

# 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><br>(μA)<br>*I <sub>CEO</sub><br>**I <sub>CEB</sub><br>***I <sub>CEV</sub><br>****I <sub>CER</sub> | @ V <sub>CB</sub> | h <sub>FE</sub> |     | @ 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)<br>*V <sub>CER</sub> | (V)              |  | (V)               | MIN             | MAX | (mA)             | (V)               | (V)                  | (mA)             | (MHz)          | (pF)            | (ns)            | (ns)             | (dB) |
|          |                  | MIN              | MIN                      | MIN              |  |                   |                 |     |                  |                   | MAX                  |                  | MIN            | MAX             | MAX             | MAX              | MAX  |
| 2N2854   | NPN AMPL/SWITCH  | 60               | 40                       | 5.0              | 0.10   | 40                | 100             | 300 | 1,000            | 1.0               | 0.40                 | 1,000            | --             | --              | --              | --               | --   |
| 2N2855   | NPN AMPL/SWITCH  | 60               | 40                       | 5.0              | 0.10   | 40                | 40              | 120 | 1,000            | 1.0               | 0.40                 | 1,000            | --             | --              | --              | --               | --   |
| 2N2890   | NPN AMPL/SWITCH  | 100              | 80                       | 5.0              | 0.50   | 60                | 30              | 90  | 1,000            | 2.0               | 0.50                 | 1,000            | 30             | 70              | --              | --               | --   |
| 2N2891   | NPN AMPL/SWITCH  | 100              | 80                       | 5.0              | 0.50   | 60                | 50              | 150 | 1,000            | 2.0               | 0.50                 | 1,000            | 30             | 70              | --              | --               | --   |
| 2N2904A  | PNP AMPL/SWITCH  | 60               | 60                       | 5.0              | 0.10   | 50                | 40              | 120 | 150              | 10                | 0.40                 | 150              | 200            | 8.0             | --              | --               | --   |
| 2N2905A  | PNP AMPL/SWITCH  | 60               | 60                       | 5.0              | 0.10   | 50                | 100             | 300 | 150              | 10                | 0.40                 | 150              | 200            | 8.0             | --              | --               | --   |
| 2N2927   | PNP AMPL/SWITCH  | 30               | 25                       | 4.0              | --   | --                | 30              | 130 | 50               | 5.0               | 0.25                 | 50               | 100            | 20              | --              | --               | --   |
| 2N2951   | NPN AMPL/SWITCH  | 60               | 20                       | 5.0              | 0.10   | 50                | 20              | 150 | 10               | 10                | 0.50                 | 150              | 200            | 8.0             | --              | --               | --   |
| 2N2958   | NPN AMPL/SWITCH  | 60               | 20                       | 5.0              | 0.025  | 50                | 40              | 120 | 150              | 10                | 0.50                 | 150              | 250            | 8.0             | --              | --               | --   |
| 2N2959   | NPN AMPL/SWITCH  | 60               | 20                       | 5.0              | 0.025  | 50                | 100             | 300 | 150              | 10                | 0.50                 | 150              | 250            | 8.0             | --              | --               | --   |
| 2N2960   | NPN AMPL/SWITCH  | 60               | 30                       | 5.0              | --   | --                | 100             | 300 | 150              | 10                | 0.50                 | 150              | 250            | 8.0             | --              | --               | --   |
| 2N2961   | NPN AMPL/SWITCH  | 60               | 30                       | 5.0              | --   | --                | 100             | 300 | 150              | 10                | 2.00                 | 500              | 250            | 8.0             | --              | --               | --   |
| 2N3015   | NPN CORE DRIVER  | 60               | 30                       | 5.0              | 0.20   | 30                | 30              | 120 | 150              | 10                | 0.40                 | 150              | 250            | 8.0             | --              | 60               | --   |
| 2N3019   | NPN AMPL/SWITCH  | 140              | 80                       | 7.0              | 0.10   | 90                | 100             | 300 | 150              | 10                | 0.20                 | 150              | 100            | 12              | --              | --               | --   |
| 2N3020   | NPN AMPL/SWITCH  | 140              | 80                       | 7.0              | 0.10   | 90                | 40              | 120 | 150              | 10                | 0.20                 | 150              | 100            | 12              | --              | --               | --   |
| 2N3053   | NPN AMPL/SWITCH  | 60               | 40                       | 5.0              | 0.25   | 30                | 50              | 250 | 150              | 10                | 1.40                 | 150              | 100            | 15              | --              | --               | --   |
| 2N3072   | PNP AMPL/SWITCH  | 60               | 60                       | 4.0              | 0.01**   | 30                | 30              | 130 | 50               | 1.0               | 1.00                 | 300              | 130            | 10              | --              | --               | --   |
| 2N3107   | NPN AMPL/SWITCH  | 100              | 60                       | 7.0              | 0.01**   | 60                | 100             | 300 | 150              | 10                | 1.00                 | 1,000            | 70             | 20              | --              | --               | --   |
| 2N3108   | NPN AMPL/SWITCH  | 100              | 60                       | 7.0              | 0.01*  | 60                | 40              | 120 | 150              | 10                | 1.00                 | 1,000            | 60             | 20              | --              | --               | --   |
| 2N3109   | NPN AMPL/SWITCH  | 80               | 40                       | 7.0              | 0.01*  | 60                | 100             | 300 | 150              | 10                | 0.25                 | 150              | 70             | 25              | --              | --               | --   |
| 2N3110   | NPN AMPL/SWITCH  | 80               | 40                       | 7.0              | 0.01*  | 60                | 40              | 120 | 150              | 10                | 0.25                 | 150              | 60             | 25              | --              | --               | --   |
| 2N3114   | NPN HIGH VOLTAGE | 150              | 150                      | 5.0              | 0.01   | 100               | 30              | 120 | 30               | 10                | 1.00                 | 50               | 40             | 9.0             | --              | --               | --   |
| 2N3119   | NPN AMPL/SWITCH  | 100              | 80                       | 4.0              | 50   | 60                | 50              | 200 | 100              | 10                | 0.50                 | 100              | 250            | 6.0             | 40              | 700              | --   |
| 2N3120   | PNP AMPL/SWITCH  | 45               | 45                       | 4.0              | 0.01*  | 30                | 30              | 130 | 150              | 1.0               | 0.50                 | 300              | 130            | 10              | --              | --               | --   |
| 2N3122   | NPN AMPL/SWITCH  | 50               | 30                       | 5.0              | --   | --                | 25              | 100 | 300              | 10                | 1.50                 | 300              | 60             | 25              | --              | --               | --   |
| 2N3133   | PNP AMPL/SWITCH  | 50               | 35                       | 4.0              | 0.50   | 30                | 40              | 120 | 150              | 10                | 0.60                 | 150              | 200            | 10              | --              | --               | --   |
| 2N3134   | PNP AMPL/SWITCH  | 50               | 35                       | 4.0              | 0.50   | 30                | 100             | 300 | 150              | 10                | 0.60                 | 150              | 200            | 10              | --              | --               | --   |
| 2N3137   | NPN VHF/UHF OSC  | 40               | 20                       | 4.0              | 0.50   | 20                | 20              | 120 | 50               | 5.0               | 0.30                 | 50               | 500            | 3.5             | --              | --               | --   |
| 2N3244   | PNP CORE DRIVER  | 40               | 40                       | 5.0              | 0.50   | 30                | 50              | 150 | 500              | 1.0               | 1.00                 | 1,000            | 175            | 25              | 50              | 185              | --   |
| 2N3245   | PNP CORE DRIVER  | 50               | 50                       | 5.0              | 0.50   | 30                | 30              | 90  | 500              | 1.0               | 1.20                 | 1,000            | 150            | 25              | 55              | 165              | --   |
| 2N3252   | NPN CORE DRIVER  | 60               | 30                       | 5.0              | 0.50   | 40                | 30              | 90  | 500              | 1.0               | 1.00                 | 1,000            | 200            | 12              | 45              | 70               | --   |
| 2N3253   | NPN CORE DRIVER  | 75               | 40                       | 5.0              | 0.50   | 60                | 25              | 75  | 500              | 1.0               | 1.20                 | 1,000            | 175            | 12              | 50              | 70               | --   |
| 2N3299   | NPN AMPL/SWITCH  | 60               | 30                       | 5.0              | 0.01**   | 50                | 40              | 120 | 150              | 10                | 0.60                 | 500              | 250            | 8.0             | 60              | 150              | --   |
| 2N3300   | NPN AMPL/SWITCH  | 60               | 30                       | 5.0              | 0.01**   | 50                | 100             | 300 | 150              | 10                | 0.60                 | 500              | 250            | 8.0             | 60              | 150              | --   |
| 2N3326   | NPN AMPL/SWITCH  | 60               | 40                       | 5.0              | 0.10   | 50                | 40              | 120 | 150              | 10                | 0.40                 | 150              | 250            | 8.0             | --              | --               | --   |
| 2N3388   | NPN AMPL/SWITCH  | 125              | 100                      | 6.0              | --   | --                | 60              | --  | 2.5              | 5.0               | 1.00                 | 2.5              | 36             | 35              | --              | --               | --   |
| 2N3420   | NPN AMPL/SWITCH  | 85               | 60                       | 6.0              | 0.50***  | 80                | 40              | 160 | 1,000            | 2.0               | 0.50                 | 2,000            | 40             | 150             | --              | --               | --   |
| 2N3421   | NPN AMPL/SWITCH  | 125              | 80                       | 8.0              | 0.50***  | 120               | 40              | 160 | 1,000            | 2.0               | 0.50                 | 2,000            | 40             | 150             | --              | --               | --   |
| 2N3439   | NPN HIGH VOLTAGE | 450              | 350                      | 7.0              | 20   | 360               | 40              | 160 | 20               | 10                | 0.50                 | 50               | 15             | 10              | --              | --               | --   |
| 2N3440   | NPN HIGH VOLTAGE | 300              | 250                      | 7.0              | 20   | 250               | 40              | 160 | 20               | 10                | 0.50                 | 50               | 15             | 10              | --              | --               | --   |

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## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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