

8514019 SPRAGUE. SEMICONDS/ICS

93D 03590 D

T-27-90

PLASTIC-CASE BIPOLAR TRANSISTORS

NPN Transistors

'MPS' Device Types

ELECTRICAL CHARACTERISTICS at T<sub>A</sub> = 25°C

| Device Type | I <sub>C</sub> Max. (mA) | V <sub>(BR)CBO</sub> (V) | V <sub>(BR)CEO</sub> (V) | V <sub>(BR)EBO</sub> (V) | I <sub>CBO</sub> |                      | DC Current Gain      |                      |                      |                      | V <sub>CE(sat)</sub> |                      | f <sub>T</sub> |                      | C <sub>ob</sub> <sup>1</sup> (pF) | t <sub>s</sub> <sup>1</sup> (ns) | NF <sup>1</sup> (dB) | Process |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------|----------------------|-----------------------------------|----------------------------------|----------------------|---------|
|             |                          |                          |                          |                          | Max. (nA)        | @V <sub>CB</sub> (V) | h <sub>FE</sub> Min. | h <sub>FE</sub> Max. | @I <sub>C</sub> (mA) | @V <sub>CE</sub> (V) | Max. (V)             | @I <sub>C</sub> (mA) | Min. (MHz)     | @I <sub>C</sub> (mA) |                                   |                                  |                      |         |
| MPS2712     | 200                      | 18                       | 18                       | 5.0                      | 500              | 18                   | 75                   | 225                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 4.0                               | —                                | —                    | FEE     |
| MPS2714     | 200                      | 18                       | 18                       | 5.0                      | 500              | 18                   | 75                   | 225                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | —                                 | —                                | —                    | FEE     |
| MPS2716     | 200                      | 18                       | 18                       | 5.0                      | 500              | 18                   | 75                   | 225                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 3.5                               | —                                | —                    | FEE     |
| MPS2923     | 500                      | 25                       | 25                       | 5.0                      | 500              | 25                   | 90                   | 180                  | 2.0                  | 10                   | —                    | —                    | —              | —                    | 12                                | —                                | —                    | JGA     |
| MPS2924     | 500                      | 25                       | 25                       | 5.0                      | 500              | 25                   | 150                  | 300                  | 2.0                  | 10                   | —                    | —                    | —              | —                    | 12                                | —                                | —                    | JGA     |
| MPS2925     | 500                      | 25                       | 25                       | 5.0                      | 500              | 25                   | 235                  | 470                  | 2.0                  | 10                   | —                    | —                    | —              | —                    | 12                                | —                                | —                    | JGA     |
| MPS2926     | 500                      | 25                       | 25                       | 5.0                      | 500              | 18                   | 35                   | 470                  | 2.0                  | 10                   | —                    | —                    | —              | —                    | 12                                | —                                | —                    | JGA     |
| MPS3390     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 400                  | 800                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3391     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 250                  | 500                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3392     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 150                  | 300                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3393     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 90                   | 180                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3394     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 55                   | 110                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3395     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 150                  | 500                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3396     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 90                   | 500                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3397     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 55                   | 500                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3398     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 55                   | 800                  | 2.0                  | 4.5                  | —                    | —                    | —              | —                    | 10                                | —                                | —                    | JGA     |
| MPS3402     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 75                   | 225                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3403     | 500                      | 25                       | 25                       | 5.0                      | 100              | 18                   | 180                  | 540                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3404     | 500                      | 50                       | 50                       | 5.0                      | 100              | 18                   | 75                   | 225                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3405     | 500                      | 50                       | 50                       | 5.0                      | 100              | 18                   | 180                  | 540                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3414     | 500                      | 25                       | 25                       | 5.0                      | 100              | 25                   | 75                   | 225                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3415     | 500                      | 25                       | 25                       | 5.0                      | 100              | 25                   | 180                  | 540                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3416     | 500                      | 50                       | 50                       | 5.0                      | 100              | 25                   | 75                   | 225                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3417     | 500                      | 50                       | 50                       | 5.0                      | 100              | 25                   | 180                  | 540                  | 2.0                  | 4.5                  | 0.3                  | 50                   | —              | —                    | —                                 | —                                | —                    | JGA     |
| MPS3563     | 50                       | 30                       | 15                       | 2.0                      | 50               | 15                   | 20                   | 200                  | 8.0                  | 10                   | —                    | —                    | 600            | 8.0                  | 1.7                               | —                                | —                    | DMA     |
| MPS3565     | 200                      | 30                       | 25                       | 6.0                      | 50               | 25                   | 150                  | 600                  | 1.0                  | 10                   | 0.35                 | 1.0                  | 40             | 1.0                  | 4.0                               | —                                | —                    | FEE     |
| MPS3566     | 800                      | 40                       | 30                       | 5.0                      | 50               | 20                   | 150                  | 600                  | 10                   | 10                   | 1.0                  | 100                  | 40             | 30                   | 25                                | —                                | —                    | JLA     |
| MPS3567     | 800                      | 80                       | 40                       | 5.0                      | 50               | 40                   | 40                   | 120                  | 150                  | 1.0                  | 0.25                 | 150                  | 60             | 50                   | 20                                | —                                | —                    | JLA     |
| MPS3568     | 800                      | 80                       | 60                       | 5.0                      | 50               | 40                   | 40                   | 120                  | 150                  | 1.0                  | 0.25                 | 150                  | 60             | 50                   | 20                                | —                                | —                    | JLA     |
| MPS3569     | 800                      | 80                       | 40                       | 5.0                      | 50               | 40                   | 100                  | 300                  | 150                  | 1.0                  | 0.25                 | 150                  | 60             | 50                   | 20                                | —                                | —                    | JLA     |
| MPS3642     | 500                      | 60                       | 45                       | 5.0                      | 50 <sup>2</sup>  | 50                   | 40                   | 120                  | 150                  | 10                   | 0.22                 | 150                  | 250            | 50                   | 8.0                               | —                                | —                    | JGA     |
| MPS3693     | 100                      | 45                       | 45                       | 4.0                      | 50               | 35                   | 40                   | 160                  | 10                   | 10                   | —                    | —                    | 200            | 10                   | 3.5                               | —                                | 4.0                  | FFB     |
| MPS3694     | 100                      | 45                       | 45                       | 4.0                      | 50               | 35                   | 100                  | 400                  | 10                   | 10                   | —                    | —                    | 200            | 10                   | 3.5                               | —                                | 4.0                  | FFB     |
| MPS3704     | 500                      | 50                       | 30                       | 5.0                      | 100              | 20                   | 100                  | 300                  | 50                   | 2.0                  | 0.6                  | 100                  | 100            | 50                   | 12                                | —                                | —                    | JGA     |
| MPS3705     | 500                      | 50                       | 30                       | 5.0                      | 100              | 20                   | 50                   | 150                  | 50                   | 2.0                  | 0.8                  | 100                  | 100            | 50                   | 12                                | —                                | —                    | JGA     |
| MPS3706     | 500                      | 40                       | 20                       | 5.0                      | 100              | 20                   | 30                   | 600                  | 50                   | 2                    | 1.0                  | 100                  | 100            | 50                   | 12                                | —                                | —                    | JGA     |
| MPS3707     | 200                      | 30                       | 30                       | 6.0                      | 100              | 20                   | 100                  | 400                  | 0.1                  | 5                    | 1.0                  | 10                   | —              | —                    | —                                 | —                                | 5.0                  | FEE     |
| MPS3708     | 200                      | 30                       | 30                       | 6.0                      | 100              | 20                   | 45                   | 660                  | 1.0                  | 5                    | 1.0                  | 10                   | —              | —                    | —                                 | —                                | —                    | FEE     |
| MPS3709     | 200                      | 30                       | 30                       | 6.0                      | 100              | 20                   | 45                   | 165                  | 1.0                  | 5                    | 1.0                  | 10                   | —              | —                    | —                                 | —                                | —                    | FEE     |
| MPS3710     | 200                      | 30                       | 30                       | 6.0                      | 100              | 20                   | 90                   | 330                  | 1.0                  | 5                    | 1.0                  | 10                   | —              | —                    | —                                 | —                                | —                    | FEE     |
| MPS3711     | 200                      | 30                       | 30                       | 6.0                      | 100              | 20                   | 180                  | 660                  | 1.0                  | 5                    | 1.0                  | 10                   | —              | —                    | —                                 | —                                | —                    | FEE     |

NOTES:

- 1) Maximum at typical JEDEC conditions.
- 2) μA.

3) V<sub>(BR)CES</sub>/I<sub>CES</sub>, as applicable.

4) mA.

5) V<sub>(BR)CER</sub> at R = 10Ω.