

## Small Signal Transistors

TO-39 Case (Continued)



| TYPE NO. | DESCRIPTION      | V <sub>CBO</sub> | V <sub>CEO</sub>     | V <sub>EBO</sub> | I <sub>CBO</sub> @ | V <sub>CB</sub> | $\beta_{FE}$ | @ I <sub>C</sub> | @ V <sub>CE</sub> | V <sub>CE (SAT)</sub> @ I <sub>C</sub> | f <sub>T</sub> | C <sub>ob</sub> | t <sub>on</sub> | t <sub>off</sub> | NF   |        |
|----------|------------------|------------------|----------------------|------------------|--------------------|-----------------|--------------|------------------|-------------------|--|----------------|-----------------|-----------------|------------------|------|--------|
|          |                  | (V)              | (*V <sub>CER</sub> ) | (V)              | (μA)               | (*ICEO)         |              |                  |                   |  |                |                 |                 |                  |      | (*dB)  |
|          |                  | MIN              | MIN                  | MIN              |                    |                 |              |                  |                   |  |                |                 |                 |                  |      |        |
| BFX86    | NPN AMPL/SWITCH  | 45               | 35                   | 6.0              | 0.50               | 30              | 70           | 300              | 150               | 10                                     | 1.00           | 500             | --              | --               | --   | --     |
| BFX87    | PNP AMPL/SWITCH  | 50               | 50                   | 4.0              | 0.50               | 50              | 40           | --               | 150               | 10                                     | 0.40           | 150             | 100             | 12               | 60   | 150    |
| BFX88    | PNP AMPL/SWITCH  | 40               | 40                   | 4.0              | 0.50               | 40              | 40           | --               | 150               | 10                                     | 0.40           | 150             | 12              | 60               | 150  | --     |
| BFX98    | NPN AMPL/SWITCH  | 150              | 150                  | 6.0              | 0.10               | 100             | 15           | --               | 100               | 10                                     | 1.00           | 25              | --              | --               | --   | --     |
| BFY50    | NPN AMPL/SWITCH  | 80               | 35                   | 6.0              | 0.05               | 60              | 30           | --               | 150               | 10                                     | 1.00           | 1,000           | 60              | 12               | --   | --     |
| BFY51    | NPN AMPL/SWITCH  | 60               | 30                   | 6.0              | 0.05               | 40              | 40           | --               | 150               | 10                                     | 1.60           | 1,000           | 50              | 12               | --   | --     |
| BFY52    | PNP AMPL/SWITCH  | 40               | 20                   | 6.0              | 0.05               | 30              | 60           | --               | 150               | 10                                     | 1.6            | 1,000           | 50              | 12               | --   | --     |
| BFY55    | NPN AMPL/SWITCH  | 80               | 35                   | 7.0              | 0.01               | 60              | 40           | 120              | 150               | 10                                     | 1.00           | 1,000           | 60              | 12               | --   | --     |
| BFY56A   | PNP AMPL/SWITCH  | 85               | 55                   | 7.0              | 0.02**             | 50              | 40           | 120              | 150               | 1.0                                    | 1.00           | 1,000           | 60              | 25               | 225  | 800    |
| BFY57    | NPN AMPL/SWITCH  | 125              | 125                  | 5.0              | 0.10               | 100             | 30           | 150              | 30                | 10                                     | 1.50           | 50              | --              | --               | --   | --     |
| BFY63    | NPN AMPL/SWITCH  | 30               | 15                   | 4.0              | 0.05               | 20              | 20           | 120              | 50                | 5.0                                    | 0.30           | 50              | --              | --               | --   | --     |
| BFY64    | PNP AMPL/SWITCH  | 40               | 40                   | 5.0              | 0.03**             | 25              | 80           | --               | 10                | 10                                     | 0.50           | 150             | 200             | 10               | 50   | 120    |
| BFY68A   | NPN AMPL/SWITCH  | 60               | 25                   | 5.0              | 0.075              | 30              | 75           | --               | 10                | 10                                     | 1.50           | 150             | --              | --               | --   | --     |
| BSS44    | PNP AMPL/SWITCH  | 65               | 60                   | 6.0              | 500**              | 60              | 40           | --               | 2,000             | 2.0                                    | 1.00           | 5.0             | 80*             | 100              | 65*  | 450*   |
| BSS46    | PNP AMPL/SWITCH  | 85               | 80                   | 6.0              | 500**              | 60              | 25           | --               | 500               | 2.0                                    | 1.40           | 5.0             | 80*             | 100              | 65*  | 450*   |
| BSV12    | PNP AMPL/SWITCH  | 80               | 80                   | 5.0              | 0.01               | 80              | 63           | 250              | 100               | 1.0                                    | 0.50           | 100             | --              | --               | --   | --     |
| BSV15    | PNP AMPL/SWITCH  | 40               | 40                   | 5.0              | 0.10**             | 40              | 40           | 250              | 100               | 1.0                                    | 1.00           | 500             | 50              | 30               | 500  | --     |
| BSV16    | PNP AMPL/SWITCH  | 60               | 60                   | 5.0              | 0.10**             | 60              | 40           | 250              | 100               | 1.0                                    | 1.00           | 500             | 50              | 30               | 500  | --     |
| BSV17    | PNP AMPL/SWITCH  | 90               | 80                   | 5.0              | 0.10**             | 80              | 40           | 160              | 100               | 1.0                                    | 1.00           | 500             | 50              | 30               | 500  | --     |
| BSV64    | NPN HIGH CURRENT | 100              | 80                   | 5.0              | 10                 | 60              | 40           | --               | 2,000             | 2.0                                    | 1.00           | 5.0K            | 100*            | 80               | 600  | 1,200  |
| BSW65    | NPN HIGH VOLTAGE | 80               | 80                   | 6.0              | 100                | 40              | 40           | --               | 100               | 5.0                                    | 1.00           | 1,000           | 80*             | 35               | 300* | 1,000* |
| BSW66    | NPN HIGH VOLTAGE | 100              | 100                  | 6.0              | 100                | 50              | 40           | --               | 100               | 5.0                                    | 1.00           | 1,000           | 80*             | 35               | 500* | 1,000* |
| BSW67    | NPN HIGH VOLTAGE | 120              | 120                  | 6.0              | 100                | 60              | 40           | --               | 100               | 5.0                                    | 1.00           | 1,000           | 80*             | 35               | 500* | 1,000* |
| BSW68    | NPN HIGH VOLTAGE | 150              | 150                  | 6.0              | 100                | 75              | 40           | --               | 100               | 5.0                                    | 1.00           | 1,000           | 80*             | 35               | 500* | 1,000* |
| BSW68A   | NPN AMPL/SWITCH  | 150              | 150                  | 6.0              | 100                | 75              | 30           | --               | 500               | 5.0                                    | 1.00           | 1,000           | 80*             | 35               | 500* | 1,000* |
| BSX45    | NPN AMPL/SWITCH  | 80               | 40                   | 7.0              | 0.03**             | 60              | 40           | 250              | 100               | 1.0                                    | 1.00           | 1,000           | 50              | 25               | --   | 3.5*   |
| BSX46    | NPN AMPL/SWITCH  | 100              | 60                   | 7.0              | 0.03**             | 60              | 40           | 250              | 100               | 1.0                                    | 1.00           | 1,000           | 50              | 20               | --   | 3.5*   |
| BSX47    | NPN AMPL/SWITCH  | 120              | 80                   | 7.0              | 0.03**             | 80              | 40           | 160              | 100               | 1.0                                    | 0.90           | 500             | 50              | 15               | --   | 3.5*   |
| BSX59    | NPN CORE DRIVER  | 70               | 45                   | 5.0              | 0.50               | 40              | 30           | 90               | 500               | 1.0                                    | 1.00           | 1,000           | 250             | 10               | 35   | 60     |
| BSX60    | NPN CORE DRIVER  | 70               | 30                   | 5.0              | 0.50               | 40              | 30           | 90               | 500               | 1.0                                    | 1.00           | 1,000           | 250             | 10               | 40   | 70     |
| BSX61    | NPN CORE DRIVER  | 70               | 45                   | 5.0              | 0.50               | 40              | 30           | 90               | 500               | 1.0                                    | 1.30           | 1,000           | 250             | 10               | 50   | 100    |
| BSX62    | NPN HIGH CURRENT | 60               | 40                   | 5.0              | 0.10**             | 40              | 63           | 250              | 1,000             | 1.0                                    | 0.80           | 2,000           | 30              | 70               | 300  | 1,500  |
| BSX63    | NPN HIGH CURRENT | 80               | 60                   | 5.0              | 0.10**             | 60              | 63           | 250              | 1,000             | 1.0                                    | 0.80           | 2,000           | 30              | 70               | 300  | 1,500  |
| BSX64    | NPN HIGH CURRENT | 100              | 80                   | 5.0              | 0.10**             | 80              | 63           | 160              | 1,000             | 1.0                                    | 0.80           | 2,000           | 30              | 70               | 300  | 1,500  |
| BSX95    | NPN AMPL/SWITCH  | 75               | 30                   | 7.0              | 0.01               | 60              | 40           | 120              | 150               | 10                                     | 0.20           | 150             | 100             | 25               | --   | --     |
| BSX96    | NPN AMPL/SWITCH  | 75               | 30                   | 7.0              | 0.01               | 60              | 100          | 300              | 150               | 10                                     | 0.20           | 150             | 100             | 25               | --   | --     |
| BSY34    | NPN AMPL/SWITCH  | 60               | 40                   | 5.0              | 0.07               | 50              | 25           | --               | 100               | 1.0                                    | 1.00           | 500             | --              | --               | --   | --     |
| BSY51    | NPN AMPL/SWITCH  | 60               | 25                   | 5.0              | 0.10               | 30              | 40           | 120              | 150               | 10                                     | 0.80           | 150             | 100*            | --               | --   | --     |

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