

# Small Signal Transistors

## TO-18 Case (Continued)



| TYPE NO. | DESCRIPTION     | BV <sub>CBO</sub> | BV <sub>CEO</sub> | BV <sub>EBO</sub> | I <sub>CBO</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> |            | C <sub>ob</sub> | f <sub>T</sub> | NF           | t <sub>on</sub> | t <sub>off</sub> |
|----------|-----------------|-------------------|-------------------|-------------------|---|-----------------|-----------------|-----|------------------|-------------------|---------------------------------------|------------|-----------------|----------------|--------------|-----------------|------------------|
|          |                 | (V)<br>MIN        | (V)<br>MIN        | (V)<br>MIN        | (mA)<br>MAX<br>*I <sub>ICES</sub><br>**I <sub>CEV</sub> |                 | (V)             | MIN | MAX              | (mA)              | (V)                                   | (V)<br>MAX | (mA)            | (pF)<br>MAX    | (MHz)<br>MIN | (dB)<br>MAX     | (ns)<br>MAX      |
| 2N2896   | NPN AMPL/SWITCH | 140               | 90                | 7.0               | 0.01  | 60              | 60              | 200 | 150              | 10                | 0.6                                   | 150        | 15              | 120            | --           | --              | --               |
| 2N2897   | NPN AMPL/SWITCH | 60                | 45                | 7.0               | 0.05  | 60              | 50              | 200 | 150              | 10                | 1.0                                   | 150        | 15              | 100            | --           | --              | --               |
| 2N2906   | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.01  | 50              | 40              | 120 | 150              | 10                | 0.4                                   | 150        | 8.0             | 200            | --           | --              | 100              |
| 2N2906A  | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.01  | 50              | 40              | 120 | 150              | 10                | 0.4                                   | 150        | 8.0             | 200            | --           | --              | 100              |
| 2N2907   | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.01  | 50              | 100             | 300 | 150              | 10                | 0.4                                   | 150        | 8.0             | 200            | --           | --              | 100              |
| 2N2907A  | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.01  | 50              | 100             | 300 | 150              | 10                | 0.4                                   | 150        | 8.0             | 200            | --           | --              | 100              |
| 2N2952   | NPN AMPL/SWITCH | 60                | 20                | 5.0               | 0.1   | 50              | 20              | --  | 150              | 10                | 0.5                                   | 150        | 8.0             | 200            | --           | --              | --               |
| 2N3009   | NPN SAT SWITCH  | 40                | 15                | 4.0               | 0.5*  | 20              | 30              | 120 | 30               | 0.4               | 0.5                                   | 300        | 5.0             | 350            | --           | 15              | 25               |
| 2N3011   | NPN SAT SWITCH  | 30                | 12                | 5.0               | 0.4*  | 20              | 30              | 120 | 10               | 0.35              | 0.5                                   | 100        | 4.0             | 400            | --           | 15              | 20               |
| 2N3012   | PNP SAT SWITCH  | 12                | 12                | 4.0               | 0.08*   | 6.0             | 30              | 120 | 30               | 0.5               | 0.2                                   | 30         | 6.0             | 400            | --           | 60              | 75               |
| 2N3013   | NPN SAT SWITCH  | 40                | 15                | 5.0               | 0.3*  | 20              | 30              | 120 | 30               | 0.4               | 0.5                                   | 300        | 5.0             | 350            | --           | 15              | 25               |
| 2N3014   | NPN SAT SWITCH  | 40                | 20                | 5.0               | 0.3*  | 20              | 30              | 120 | 30               | 0.4               | 0.35                                  | 100        | 5.0             | 350            | --           | 16              | 25               |
| 2N3073   | PNP AMPL/SWITCH | 60                | 60                | 4.0               | 0.01*   | 30              | 30              | 130 | 50               | 1.0               | 0.25                                  | 50         | 10              | 130            | --           | 40              | 100              |
| 2N3115   | NPN AMPL/SWITCH | 20                | 20                | 5.0               | --  | --              | 40              | 120 | 150              | 10                | 0.5                                   | 150        | 8.0             | 250            | --           | --              | --               |
| 2N3116   | NPN AMPL/SWITCH | 20                | 20                | 5.0               | --  | --              | 100             | 300 | 150              | 10                | 0.5                                   | 150        | 8.0             | 250            | --           | --              | --               |
| 2N3117   | NPN AMPL/SWITCH | 60                | 60                | 6.0               | 10nA  | 45              | 250             | 500 | 0.01             | 10                | 0.35                                  | 1.0        | 4.5             | 60             | --           | --              | --               |
| 2N3121   | PNP AMPL/SWITCH | 45                | 45                | 4.0               | 0.01  | 30              | 30              | --  | 150              | 10                | 0.5                                   | 150        | 10              | 130            | --           | --              | --               |
| 2N3135   | PNP AMPL/SWITCH | 50                | 35                | 4.0               | 0.05  | 30              | 40              | --  | 150              | 10                | 0.5                                   | 150        | 10              | 200            | --           | --              | --               |
| 2N3136   | PNP AMPL/SWITCH | 50                | 35                | 4.0               | 0.05  | 30              | 100             | 300 | 150              | 10                | 0.6                                   | 150        | 10              | 200            | --           | --              | --               |
| 2N3209   | PNP SAT SWITCH  | 20                | 20                | 4.0               | 0.08  | 10              | 25              | --  | 10               | 0.3               | 0.15                                  | 10         | 5.0             | 400            | --           | 60              | 90               |
| 2N3210   | NPN SAT SWITCH  | 40                | 15                | 5.0               | --  | --              | 30              | 120 | 10               | 5.0               | 0.5                                   | 100        | 4.0             | 400            | --           | 15              | 20               |
| 2N3241A  | NPN AMPL/SWITCH | 30                | 25                | 7.5               | 100   | 25              | 100             | 200 | 10               | 10                | 0.25                                  | 200        | 20              | 50             | 10           | --              | --               |
| 2N3242A  | NPN AMPL/SWITCH | 40                | 40                | 8.0               | 10  | 25              | 125             | 300 | 10               | 10                | 0.3                                   | 300        | 20              | 50             | 6.0          | --              | --               |
| 2N3246   | NPN LOW NOISE   | 60                | 40                | 10                | 0.10  | 40              | 400             | --  | 1.0              | 5.0               | 0.5                                   | 5.0        | 5.0             | 60             | 2.0          | --              | --               |
| 2N3248   | PNP SAT SWITCH  | 15                | 12                | 5.0               | 0.05  | 10              | 50              | 150 | 10               | 1.0               | 0.125                                 | 10         | 8.0             | 250            | --           | 15              | 20               |
| 2N3249   | PNP SAT SWITCH  | 15                | 12                | 5.0               | 0.05**  | 10              | 100             | 300 | 0.1              | 1.0               | 0.25                                  | 50         | 8.0             | 300            | --           | 90              | 100              |
| 2N3250A  | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.02  | 40              | 50              | 150 | 10               | 1.0               | 0.25                                  | 10         | 6.0             | 250            | --           | 35              | 50               |
| 2N3251A  | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.02  | 40              | 100             | 300 | 10               | 1.0               | 0.25                                  | 10         | 6.0             | 300            | --           | 35              | 50               |
| 2N3301   | NPN AMPL/SWITCH | 60                | 30                | 5.0               | 0.01  | 50              | 40              | 120 | 150              | 10                | 0.22                                  | 150        | 8.0             | 250            | --           | --              | --               |
| 2N3302   | NPN AMPL/SWITCH | 60                | 30                | 5.0               | 0.01  | 50              | 100             | 300 | 150              | 10                | 0.22                                  | 150        | 8.0             | 250            | --           | --              | --               |
| 2N3496   | PNP AMPL/SWITCH | 80                | 80                | 4.0               | 0.1   | 50              | 40              | --  | 10               | 10                | 0.3                                   | 10         | 7.0             | 200            | --           | --              | --               |
| 2N3497   | PNP AMPL/SWITCH | 120               | 120               | 4.0               | 0.1   | 90              | 40              | --  | 10               | 10                | 0.35                                  | 10         | 6.0             | 150            | --           | --              | --               |
| 2N3504   | PNP AMPL/SWITCH | 45                | 45                | 5.0               | --  | --              | 100             | 300 | 150              | 10                | 0.25                                  | 50         | 8.0             | 200            | --           | --              | --               |
| 2N3505   | PNP AMPL/SWITCH | 60                | 60                | 5.0               | 0.01  | 30              | 100             | 300 | 150              | 10                | 0.4                                   | 150        | 8.0             | 200            | --           | --              | --               |
| 2N3545   | PNP SAT SWITCH  | 20                | 20                | 5.0               | --  | --              | 40              | 120 | 10               | 1.0               | 0.5                                   | 100        | 8.0             | 250            | --           | 60              | 90               |
| 2N3546   | PNP SAT SWITCH  | 15                | 12                | 4.5               | 0.01  | 10              | 30              | 120 | 10               | 1.0               | 0.5                                   | 100        | 6.0             | 700            | --           | 40              | 30               |
| 2N3547   | PNP LOW NOISE   | 60                | 60                | 6.0               | 0.025   | 45              | 100             | 500 | 1.0              | 5.0               | 1.0                                   | 10         | 8.0             | 45             | 5.0          | --              | --               |
| 2N3548   | PNP LOW NOISE   | 60                | 45                | 6.0               | 0.01  | 45              | 100             | 300 | 0.01             | 5.0               | 1.0                                   | 10         | 8.0             | 60             | 4.0          | --              | --               |
| 2N3549   | PNP LOW NOISE   | 60                | 60                | 6.0               | 0.01  | 45              | 100             | 500 | 0.01             | 5.0               | 1.0                                   | 10         | 8.0             | 60             | 4.0          | --              | --               |
| 2N3550   | PNP LOW NOISE   | 60                | 45                | 8.0               | 0.01  | 45              | 200             | 600 | 0.01             | 5.0               | 0.5                                   | 5.0        | 8.0             | 60             | 4.0          | --              | --               |

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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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