

## FAIRCHILD TRANSISTORS

### SMALL SIGNAL

**GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS  
(BY ASCENDING  $V_{CE0}$ ) (Cont'd)  
(ALSO SEE LOW LEVEL AND HIGH VOLTAGE SECTION)**

| Item | DEVICE NO.<br>Polarity |          | $V_{CE0}$<br>( $V_{CER}$ )<br>V<br>Min | $h_{FE}$<br>( $h_{fe}$ )<br>Min/Max | @ $I_C$<br>mA | $V_{CE(sat)}$<br>V @ $I_C$ |      | $C_{ob}$<br>pF<br>Max | $f_T$<br>MHz<br>Min | $t_{off}$<br>ns<br>Max | $P_D$               |                    | Package<br>No. |
|------|------------------------|----------|--|-------------------------------------|---------------|----------------------------|------|-----------------------|---------------------|------------------------|---------------------|--------------------|----------------|
|      | NPN                    | PNP      |  |                                     |               | Max                        | mA   |                       |                     |                        | $T_A$<br>25°C<br>mW | $T_C$<br>25°C<br>W |                |
| 1    | MPSA06                 | MPSA56   | 80                                     | 50/-                                | 100           | 0.25                       | 100  | —                     | 50                  | —                      | 625                 | 1.0                | TO-92          |
| 2    | BC538-10               | BC528-10 | 80                                     | 63/160                              | 100           | 0.50                       | 1000 | 15                    | 100                 | —                      | 625                 | 1.0                | TO-92          |
| 3    |                        | 2N4033   | 80                                     | 100/300                             | 100           | 0.15                       | 150  | 20                    | 150                 | —                      | 800                 | 4.0                | TO-39          |
| 4    | BC538-16               | BC528-16 | 80                                     | 100/250                             | 100           | 0.50                       | 1000 | 15                    | 100                 | —                      | 625                 | 1.0                | TO-92          |
| 5    | BC538-25               | BC528-25 | 80                                     | 160/400                             | 100           | 0.50                       | 1000 | 15                    | 100                 | —                      | 625                 | 1.0                | TO-92          |
| 6    | 2N4410                 |          | 80                                     | 60/400                              | 10            | 0.20                       | 1.0  | 12                    | 60                  | —                      | 625                 | —                  | TO-92          |
| 7    | 2N3020                 |          | 80                                     | 40/120                              | 150           | 0.20                       | 150  | 12                    | 80                  | —                      | 800                 | 5.0                | TO-39          |
| 8    | 2N1893                 |          | 80                                     | 40/120                              | 150           | 5.00                       | 150  | 15                    | 50                  | —                      | 800                 | 3.0                | TO-39          |
| 9    | PE6021                 |          | 80                                     | 100/300                             | 150           | 0.18                       | 150  | 15                    | 250                 | 1000                   | 625                 | 1.0                | TO-92          |
| 10   | SE6021                 |          | 80                                     | 100/300                             | 150           | 0.18                       | 150  | 15                    | 250                 | 1000                   | 300                 | 0.8                | TO-105         |
| 11   | 2N3019                 |          | 80                                     | 100/300                             | 150           | 0.20                       | 150  | 12                    | 100                 | —                      | 800                 | 5.0                | TO-39          |
| 12   | 2N2405                 |          | 90                                     | 60/200                              | 150           | 0.50                       | 150  | 15                    | 200                 | —                      | 800                 | 2.4                | TO-39          |

### LOW LEVEL, LOW NOISE AMPLIFIER TRANSISTORS (BY ASCENDING $V_{CE0}$ )

| Item | DEVICE NO.<br>Polarity |        | $V_{CE0}$<br>V<br>Min | $h_{FE}$<br>Min/Max | @ $I_C$<br>mA | $h_{FE}$ @ $I_C$ |     | NF<br>dB<br>Max | @ $f$<br>kHz | NF<br>dB<br>Max | @ $f$<br>kHz | Package<br>No. |
|------|------------------------|--------|-----------------------|---------------------|---------------|------------------|-----|-----------------|--------------|-----------------|--------------|----------------|
|      | NPN                    | PNP    |                       |                     |               | Min/Max          | mA  |                 |              |                 |              |                |
| 13   | 2N5133                 |        | 18                    | 60/1000             | 1.0           | —                | —   | —               | —            | —               | —            | TO-106         |
| 14   | BC208                  |        | 20                    | 90 (Typ)/-          | 0.01          | 110/800          | 2.0 | 10              | 1.0          | —               | —            | TO-106         |
| 15   | BC208A                 |        | 20                    | 90 (Typ)/-          | 0.01          | 110/220          | 2.0 | 10              | 1.0          | —               | —            | TO-106         |
| 16   | BC208B                 | BC205B | 20                    | 150 (Typ)/-         | 0.01          | 200/450          | 2.0 | 10              | 1.0          | —               | —            | TO-106         |
| 17   | BC208C                 |        | 20                    | 270 (Typ)/-         | 0.01          | 420/800          | 2.0 | 10              | 1.0          | —               | —            | TO-106         |
| 18   | BC209                  |        | 20                    | 150 (Typ)/-         | 0.01          | 200/800          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-106         |
| 19   | BC209B                 |        | 20                    | 150 (Typ)/-         | 0.01          | 200/450          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-106         |
| 20   | BC209C                 |        | 20                    | 270 (Typ)/-         | 0.01          | 420/450          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-106         |
| 21   | BC319                  | BC322  | 20                    | 150 (Typ)/-         | 0.01          | 200/800          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-92          |
| 22   | BC319B                 | BC322B | 20                    | 150 (Typ)/-         | 0.01          | 200/450          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-92          |
| 23   | BC319C                 | BC322C | 20                    | 270 (Typ)/-         | 0.01          | 420/800          | 2.0 | 4.0             | 1.0          | 4.0             | WB           | TO-92          |
| 24   | BC522                  |        | 20                    | —                   | —             | 400/2000         | 2.0 | 3.0             | 1.0          | 3.0             | WB           | TO-92          |
| 25   | BC522C                 |        | 20                    | —                   | —             | 400/800          | 2.0 | 3.0             | 1.0          | 3.0             | WB           | TO-92          |
| 26   | BC522D                 |        | 20                    | —                   | —             | 750/1550         | 2.0 | 3.0             | 1.0          | 3.0             | WB           | TO-92          |