

# TO-92 Plastic Package Transistors (NPN)

| Maximum Ratings |                             |                             |                             |                                |                    | Electrical Characteristics (Ta=25°C, Unless Otherwise Specified) |                          |                              |                          |                        |          |                       |                     |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 |         |
|-----------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|--------------------|------------------------------------------------------------------|--------------------------|------------------------------|--------------------------|------------------------|----------|-----------------------|---------------------|---------------------------------|-----|---------------------------------|--------|---------------------|-----------------------------|-----|-----------------------------|----------|----------------------------|-----------------------------|----------------------------|-------------------|-----------------------------|-----------------|---------|
| Type No.        | V <sub>CBO</sub> (V)<br>Min | V <sub>CEO</sub> (V)<br>Min | V <sub>EB0</sub> (V)<br>Min | P <sub>D</sub> (W)<br>@Tc=25°C | I <sub>C</sub> (A) | I <sub>CBO</sub> (μA)<br>Max                                     | V <sub>CB</sub> (V)<br>@ | I <sub>CES</sub> (μA)<br>Max | V <sub>CE</sub> (V)<br>@ | h <sub>FE</sub><br>Min | β<br>Max | I <sub>C</sub> & (mA) | V <sub>CE</sub> (V) | V <sub>CE(SAT)</sub> (V)<br>Max | Min | V <sub>BE(SAT)</sub> (V)<br>Max | β<br>@ | I <sub>C</sub> (mA) | C <sub>ob</sub> (pF)<br>Typ | Max | f <sub>T</sub> (MHz)<br>Min | β<br>Typ | I <sub>C</sub> (mA)<br>Max | t <sub>on</sub> (ns)<br>Max | N <sub>F</sub> (dB)<br>Max | β<br>@ Freq (MHz) | C <sub>re</sub> (pF)<br>Max | CDIL Case Style |         |
| MPS6521         | 40                          | 25                          | 4                           | 0.625                          | 0.1                | 0.05                                                             | 30                       |                              |                          | 300                    | 600      | 2                     | 10                  | 0.5                             |     |                                 |        |                     | 50                          | 3.5 |                             |          |                            |                             |                            | 3                 | 0.01                        |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 150                    |          |                       | 0.1                 | 10                              |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6530         | 60                          | 40                          | 5                           | 0.625                          | 0.8                | 0.05                                                             | 40                       |                              |                          | 25                     |          | 500                   | 10                  | 0.5                             |     | 1                               | 100    |                     | 5                           |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 40                     | 120      | 100                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 30                     |          | 10                    | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6531         | 60                          | 40                          | 5                           | 0.625                          | 0.8                | 0.05                                                             | 40                       |                              |                          | 50                     |          | 500                   | 10                  | 0.3                             |     | 1                               | 100    |                     | 7                           |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 90                     | 270      | 100                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 60                     |          | 10                    | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6532         | 50                          | 30                          | 5                           | 0.625                          | 0.6                | 0.1                                                              | 30                       |                              |                          | 30                     |          | 100                   | 1                   | 0.5                             |     | 1.2                             | 100    |                     | 5                           |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6539         | 20                          | 20                          |                             | 0.35                           |                    | 0.05                                                             | 15                       |                              |                          | 20                     |          | 4                     | 10                  |                                 |     |                                 |        |                     | 0.7                         | 500 |                             |          |                            | 4                           |                            | 4.5               | 100                         |                 | TO-92-3 |
| MPS6540         | 30                          | 30                          | 4                           | 0.35                           | 0.1                | 0.1                                                              | 25                       |                              |                          | 25                     |          | 2                     | 10                  | 0.5                             |     |                                 | 10     |                     | 0.7                         | 350 |                             |          | 2                          |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6541         |                             | 20                          | 4                           | 0.625                          | 0.05               | 0.05                                                             | 15                       |                              |                          | 25                     |          | 4                     | 10                  |                                 |     |                                 |        |                     | 1.7                         | 600 |                             | 1500     | 4                          |                             |                            |                   |                             |                 | TO-92   |
| MPS6542         | 30                          | 20                          |                             | 0.35                           | 0.1                | 0.05                                                             | 15                       |                              |                          | 25                     |          | 2                     | 10                  |                                 |     |                                 |        |                     | 1.5                         | 700 |                             |          | 10                         |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6543         | 35                          | 20                          | 3                           | 0.35                           | 0.1                | 0.1                                                              | 25                       |                              |                          | 25                     |          | 4                     | 10                  | 0.35                            |     | 0.95                            | 10     |                     | 1                           | 750 |                             |          | 4                          |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6544         | 60                          | 45                          | 4                           | 0.35                           |                    | 0.5                                                              | 35                       |                              |                          | 20                     |          | 30                    | 10                  | 0.5                             |     |                                 | 30     |                     | 0.7                         |     |                             |          |                            |                             |                            |                   | 0.7                         |                 | TO-92-3 |
| MPS6546         | 35                          | 25                          | 3                           | 0.35                           | 0.1                | 0.1                                                              | 25                       |                              |                          | 20                     |          | 2                     | 10                  | 0.35                            |     |                                 | 10     |                     | 0.5                         | 600 |                             |          | 2                          |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6547         | 35                          | 25                          | 3                           | 0.35                           | 0.1                | 0.1                                                              | 25                       |                              |                          | 20                     |          | 2                     | 5                   | 0.35                            |     |                                 | 10     |                     | 0.4                         | 600 |                             |          | 2                          |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6548         | 30                          | 25                          | 3                           | 0.35                           |                    | 0.1                                                              | 25                       |                              |                          | 25                     |          | 4                     | 10                  | 0.5                             |     | 0.95                            | 4      |                     | 0.7                         | 650 |                             |          | 4                          |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6560         | 25                          | 25                          | 4                           | 0.625                          | 0.5                | 0.1                                                              | 20                       |                              |                          | 35                     |          | 10                    | 1                   | 0.5                             |     | 1.2                             | 500    |                     | 30                          | 60  |                             |          | 10                         |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 50                     |          | 100                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 50                     | 200      | 500                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6561         | 20                          | 20                          | 4                           | 0.625                          | 0.5                | 0.1                                                              | 20                       |                              |                          | 35                     |          | 10                    | 1                   | 0.5                             |     | 1.2                             | 350    |                     | 30                          | 60  |                             |          | 10                         |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 50                     |          | 100                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 50                     | 200      | 350                   | 1                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6564         |                             | 45                          | 5                           | 0.625                          | 0.1                | 0.5                                                              | 40                       |                              |                          | 25                     |          | 10                    | 5                   | 0.5                             |     |                                 | 10     |                     | 4                           |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6565         | 60                          | 45                          | 4                           | 0.625                          | 0.1                | 0.1                                                              | 30                       |                              |                          | 40                     | 160      | 10                    | 10                  | 0.4                             |     |                                 | 10     |                     | 3.5                         |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6566         | 60                          | 45                          | 4                           | 0.625                          |                    | 0.1                                                              | 30                       |                              |                          | 100                    | 400      | 10                    | 10                  | 0.4                             |     |                                 | 10     |                     | 3.5                         | 200 |                             |          | 10                         |                             |                            |                   |                             |                 | TO-92   |
| MPS6567         |                             | 40                          | 5                           | 0.35                           |                    | 0.5                                                              | 35                       |                              |                          | 25                     |          | 10                    | 5                   | 0.5                             |     |                                 | 10     |                     | 0.7                         |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92-3 |
| MPS6568A        | 20                          | 20                          | 3                           | 0.625                          | 0.05               | 0.05                                                             | 10                       |                              |                          | 20                     | 200      | 4                     | 5                   | 0.3                             |     | 0.96                            | 10     |                     | 0.7                         | 375 |                             | 800      | 4                          |                             |                            | 3.3               | 200                         |                 | TO-92-3 |
| MPS6569         | 20                          | 20                          | 3                           | 0.625                          | 0.05               | 0.05                                                             | 10                       |                              |                          | 20                     | 200      | 4                     | 5                   | 3                               |     | 0.96                            | 10     |                     | 0.5                         | 300 |                             | 800      | 4                          |                             |                            | 6                 | 45                          |                 | TO-92-3 |
| MPS6570         | 20                          | 20                          | 3                           | 0.625                          | 0.05               | 0.05                                                             | 10                       |                              |                          | 20                     | 200      | 4                     | 5                   | 3                               |     | 0.96                            | 10     |                     | 0.5                         | 300 |                             | 300      | 4                          |                             |                            | 6                 | 45                          |                 | TO-92-3 |
| MPS6571         | 20                          | 20                          | 3                           | 0.625                          | 0.05               | 0.05                                                             | 20                       |                              |                          | 250                    | 1000     | 0.1                   | 5                   | 0.5                             |     |                                 | 10     |                     | 4.5                         | 50  |                             |          | 1                          |                             |                            |                   |                             |                 | TO-92   |
| MPS6573         |                             | 35                          |                             | 0.625                          | 0.1                | 0.1                                                              | 35                       |                              |                          | 100                    |          | 0.1                   | 5                   | 0.5                             |     |                                 | 10     |                     | 12                          | 100 |                             | 300      | 10                         |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 200                    | 500      | 10                    | 5                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6574         |                             | 35                          |                             | 0.625                          | 0.1                | 0.1                                                              | 35                       |                              |                          | 100                    | 300      | 1                     | 5                   | 0.5                             |     |                                 | 10     |                     | 12                          | 100 |                             | 300      | 10                         |                             |                            |                   |                             |                 | TO-92   |
| MPS6575         |                             | 45                          |                             | 0.625                          | 0.1                | 0.1                                                              | 45                       |                              |                          | 100                    |          | 0.1                   | 5                   | 0.5                             |     |                                 | 10     |                     | 12                          | 100 |                             | 300      | 10                         |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 200                    | 500      | 10                    | 5                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS6576         |                             | 45                          | 4                           | 0.625                          | 0.1                | 0.1                                                              | 45                       |                              |                          | 100                    | 300      | 1                     | 5                   | 0.5                             |     |                                 | 10     |                     | 12                          | 100 |                             | 350      | 10                         |                             |                            |                   |                             |                 | TO-92   |
| MPS706          | 25                          | 15                          | 3                           | 0.625                          | 0.2                | 0.5                                                              | 15                       |                              |                          | 20                     |          | 10                    | 1                   | 0.6                             |     | 0.9                             | 10     |                     | 6                           | 200 |                             |          | 10                         | 75                          |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 0.4                    |          |                       |                     |                                 |     |                                 | 50     |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
| MPS8098         | 60                          | 60                          | 6                           | 0.625                          | 0.5                | 0.1                                                              | 60                       |                              |                          | 100                    | 300      | 1                     | 5                   | 0.3                             |     |                                 | 100    |                     | 6                           | 150 |                             |          | 10                         |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 100                    |          | 10                    | 5                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |
|                 |                             |                             |                             |                                |                    |                                                                  |                          |                              |                          | 75                     |          | 100                   | 5                   |                                 |     |                                 |        |                     |                             |     |                             |          |                            |                             |                            |                   |                             |                 | TO-92   |

\$ NOTE : V<sub>CE</sub>S