

# Transistors (Selection Guide by Applications and Functions)

## ■ Silicon Large Power Transistors

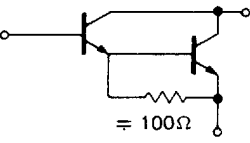
| Application Functions    | V <sub>CEO</sub> (V) | I <sub>c</sub> (A) | V <sub>CE(sat)</sub> (V) | Package (No.)      |                     |                |                 |
|--------------------------|----------------------|--------------------|--------------------------|--------------------|---------------------|----------------|-----------------|
|                          |                      |                    |                          | I <sub>c</sub> (A) | I <sub>B</sub> (mA) | TOP-3(a) (D64) | TOP-3F(a) (D67) |
| General-use              | 50                   | 7                  | <0.8                     | 7                  | 700                 | 2SA1185        |                 |
|                          | 100                  | 5                  | <2                       | 3                  | 300                 |                | 2SB1054/2SD1485 |
|                          | 140                  | 7                  | <2                       | 5                  | 500                 | 2SB1421        |                 |
| Low V <sub>CE(sat)</sub> | 80                   | 10                 | 0.2                      | 6                  | 300                 |                | 2SB1154/2SD1705 |
|                          |                      | 15                 | 0.2                      | 7                  | 350                 |                | 2SB1155/2SD1706 |
|                          |                      | 20                 | 0.25                     | 8                  | 400                 |                | 2SB1156/2SD1707 |
| Darlington               | 150                  | 6                  | <1.5                     | 3                  | 60                  |                | 2SD1457         |
|                          | 200                  | 6                  | <1.5                     | 3                  | 60                  |                | 2SD1457A        |
|                          | 400                  | 20                 | <2.0                     | 20                 | 800                 |                | 2SC4535         |
| High-h <sub>FE</sub>     | 55                   | 4                  | <2                       | 0.5                | 2                   | 2SD1641        |                 |
|                          | 60                   | 10                 | <0.5                     | 5                  | 100                 |                | 2SD1831         |
|                          | 80/100               | 3                  | <1                       | 2                  | 50                  |                | 2SD1643/A       |

## ■ Silicon Power Transistors for Audio

### ● Single

| Application  | V <sub>CEO</sub> (V) | I <sub>c</sub> (A) | V <sub>CE(sat)</sub> (V) | Package (No.)      |                     | P <sub>c</sub> (W) |                 |                 |                                    |
|--------------|----------------------|--------------------|--------------------------|--------------------|---------------------|--------------------|-----------------|-----------------|------------------------------------|
|              |                      |                    |                          | I <sub>c</sub> (A) | I <sub>B</sub> (mA) |                    | TOP-3(a) (D64)  | TOP-3F(a) (D67) | TOP-3L (D71)                       |
| Audio output | 120                  | 6                  | <2                       | 4                  | 400                 | 70                 |                 | 2SB1371/2SD2064 |                                    |
|              | 140                  | 7                  | <2                       | 5                  | 500                 | 80                 | 2SB1421/2SD2140 | 2SB1372/2SD2065 |                                    |
|              | 150                  | 9                  | <2                       | 7                  | 700                 | 100                | 2SB1362/2SD2053 | 2SB1361/2SD2052 |                                    |
|              | 160                  | 12                 | <1.8                     | 8                  | 120                 | 120                |                 |                 | 2SB1419                            |
|              | 160                  | 12                 | <2                       | 8                  | 800                 | 120                | 2SB1373/2SD2066 |                 | 2SB1347/2SD2029<br>2SB1528/2SD2327 |
|              | 180                  | 15                 | <2.5                     | 10                 | 1(A)                | 150                |                 |                 | 2SB1317/2SD1975<br>2SB1529/2SD2328 |

### ● Darlington

| Application                            | V <sub>CEO</sub> (V) | I <sub>c</sub> (A)  | V <sub>CE(sat)</sub> (V) | Package (No.)      |                     | P <sub>c</sub> (W) |                   |                 |                 |                 |
|--|----------------------|---|--------------------------|--------------------|---------------------|--------------------|-------------------|-----------------|-----------------|-----------------|
|  |                      |   |                          | I <sub>c</sub> (A) | I <sub>B</sub> (mA) |                    | TO-220(F)(a)(D59) | TOP-3(a)(D64)   | TOP-3F(a)(D67)  | TOP-3L(D71)     |
| Audio output (incl. driver) Darlington | 80                   | 3   | <2.5                     | 2                  | 2                   | 35                 | 2SB1250/2SD1890   |                 |                 | 2SB1500/2SD2273 |
|  | 90                   | 4   | <3                       | 3                  | 3                   | 40                 | 2SB1251/2SD1891   |                 |                 | 2SB1501/2SD2274 |
|  | 100                  | 5   | <2.5                     | 4                  | 4                   | 45                 | 2SB1252/2SD1892   |                 |                 | 2SB1502/2SD2275 |
|  | 110                  | 6   | <2.5                     | 5                  | 5                   | 50                 |                   |                 | 2SB1253/2SD1893 | 2SB1492/2SD2254 |
|  | 130                  | 6   | <2.5                     | 5                  | 5                   | 50                 |                   | 2SB1531/2SD2340 |                 |                 |
|  | 140                  | 7   | <2.5                     | 6                  | 6                   | 70                 |                   | 2SB1493/2SD2255 | 2SB1254/2SD1894 | 2SB1490/2SD2250 |
|  | 140                  | 8   | <2.5                     | 7                  | 7                   | 100                |                   | 2SB1469/2SD2221 | 2SB1255/2SD1895 | 2SB1503/2SD2276 |
|  | Equivalent circuit   |  <p style="text-align: center;">= 100Ω      Direct drive by IC is possible</p> |                          |                    |                     |                    |                   |                 |                 |                 |

Complementary pair marked/between products (Ex. 2SB1054/2SD1485)

(Package Symbol) TO-220(F) = TO-220 Type Full Pack Package, TOP-3F = TOP-3 Type Full Pack Package, TOP-3L = TOP-3 Type Large Package