

# Transistors

For complete package outlines, refer to pages PO-1 through PO-6

## Dual Transistors

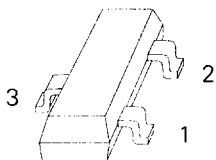
| Type<br>N=NPN<br>P=PNP | Maximum Ratings       |                      |                      |                       | Characteristics (T <sub>A</sub> =25°C)     |                       |   |                      |   |                      |       |           | Case          |    |   |
|------------------------|-----------------------|----------------------|----------------------|-----------------------|--|-----------------------|---|----------------------|---|----------------------|-------|-----------|---------------|----|---|
|                        | V <sub>CEO</sub><br>V | I <sub>C</sub><br>mA | P <sub>t</sub><br>mW | f <sub>T</sub><br>MHz | I <sub>CBO</sub> at V <sub>CBO</sub><br>nA | V <sub>CBO</sub><br>V | h <sub>FE</sub> at I <sub>C</sub><br>mA | V <sub>CE</sub><br>V | V <sub>CE(sat)</sub> at I <sub>C</sub><br>V | I <sub>B</sub><br>mA | Style | Lead Code | Leaded Equiv. |    |   |
| BC847S N               | 45                    | 200                  | 330                  | 250                   | ≤ 15                                       | 30                    | 110-800*                                | 2                    | 5   | ≤ 0.60               | 100   | 5         | SOT363        | 75 | - |
| BC847PN                | 45                    | 200                  | 330                  | 250                   | ≤ 15                                       | 30                    | 125-800*                                | 2                    | 5   | ≤ 0.60               | 100   | 5         | SOT363        | 77 | - |
| BC857S P               | 45                    | 200                  | 330                  | 250                   | ≤ 15                                       | 30                    | 125-800*                                | 2                    | 5   | ≤ 0.60               | 100   | 5         | SOT363        | 76 | - |

\*Available in h<sub>FE</sub> sub groups. See foldout for description.

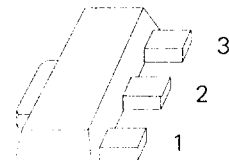
## High Voltage Transistors

| Type<br>N=NPN<br>P=PNP | Maximum Ratings       |                      |                      |                       | Characteristics (T <sub>A</sub> =25°C)     |                       |   |                      |   |                      |       |           | Case          |    |        |
|------------------------|-----------------------|----------------------|----------------------|-----------------------|--|-----------------------|---|----------------------|---|----------------------|-------|-----------|---------------|----|--------|
|                        | V <sub>CEO</sub><br>V | I <sub>C</sub><br>mA | P <sub>t</sub><br>mW | f <sub>T</sub><br>MHz | I <sub>CBO</sub> at V <sub>CBO</sub><br>nA | V <sub>CBO</sub><br>V | h <sub>FE</sub> at I <sub>C</sub><br>mA | V <sub>CE</sub><br>V | V <sub>CE(sat)</sub> at I <sub>C</sub><br>V | I <sub>B</sub><br>mA | Style | Lead Code | Leaded Equiv. |    |        |
| BF622 N                | 250                   | 100                  | 1000                 | 100                   | ≤ 100                                      | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT89         | 10 | BF422  |
| BF623 P                | 250                   | 100                  | 1000                 | 100                   | ≤ 100                                      | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT89         | 23 | BF423  |
| BF720 N                | 300                   | 100                  | 1500                 | 100                   | ≤ 10                                       | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.6                | 30    | 5         | SOT223        | 22 | BF420  |
| BF721 P                | 300                   | 100                  | 1500                 | 100                   | ≤ 10                                       | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.6                | 30    | 5         | SOT223        | 21 | BF421  |
| BF722 N                | 250                   | 100                  | 1500                 | 100                   | ≤ 10                                       | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.6                | 30    | 5         | SOT223        | 22 | BF422  |
| BF723 P                | 250                   | 100                  | 1500                 | 100                   | ≤ 10                                       | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.6                | 30    | 5         | SOT223        | 21 | BF423  |
| BFN16 N                | 250                   | 500                  | 1000                 | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT89         | 10 | BFP22  |
| BFN17 P                | 250                   | 500                  | 1000                 | 100                   | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT89         | 23 | BFP23  |
| BFN18 N                | 300                   | 500                  | 1000                 | 70                    | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT89         | 10 | BFP25  |
| BFN19 P                | 300                   | 500                  | 1000                 | 100                   | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT89         | 23 | BFP26  |
| BFN20 N                | 300                   | 100                  | 1000                 | 100                   | ≤ 100                                      | 250                   | ≥ 40                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT89         | 10 | BF420  |
| BFN21 P                | 300                   | 100                  | 1000                 | 100                   | ≤ 100                                      | 250                   | ≥ 40                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT89         | 23 | BF421  |
| BFN22 N                | 250                   | 100                  | 360                  | 100                   | ≤ 100                                      | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT23         | 7  | BF422  |
| BFN23 P                | 250                   | 100                  | 360                  | 100                   | ≤ 100                                      | 200                   | ≥ 50                                    | 25                   | 20  | ≤ 0.5                | 10    | 1         | SOT23         | 8  | BF423  |
| BFN24 N                | 250                   | 500                  | 360                  | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT23         | 7  | BFP22  |
| BFN25 P                | 250                   | 500                  | 360                  | 100                   | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT23         | 8  | BFP23  |
| BFN26 N                | 300                   | 500                  | 360                  | 70                    | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT23         | 7  | BFP25  |
| BFN27 P                | 300                   | 500                  | 360                  | 100                   | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT23         | 8  | BFP26  |
| BFN36 N                | 250                   | 500                  | 1500                 | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT223        | 22 | BFP22  |
| BFN37 P                | 250                   | 500                  | 1500                 | 100                   | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT223        | 21 | BFP23  |
| BFN38 N                | 300                   | 500                  | 1500                 | 70                    | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT223        | 22 | BFP25  |
| BFN39 P                | 300                   | 500                  | 1500                 | 100                   | ≤ 100                                      | 250                   | ≥ 30                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT223        | 21 | BFP26  |
| PZTA42 N               | 300                   | 500                  | 1500                 | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT223        | 22 | MPSA42 |
| PZTA43 N               | 200                   | 500                  | 1500                 | 70                    | ≤ 100                                      | 160                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT223        | 22 | MPSA43 |
| PZTA92 P               | 300                   | 500                  | 1500                 | 100                   | ≤ 250                                      | 200                   | ≥ 25                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT223        | 21 | MPSA92 |
| PZTA93 P               | 200                   | 500                  | 1500                 | 100                   | ≤ 250                                      | 160                   | ≥ 25                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT223        | 21 | MPSA93 |
| SMBTA42 N              | 300                   | 500                  | 360                  | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT23         | 7  | MPSA42 |
| SMBTA43 N              | 200                   | 500                  | 360                  | 70                    | ≤ 100                                      | 160                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT23         | 7  | MPSA43 |
| SMBTA92 P              | 300                   | 500                  | 360                  | 100                   | ≤ 250                                      | 200                   | ≥ 25                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT23         | 8  | MPSA92 |
| SMBTA93 P              | 200                   | 500                  | 360                  | 100                   | ≤ 250                                      | 160                   | ≥ 25                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT23         | 8  | MPSA93 |
| SXTA42 N               | 300                   | 500                  | 1000                 | 70                    | ≤ 100                                      | 200                   | ≥ 40                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT89         | 10 | MPSA42 |
| SXTA43 N               | 200                   | 500                  | 1000                 | 70                    | ≤ 100                                      | 160                   | ≥ 40                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT89         | 10 | MPSA43 |
| SXTA92 P               | 300                   | 500                  | 1000                 | 100                   | ≤ 250                                      | 200                   | ≥ 25                                    | 30                   | 10  | ≤ 0.5                | 20    | 2         | SOT89         | 23 | MPSA92 |
| SXTA93 P               | 200                   | 500                  | 1000                 | 100                   | ≤ 250                                      | 160                   | ≥ 25                                    | 30                   | 10  | ≤ 0.4                | 20    | 2         | SOT89         | 23 | MPSA93 |

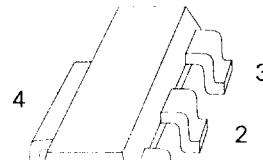
SOT-23



SOT-89



SOT-223



SOT-363

