------------|------------------|
| Collector Base Voltage    | BF420<br>BF422 | $V_{CBO}$ | 300<br>250    | V                |
| Collector Emitter Voltage | BF420<br>BF422 | $V_{CEO}$ | 300<br>250    | V                |
| Emitter Base Voltage      |                | $V_{EBO}$ | 5             | V                |
| Collector Current         |                | $I_C$     | 500           | mA               |
| Power Dissipation         |                | $P_{tot}$ | 625           | mW               |
| Junction Temperature      |                | $T_j$     | 150           | $^\circ\text{C}$ |
| Storage Temperature Range |                | $T_{stg}$ | - 55 to + 150 | $^\circ\text{C}$ |

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter                                                                                        | Symbol         | Min.          | Max.       | Unit   |     |
|--------------------------------------------------------------------------------------------------|----------------|---------------|------------|--------|-----|
| DC Current Gain<br>at $V_{CE} = 20\text{ V}$ , $I_C = 25\text{ mA}$                              | $h_{FE}$       | 50            | -          | -      |     |
| Collector Base Cutoff Current<br>at $V_{CB} = 200\text{ V}$                                      | $I_{CBO}$      | -             | 10         | nA     |     |
| Emitter Base Cutoff Current<br>at $V_{EB} = 5\text{ V}$                                          | $I_{EBO}$      | -             | 100        | nA     |     |
| Collector Base Breakdown Voltage<br>at $I_C = 100\text{ }\mu\text{A}$                            | BF420<br>BF422 | $V_{(BR)CBO}$ | 300<br>250 | -<br>- | V   |
| Collector Emitter Breakdown Voltage<br>at $I_C = 1\text{ mA}$                                    | BF420<br>BF422 | $V_{(BR)CEO}$ | 300<br>250 | -<br>- | V   |
| Emitter Base Breakdown Voltage<br>at $I_E = 100\text{ }\mu\text{A}$                              |                | $V_{(BR)EBO}$ | 5          | -      | V   |
| Collector Emitter Saturation Voltage<br>at $I_C = 20\text{ mA}$ , $I_B = 2\text{ mA}$            |                | $V_{CE(sat)}$ | -          | 0.5    | V   |
| Base Emitter Saturation Voltage<br>at $I_C = 20\text{ mA}$ , $I_B = 2\text{ mA}$                 |                | $V_{BE(sat)}$ | -          | 2      | V   |
| Gain Bandwidth Product<br>at $V_{CE} = 10\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 20\text{ MHz}$ |                | $f_T$         | 60         | -      | MHz |
| Collector Output Capacitance<br>at $V_{CB} = 20\text{ V}$ , $f = 1\text{ MHz}$                   | BF420<br>BF422 | $C_{ob}$      | -<br>-     | 3<br>4 | pF  |



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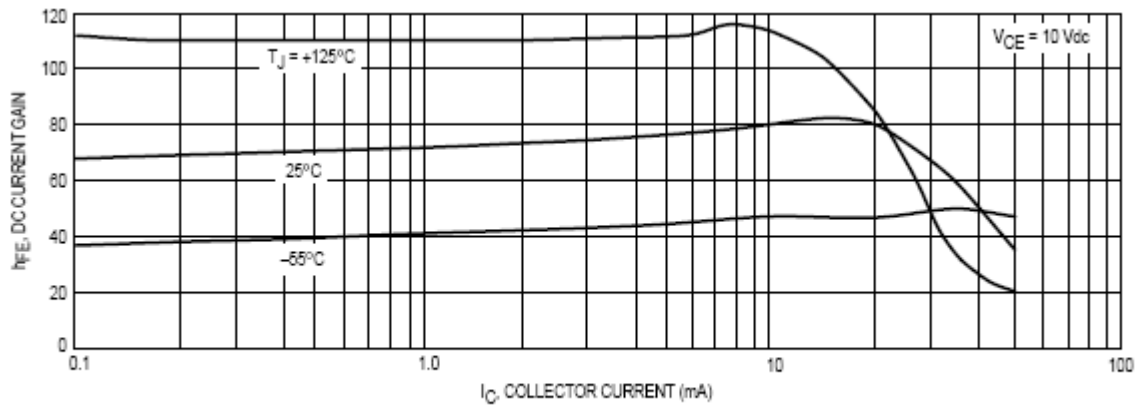


Figure 1. DC Current Gain

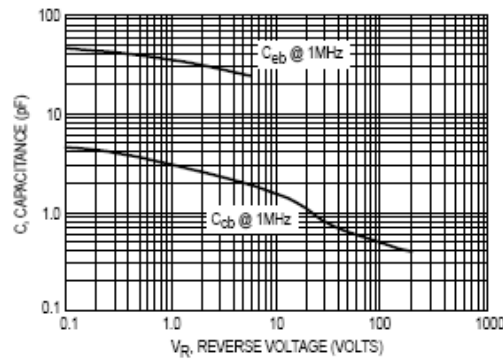


Figure 2. Capacitance

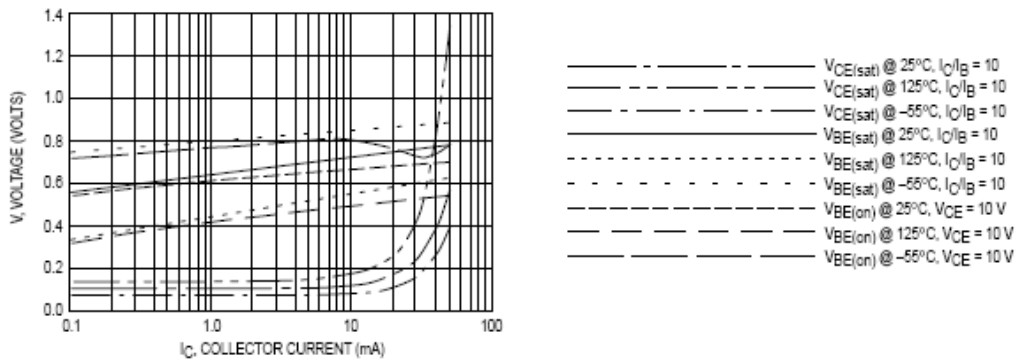
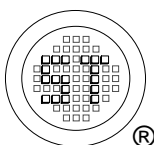


Fig 3. "ON" Voltages



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