

# Small Signal Transistors

## TO-92 Case (Continued)



TO-92



TO-92-18R

| TYPE NO. | DESCRIPTION      | LEAD CODE | V <sub>CB0</sub> | V <sub>CEO</sub> | V <sub>EBO</sub> | I <sub>CB0</sub> @       | V <sub>CB</sub> | h <sub>FE</sub> |        | @ V <sub>CE</sub> | @ I <sub>C</sub> | V <sub>CE</sub> (SAT) @ I <sub>C</sub> |      | C <sub>ob</sub>         | f <sub>T</sub> | NF   | t <sub>off</sub> |
|----------|------------------|-----------|------------------|------------------|------------------|--------------------------|-----------------|-----------------|--------|-------------------|------------------|----------------------------------------|------|-------------------------|----------------|------|------------------|
|          |                  |           | (V)              | (V)              | (V)              | (nA)                     | (V)             | MIN             | MAX    | (V)               | (mA)             | (V)                                    | (mA) | (pF)                    | (MHz)          | (dB) |                  |
|          |                  |           | MIN              | MIN              | MAX              | *I <sub>CES</sub><br>MAX |                 |                 |        |                   |                  |                                        |      | *C <sub>rb</sub><br>MAX | *TYP<br>MIN    | MAX  | MAX              |
| 2N4401   | NPN AMPL/SWITCH  | EBC       | 60               | 40               | 6.0              | 100*                     | 35              | 100             | 300    | 1.0               | 150              | 0.75                                   | 500  | 6.5                     | 250            | --   | 255              |
| 2N4402   | PNP AMPL/SWITCH  | EBC       | 40               | 40               | 5.0              | 100*                     | 35              | 50              | 150    | 2.0               | 150              | 0.75                                   | 500  | 8.5                     | 150            | -    | 255              |
| 2N4403   | PNP AMPL/SWITCH  | EBC       | 40               | 40               | 5.0              | 100*                     | 35              | 100             | 300    | 2.0               | 150              | 0.75                                   | 500  | 8.5                     | 200            | --   | 255              |
| 2N4410   | NPN LOW NOISE    | EBC       | 120              | 80               | 5.0              | 10                       | 100             | 60              | 400    | 1.0               | 10               | 0.20                                   | 1.0  | 12                      | 60             | --   | --               |
| 2N4424   | NPN LOW NOISE    | ECB       | 60               | 40               | 5.0              | 30                       | 40              | 180             | 540    | 0.45              | 0.30             | 50                                     | --   | --                      | --             | --   | --               |
| 2N4952   | NPN AMPL/SWITCH  | ECB       | 60               | 30               | 5.0              | 50                       | 40              | 100             | 300    | 10                | 150              | 0.30                                   | 150  | 8.0                     | 250            | --   | 400              |
| 2N4953   | NPN AMPL/SWITCH  | ECB       | 60               | 30               | 5.0              | 50                       | 40              | 200             | 600    | 10                | 150              | 0.30                                   | 150  | 8.0                     | 250            | --   | 400              |
| 2N5086   | PNP LOW NOISE    | EBC       | 50               | 50               | 3.0              | 10                       | 10              | 150             | 500    | 5.0               | 0.10             | 0.30                                   | 10   | 4.0                     | 40             | 3.0  | --               |
| 2N5087   | PNP LOW NOISE    | EBC       | 50               | 50               | 3.0              | 10                       | 10              | 250             | 800    | 5.0               | 0.10             | 0.30                                   | 10   | 4.0                     | 40             | 2.0  | --               |
| 2N5088   | NPN LOW NOISE    | EBC       | 35               | 30               | 4.5              | 50                       | 20              | 300             | 900    | 5.0               | 0.10             | 0.50                                   | 10   | 4.0                     | 50             | 3.0  | --               |
| 2N5089   | NPN LOW NOISE    | EBC       | 30               | 25               | 4.5              | 50                       | 15              | 400             | 1,200  | 5.0               | 0.10             | 0.50                                   | 10   | 4.0                     | 50             | 2.0  | --               |
| 2N5172   | NPN LOW NOISE    | ECB       | 25               | 25               | 5.0              | 100                      | 25              | 100             | 500    | 10                | 10               | 0.25                                   | 10   | 13                      | 200*           | --   | --               |
| 2N5209   | NPN LOW NOISE    | EBC       | 50               | 50               | 4.5              | 50                       | 35              | 100             | 300    | 5.0               | 0.10             | 0.70                                   | 10   | 4.0                     | 30             | 3.0  | --               |
| 2N5210   | NPN LOW NOISE    | EBC       | 50               | 50               | 4.5              | 50                       | 35              | 200             | 600    | 5.0               | 0.10             | 0.70                                   | 10   | 4.0                     | 30             | 2.0  | --               |
| 2N5223   | NPN AMPL/SWITCH  | EBC       | 25               | 20               | 3.0              | 100                      | 10              | 50              | 800    | 0.70              | 10               | 1.20                                   | 10   | 4.0                     | 150            | --   | --               |
| 2N5225   | NPN AMPL/SWITCH  | EBC       | 25               | 25               | 4.0              | 300                      | 15              | 30              | 600    | 10                | 50               | 0.80                                   | 100  | 20                      | 50             | --   | --               |
| 2N5226   | PNP AMPL/SWITCH  | EBC       | 25               | 25               | 4.0              | 300                      | 15              | 30              | 600    | 10                | 50               | 0.80                                   | 100  | 8.0                     | 50             | --   | --               |
| 2N5227   | PNP LOW NOISE    | EBC       | 30               | 30               | 3.0              | 100                      | 10              | 50              | 700    | 10                | 2.0              | 0.40                                   | 10   | 10                      | 100            | --   | 5.0              |
| 2N5232A  | NPN LOW NOISE    | ECB       | 70               | 50               | 5.0              | 30                       | 50              | 250             | 500    | 5.0               | 2.0              | 0.125                                  | 10   | 4.0                     | --             | 5.0  | --               |
| 2N5306   | NPN DARLINGTON   | ECB       | 25               | 25               | 12               | 100                      | 25              | 7,000           | 70,000 | 5.0               | 2.0              | 1.40                                   | 200  | 10                      | 60             | --   | --               |
| 2N5308   | NPN DARLINGTON   | ECB       | 40               | 40               | 12               | 100                      | 40              | 7,000           | 70,000 | 5.0               | 2.0              | 1.40                                   | 200  | 10                      | 60             | --   | --               |
| 2N5356   | PNP AMPL/SWITCH  | ECB       | 25               | 25               | 4.0              | 100                      | 25              | 250             | 500    | 1.0               | 50               | 0.25                                   | 50   | 8.0                     | 250*           | --   | --               |
| 2N5366   | PNP AMPL/SWITCH  | ECB       | 40               | 40               | 4.0              | 100                      | 40              | 100             | 300    | 1.0               | 50               | 0.25                                   | 50   | 8.0                     | 250*           | --   | --               |
| 2N5367   | PNP AMPL/SWITCH  | ECB       | 40               | 40               | 4.0              | 100                      | 40              | 250             | 500    | 1.0               | 50               | 0.25                                   | 50   | 8.0                     | 250*           | --   | --               |
| 2N5374   | PNP AMPL/SWITCH  | CBE†      | 60               | 30               | 5.0              | 50                       | 40              | 200             | 400    | 10                | 150              | 0.30                                   | 150  | 10                      | 150            | --   | --               |
| 2N5375   | PNP AMPL/SWITCH  | CBE†      | 40               | 30               | 5.0              | 50                       | 30              | 40              | 400    | 10                | 150              | 0.30                                   | 150  | 10                      | 150            | --   | --               |
| 2N5376   | NPN AMPL/SWITCH  | CBE†      | 60               | 30               | 5.0              | 10                       | 30              | 120             | --     | 5.0               | 1.0              | --                                     | --   | 8.0                     | --             | --   | --               |
| 2N5377   | NPN AMPL/SWITCH  | CBE†      | 60               | 30               | 5.0              | 10                       | 30              | 120             | --     | 5.0               | 1.0              | --                                     | --   | 8.0                     | --             | --   | --               |
| 2N5381   | NPN AMPL/SWITCH  | CBE†      | 60               | 40               | 6.0              | 50                       | 30              | 100             | 300    | 1.0               | 10               | 12                                     | 10   | 4.0                     | 300            | 5.0  | --               |
| 2N5383   | PNP AMPL/SWITCH  | CBE†      | 40               | 40               | 5.0              | 50                       | 30              | 100             | 300    | 1.0               | 10               | 0.25                                   | 10   | 4.5                     | 250            | 4.0  | --               |
| 2N5400   | PNP HIGH VOLTAGE | EBC       | 130              | 120              | 5.0              | 100                      | 100             | 40              | 180    | 5.0               | 10               | 0.50                                   | 50   | 6.0                     | 100            | 8.0  | --               |
| 2N5401   | PNP HIGH VOLTAGE | EBC       | 160              | 150              | 5.0              | 50                       | 120             | 60              | 240    | 5.0               | 10               | 0.50                                   | 50   | 6.0                     | 100            | 8.0  | --               |
| 2N5447   | PNP AMPL/SWITCH  | CBE†      | 40               | 25               | 5.0              | 100                      | 20              | 60              | 300    | 5.0               | 50               | 0.25                                   | 50   | 12                      | 100            | --   | --               |
| 2N5448   | PNP AMPL/SWITCH  | CBE†      | 50               | 30               | 5.0              | 100                      | 20              | 30              | 150    | 5.0               | 50               | 0.25                                   | 50   | 12                      | 100            | --   | --               |
| 2N5449   | NPN AMPL/SWITCH  | CBE†      | 50               | 30               | 5.0              | 100                      | 20              | 100             | 300    | 2.0               | 50               | 0.6                                    | 100  | 12                      | 100            | --   | --               |
| 2N5450   | NPN AMPL/SWITCH  | CBE†      | 50               | 30               | 5.0              | 100                      | 20              | 50              | 150    | 2.0               | 50               | 0.8                                    | 100  | 12                      | 100            | --   | --               |
| 2N5451   | NPN AMPL/SWITCH  | CBE†      | 40               | 20               | 5.0              | 100                      | 20              | 30              | 600    | 2.0               | 50               | 1.0                                    | 100  | 12                      | 100            | --   | --               |
| 2N5550   | NPN HIGH VOLTAGE | EBC       | 160              | 140              | 6.0              | 100                      | 100             | 60              | 250    | 5.0               | 10               | 0.25                                   | 50   | 6.0                     | 100            | 10   | --               |
| 2N5551   | NPN HIGH VOLTAGE | EBC       | 180              | 160              | 6.0              | 50                       | 120             | 80              | 250    | 5.0               | 10               | 0.20                                   | 50   | 6.0                     | 100            | 8.0  | --               |
| 2N5769   | NPN SAT SWITCH   | EBC       | 40               | 15               | 4.5              | 400                      | 20              | 40              | 120    | 0.35              | 10               | 0.50                                   | 100  | 4.0                     | 500            | --   | 18               |
| 2N5770   | NPN RF OSC       | EBC       | 30               | 15               | 3.0              | 10                       | 15              | 50              | 200    | 1.0               | 8.0              | 0.40                                   | 10   | 1.1                     | 800            | --   | --               |
| 2N5771   | PNP SAT SWITCH   | EBC       | 15               | 15               | 4.5              | 10                       | 8.0             | 50              | 120    | 0.30              | 10               | 0.60                                   | 50   | 3.0                     | 850            | --   | 20               |
| 2N5772   | NPN SAT SWITCH   | EBC       | 40               | 15               | 5.0              | 500*                     | 20              | 30              | 120    | 0.40              | 30               | 0.50                                   | 300  | 5.0                     | 350            | --   | 28               |
| 2N5810   | NPN AMPL/SWITCH  | CBE†      | 35               | 25               | 5.0              | 100                      | 25              | 60              | 200    | 2.0               | 2.0              | 0.75                                   | 500  | 15                      | 100            | --   | --               |
| 2N5811   | PNP AMPL/SWITCH  | CBE†      | 35               | 25               | 5.0              | 100                      | 25              | 60              | 200    | 2.0               | 2.0              | 0.75                                   | 500  | 15                      | 100            | --   | --               |

Devices are available lead formed,  
See pages 216 thru 219 for details.  
Also available in Ammopack or Tape & Reel,  
See pages 230 thru 235 for details.  
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