

# PNP Transistors



## DARLINGTON

| Type No. | Case Style  | VCBO (V)<br>Min | VCE*<br>VCEO (V)<br>Min | VEBO (V)<br>Min | ICES*<br>ICEX† (μA)<br>Max | @ VCB (V) | hFE                      |        |  | IC (A)          | & VCE (V)   | VCE(SAT) (V) |       | VBE(SAT) (V) | @ IC (A) | Cob (pF)<br>Max | fT (MHz) |     | @ IC (A) | Process No. |
|----------|-------------|-----------------|-------------------------|-----------------|----------------------------|-----------|--------------------------|--------|--|-----------------|-------------|--------------|-------|--------------|----------|-----------------|----------|-----|----------|-------------|
|          |             |                 |                         |                 |                            |           | Min                      | Max    |  |                 |             | Max          | & Min | Max          |          |                 | Min      | Max |          |             |
| D41K1    | TO-202 (55) |                 | 30*                     | 13              | 0.5                        | 30        | 10,000<br>1000           |        |  | 0.2<br>1.5      | 5<br>5      | 1.5          |       | 2.5          | 1.5      |                 | 100      |     | 0.02     | 61          |
| D41K2    | TO-202 (55) |                 | 50*                     | 13              | 0.5                        | 50        | 10,000<br>1000           |        |  | 0.2<br>1.5      | 5<br>5      | 1.5          |       | 2.5          | 1.5      |                 | 100      |     | 0.02     | 61          |
| D41K3    | TO-202 (55) |                 | 30*                     | 13              | 0.5                        | 30        | 10,000<br>1000           |        |  | 0.2<br>1.5      | 5<br>5      | 1.5          |       | 2.5          | 1        |                 | 100      |     | 0.02     | 61          |
| D41K4    | TO-202 (55) |                 | 50*                     | 13              | 0.5                        | 50        | 10,000<br>1000           |        |  | 0.2<br>1.5      | 5<br>5      | 1.5          |       | 2.5          | 1        |                 | 100      |     | 0.02     | 61          |
| MPSA62   | TO-92 (92)  |                 | 20*                     |                 | 0.1                        | 15        | 20,000                   |        |  | 10              | 5           | 1.0          |       |              | 10       |                 |          |     | 0.01     | 61          |
| MPSA63   | TO-92 (92)  |                 | 30*                     |                 | 0.1                        | 30        | 10,000<br>5000           |        |  | 100<br>10       | 5<br>5      | 1.5          |       |              | 100      |                 | 125      |     | 0.01     | 61          |
| MPSA64   | TO-92 (92)  |                 | 30*                     |                 | 0.1                        | 30        | 20,000<br>10,000         |        |  | 100<br>10       | 5<br>5      | 1.5          |       |              | 100      |                 | 125      |     | 0.01     | 61          |
| MPSA65   | TO-92 (92)  |                 | 30*                     |                 | 0.1                        | 30        | 50,000<br>20,000         |        |  | 0.01<br>0.1     | 5<br>5      | 1.5          |       |              |          |                 | 100      |     | 0.01     | 61          |
| MPSA66   | TO-92 (92)  |                 | 30*                     |                 | 0.1                        | 30        | 75,000<br>40,000         |        |  | 0.01<br>0.1     | 5<br>5      | 1.5          |       |              |          |                 | 100      |     | 0.01     | 61          |
| NSDU95   | TO-202 (55) | 50              |                         | 10              |                            |           | 25,000<br>15,000<br>4000 |        |  | 0.2<br>0.5<br>1 | 5<br>5<br>5 | 1.5          |       |              | 1        |                 | 50       |     | 0.02     | 61          |
| NSDU95A  | TO-202 (55) | 60              |                         | 10              |                            |           | 25,000<br>15,000<br>4000 |        |  | 0.2<br>0.5<br>1 | 5<br>5<br>5 | 1.5          |       |              | 1        |                 | 50       |     | 0.02     | 61          |
| 2N6034   | TO-126      |                 | 40                      |                 | 500                        | 40        | 100<br>750<br>500        | 15,000 |  | 4<br>2<br>0.05  | 3<br>3<br>3 | 2.0<br>3.0   |       |              | 2<br>4   | 200             | 25       |     | 0.75     | 5J          |
| 2N6035   | TO-126      |                 | 60                      |                 | 500                        | 60        | 100<br>750<br>500        | 15,000 |  | 4<br>2<br>0.5   | 3<br>3<br>3 | 2.0<br>3.0   |       |              | 2<br>4   | 200             | 25       |     | 0.75     | 5J          |
| 2N6036   | TO-126      |                 | 80                      |                 | 500                        | 80        | 100                      |        |  | 4               | 3           | 2.0          |       |              | 2        | 200             | 25       |     | 0.75     | 5J          |
| 2N6040   | TO-220      |                 | 60                      |                 | 500†                       | 60        | 1000<br>100              | 20,000 |  | 4<br>8          | 4<br>4      | 2.0          |       |              | 4        | 300             |          |     |          | 5J          |
| 2N6041   | TO-220      |                 | 80                      |                 | 500†                       | 80        | 1000<br>100              | 20,000 |  | 4<br>8          | 4<br>4      | 2.0          |       |              | 4        | 300             |          |     |          | 5J          |
| MJE700   | TO-126      |                 | 60                      |                 | 200                        | 60        | 750                      |        |  | 1.5             | 3           | 2.5          |       |              | 1.5      |                 | 1        |     | 1.5      | -5J         |
| MJE701   | TO-126      |                 | 60                      |                 | 200                        | 60        | 750                      | 2      |  | 3               | 2.8         |              |       |              | 2        |                 | 1        |     | 1.5      | 5J          |
| MJE702   | TO-126      |                 | 80                      |                 | 200                        | 80        | 750                      |        |  | 1.5             | 3           | 2.5          |       |              | 1.5      |                 | 1        |     | 1.5      | 5J          |
| MJE703   | TO-126      |                 | 80                      |                 | 200                        | 80        | 750                      |        |  | 2               | 3           | 2.8          |       |              | 2        |                 | 1        |     | 1.5      | 5J          |

## TO-126 Type Power Transistor Selection Guide

| Part Number |        | I <sub>C</sub><br>(A) | V <sub>CEO</sub><br>(V) | h <sub>FE</sub> |     | @                  |                     | Max V <sub>CE(SAT)</sub> |                      | P <sub>D</sub><br>(W) | f <sub>T</sub><br>(MHz) | Process<br>(NPN/PNP) |
|-------------|--------|-----------------------|-------------------------|-----------------|-----|--------------------|---------------------|--------------------------|----------------------|-----------------------|-------------------------|----------------------|
| NPN         | PNP    |                       |                         | Min             | Max | I <sub>C</sub> (A) | V <sub>CE</sub> (V) | (V)                      | @ I <sub>C</sub> (A) |                       |                         |                      |
| MJE3440     |        | 0.3                   | 250                     | 40              | 160 | 0.02               | 10                  | 0.5                      | 0.05                 | 15                    | 15                      | 36                   |
| MJE3439     |        | 0.3                   | 350                     | 40              | 160 | 0.02               | 10                  | 0.5                      | 0.05                 | 15                    | 15                      | 36                   |
| MJE341      |        | 0.5                   | 150                     | 25              | 200 | 0.05               | 10                  | 1                        | 0.05                 | 20                    | 15                      | 36                   |
| MJE344      |        | 0.5                   | 200                     | 30              | 300 | 0.05               | 10                  | 1                        | 0.05                 | 30                    | 15                      | 36                   |
| 2N5655      |        | 0.5                   | 250                     | 30              | 250 | 0.1                | 10                  | 1                        | 0.1                  | 20                    | 10                      | 36                   |
| MJE340      |        | 0.5                   | 300                     | 30              | 240 | 0.05               | 10                  |                          |                      | 20                    |                         | 36                   |
| 2N5656      |        | 0.5                   | 300                     | 30              | 250 | 0.1                | 10                  | 1                        | 0.1                  | 20                    | 10                      | 36                   |
| 2N5657      |        | 0.5                   | 350                     | 30              | 250 | 0.1                | 10                  | 1                        | 0.1                  | 20                    | 10                      | 36                   |
| 2N4921      | 2N4918 | 1                     | 40                      | 20              | 100 | 0.5                | 1                   | 0.6                      | 1                    | 30                    | 3                       | 4H/5F                |
| 2N4922      | 2N4919 | 1                     | 60                      | 20              | 100 | 0.5                | 1                   | 0.6                      | 1                    | 30                    | 3                       | 4H/5F                |
| 2N4923      | 2N4920 | 1                     | 80                      | 20              | 100 | 0.5                | 1                   | 0.6                      | 1                    | 30                    | 3                       | 4H/5F                |
| MJE720      | MJE710 | 1.5                   | 40                      | 40              |     | 0.15               | 1                   | 0.15                     | 0.15                 | 20                    |                         | 37/77                |
| BD345       | BD344  | 1.5                   | 60                      | 40              | 250 | 0.2                | 1                   | 0.4                      | 0.2                  | 20                    | 50                      | 38/78                |
| MJE721      | MJE711 | 1.5                   | 60                      | 40              |     | 0.15               | 1                   | 0.15                     | 0.15                 | 20                    |                         | 38/78                |
| BD349       | BD348  | 1.5                   | 80                      | 50              | 250 | 0.25               | 1                   | 0.5                      | 0.25                 | 20                    | 50                      | 39/79                |
| MJE722      | MJE712 | 1.5                   | 80                      | 40              |     | 0.15               | 1                   | 0.15                     | 0.15                 | 20                    |                         | 39/79                |
| MJE520      | MJE370 | 3                     | 30                      | 25              |     | 1                  | 1                   |                          |                      | 25                    |                         | 4F/5F                |
| MJE180      | MJE170 | 3                     | 40                      | 50              | 250 | 0.1                | 1                   | 0.3                      | 0.5                  | 12.5                  | 50                      | 37/77                |
| MJE181      | MJE171 | 3                     | 60                      | 50              | 250 | 0.1                | 1                   | 0.3                      | 0.5                  | 12.5                  | 50                      | 38/78                |
| MJE182      | MJE172 | 3                     | 80                      | 50              | 250 | 0.1                | 1                   | 0.3                      | 0.5                  | 12.5                  | 50                      | 39/79                |
| MJE220      | MJE230 | 4                     | 40                      | 20              |     | 2                  | 1                   | 0.8                      | 2                    | 15                    | 50                      | 4P/5P                |
| MJE221      | MJE231 | 4                     | 40                      | 20              |     | 1                  | 1                   | 0.6                      | 1                    | 15                    | 50                      | 4P/5P                |
| MJE222      | MJE232 | 4                     | 40                      | 25              |     | 1                  | 1                   | 0.3                      | 0.5                  | 15                    | 50                      | 4P/5P                |
| MJE521      | MJE371 | 4                     | 40                      | 40              |     | 0.1                | 1                   |                          |                      | 40                    |                         | 4F/5F                |
| 2N5190      | 2N5193 | 4                     | 40                      | 25              | 100 | 1.5                | 2                   | 0.6                      | 1.5                  | 40                    | 2                       | 4E/5E                |
| 2N6037      | 2N6034 | 4                     | 40                      | 750             | 15k | 2                  | 3                   | 2                        | 2                    | 40                    |                         | 4J/5J                |
| 2N5191      | 2N5194 | 4                     | 60                      | 25              | 100 | 1.5                | 2                   | 0.6                      | 1.5                  | 40                    | 2                       | 4E/5E                |
| MJE223      | MJE233 | 4                     | 60                      | 20              |     | 2                  | 1                   | 0.8                      | 2                    | 15                    | 50                      | 4P/5P                |
| MJE224      | MJE234 | 4                     | 60                      | 20              |     | 1                  | 1                   | 0.6                      | 1                    | 15                    | 50                      | 4P/5P                |
| MJE225      | MJE235 | 4                     | 60                      | 25              |     | 1                  | 1                   | 0.3                      | 0.5                  | 15                    | 50                      | 4P/5P                |
| MJE800      | MJE700 | 4                     | 60                      | 750             |     | 1.5                | 3                   | 2.5                      | 1.5                  | 40                    |                         | 4J/5J                |
| MJE801      | MJE701 | 4                     | 60                      | 750             |     | 2                  | 3                   | 2.8                      | 2                    | 40                    |                         | 4J/5J                |
| 2N6038      | 2N6035 | 4                     | 60                      | 750             | 15k | 2                  | 3                   | 2                        | 2                    | 40                    |                         | 4J/5J                |
| MJE240      | MJE250 | 4                     | 80                      | 15              |     | 2                  | 1                   | 0.8                      | 2                    | 15                    | 40                      | 4P/5P                |
| MJE241      | MJE251 | 4                     | 80                      | 20              |     | 1                  | 1                   | 0.6                      | 1                    | 15                    | 40                      | 4P/5P                |
| MJE242      | MJE252 | 4                     | 80                      | 10              |     | 1                  | 1                   | 0.3                      | 0.5                  | 15                    | 40                      | 4P/5P                |
| MJE802      | MJE702 | 4                     | 80                      | 750             |     | 1.5                | 3                   | 2.5                      | 1.5                  | 40                    |                         | 4J/5J                |
| MJE803      | MJE703 | 4                     | 80                      | 750             |     | 2                  | 3                   | 2.8                      | 2                    | 40                    |                         | 4J/5J                |
| 2N5192      | 2N5195 | 4                     | 80                      | 20              | 80  | 1.5                | 2                   | 0.6                      | 1.5                  | 40                    | 2                       | 4E/5E                |
| 2N6039      | 2N6036 | 4                     | 80                      | 750             | 15k | 2                  | 3                   | 2                        | 2                    | 40                    |                         | 4J/5J                |
| MJE243      | MJE253 | 4                     | 100                     | 20              |     | 1                  | 1                   | 0.6                      | 1                    | 15                    | 40                      | 4P/5P                |
| MJE244      | MJE254 | 4                     | 100                     | 10              |     | 1                  | 1                   | 0.3                      | 0.5                  | 15                    | 40                      | 4P/5P                |
| MJE200      | MJE210 | 5                     | 25                      | 45              | 180 | 2                  | 1                   | 0.75                     | 2                    | 15                    | 65                      | 4R/5R                |

Pinout: ECB