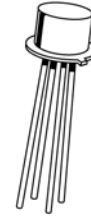


## Small Signal NPN Transistors

### TO-72 Case



| TYPE NO. | DESCRIPTION       | V <sub>CBO</sub><br>(V) | V <sub>CEO</sub><br>(V) | V <sub>EBO</sub><br>(V) | I <sub>CBO</sub> @<br>(μA) | V <sub>CB</sub><br>(V) | h <sub>FE</sub> |       | @ I <sub>C</sub><br>(mA) | @ V <sub>CE</sub><br>(V) | V <sub>CE</sub> (SAT) @ I <sub>C</sub> |     | f <sub>T</sub><br>(MHz) | C <sub>ob</sub><br>*C <sub>cb</sub><br>(pF) |
|----------|-------------------|-------------------------|-------------------------|-------------------------|----------------------------|------------------------|-----------------|-------|--------------------------|--------------------------|----------------------------------------|-----|-------------------------|---------------------------------------------|
|          |                   | MIN                     | MIN                     | MIN                     | MAX                        |                        | MIN             | MAX   |                          |                          | MAX                                    |     | MIN                     | MAX                                         |
| 2N917    | RF/IF OSCILLATOR  | 30                      | 15                      | 3.0                     | 0.001                      | 15                     | 20              | --    | 3.0                      | 1.0                      | 0.5                                    | 3.0 | 500                     | 1.7                                         |
| 2N917A   | RF/IF OSCILLATOR  | 30                      | 15                      | 3.0                     | --                         | --                     | 20              | 200   | 3.0                      | 10                       | --                                     | --  | 600                     | 1.7                                         |
| 2N918    | RF/IF OSCILLATOR  | 30                      | 15                      | 3.0                     | 0.01                       | 15                     | 20              | --    | 3.0                      | 1.0                      | 0.4                                    | 10  | 600                     | 1.7                                         |
| 2N998    | DARLINGTON        | 100                     | 60                      | 15                      | 0.01                       | 90                     | 1,600           | 8,000 | 10                       | 5.0                      | 1.8                                    | 100 | 60                      | 30                                          |
| 2N2857   | VHF/UHF OSC       | 30                      | 15                      | 2.5                     | 0.01                       | 15                     | 30              | 150   | 3.0                      | 1.0                      | --                                     | --  | 1,000                   | 1.0*                                        |
| 2N2865   | RF/IF OSCILLATOR  | 25                      | 13                      | 3.0                     | 0.01                       | 15                     | 20              | 200   | 4.0                      | 10                       | 0.4                                    | 10  | 600                     | 2.5                                         |
| 2N3478   | VHF/UHF LOW NOISE | 30                      | 15                      | 2.0                     | 0.02                       | 1.0                    | 25              | 150   | 2.0                      | 8.0                      | --                                     | --  | 750                     | 1.0*                                        |
| 2N3839   | VHF/UHF AMPL/OSC  | 30                      | 15                      | 2.5                     | 0.01                       | 15                     | 30              | 150   | 3.0                      | 1.0                      | --                                     | --  | 1,000                   | 1.0*                                        |
| 2N5179   | VHF/UHF AMPL/OSC  | 20                      | 12                      | 2.5                     | 0.02                       | 15                     | 25              | 250   | 3.0                      | 1.0                      | 0.4                                    | 10  | 900                     | 1.0*                                        |
| BFY90    | VHF/UHF AMPL/OSC  | 30                      | 15                      | 2.5                     | 0.01                       | 15                     | 20              | 125   | 25                       | 1.0                      | --                                     | --  | 1,000                   | 1.5*                                        |

Shaded areas indicate Darlington.

## Dual Transistors

### TO-71 Case

P<sub>D</sub> @ T<sub>A</sub>=25°C=360mW Total (Both Die Equal Power)



| TYPE NO. | DESCRIPTION   | V <sub>CBO</sub><br>(V) | V <sub>CEO</sub><br>(V) | V <sub>EBO</sub><br>(V) | I <sub>CBO</sub> @<br>(nA) | V <sub>CB</sub><br>(V) | h <sub>FE</sub> |     | @ I <sub>C</sub><br>(mA) | @ V <sub>CE</sub><br>(V) | V <sub>CE</sub> (SAT) @ I <sub>C</sub> |     | MATCHING             |                         |
|----------|---------------|-------------------------|-------------------------|-------------------------|----------------------------|------------------------|-----------------|-----|--------------------------|--------------------------|----------------------------------------|-----|----------------------|-------------------------|
|          |               | MIN                     | MIN                     | MIN                     | MAX                        |                        | MIN             | MAX |                          |                          | MAX                                    |     | h <sub>FE</sub><br>% | V <sub>BE</sub><br>(mV) |
| CEN741   | NPN LOW NOISE | 45                      | 45                      | 6.0                     | 10                         | 45                     | 150             | 600 | 0.01                     | 5.0                      | 0.35                                   | 1.0 | 20                   | 5.0                     |
| CEN832   | PNP LOW NOISE | 60                      | 60                      | 5.0                     | 10                         | 50                     | 150             | 450 | 1.0                      | 5.0                      | 0.25                                   | 1.0 | 20                   | 5.0                     |