

**HORIZONTAL DEFLECTION**

| Type       | V <sub>CEO</sub> | V <sub>CBO</sub> | I <sub>c</sub> | P <sub>tot</sub> | Package    | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |       |        | Resistive Switching     |                         | Typical application |     |     |
|------------|------------------|------------------|----------------|------------------|------------|--|-------|--------|-------------------------|-------------------------|---------------------|-----|-----|
|            | (V)              | (V)              | (A)            | (W)              |            | (V)  | (A)   | (A)    | t <sub>s</sub> typ (μs) | t <sub>f</sub> typ (μs) | CTV                 | MON | B&W |
| BU808DFI*  | 700              | 1400             | 8              | 52               | ISOWATT218 | 1.6  | 5     | 0.5    | 3.0 ♦                   | 0.8 ♦                   | x                   |     |     |
| BUH315     | 700              | 1500             | 6              | 44               | ISOWATT218 | 1.5  | 3.0   | 0.75   | 1.6                     | 0.11                    | x                   |     |     |
| BUH315D    | 700              | 1500             | 6              | 50               | ISOWATT218 | 2.0  | 3.0   | 1.0    | 1.8                     | 0.2                     | x                   |     |     |
| THD218DHI  | 700              | 1500             | 7              | 50               | ISOWATT218 | 1.5  | 4.0   | 1.0    | 4.7 ♦                   | 0.48 ♦                  | x                   |     |     |
| THD277HI   | 700              | 1500             | 8              | 50               | ISOWATT218 | 0.9  | 4.0   | 1.0    | 2.1                     | 0.14                    | x                   | x   |     |
| BU508AFI   | 700              | 1500             | 8              | 50               | ISOWATT218 | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| BU508DFI   | 700              | 1500             | 8              | 50               | ISOWATT218 | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| S2000AFI   | 700              | 1500             | 8              | 50               | ISOWATT218 | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| THD219HI   | 700              | 1500             | 8              | 54               | ISOWATT218 | 1.5  | 6.0   | 1.5    | 2.3                     | 0.21                    | x                   | x   |     |
| BU508A     | 700              | 1500             | 8              | 125              | SOT-93     | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| BU508D     | 700              | 1500             | 8              | 125              | SOT-93     | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| BU208A     | 700              | 1500             | 8              | 150              | TO-3       | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| BU208D     | 700              | 1500             | 8              | 150              | TO-3       | 1.0  | 4.5   | 2.0    | 7.0 ♦                   | 0.55 ♦                  | x                   |     |     |
| BUH615D    | 700              | 1500             | 8              | 55               | ISOWATT218 | 1.5  | 6.0   | 1.5    | 2.7                     | 0.19                    | x                   |     |     |
| THD215HI   | 700              | 1500             | 8              | 55               | ISOWATT218 | 1.3  | 6.0   | 1.2    | 3.3 ♦                   | 0.16 ♦                  | x                   | x   |     |
| BUH1015HI  | 700              | 1500             | 14             | 70               | ISOWATT218 | 1.5  | 10    | 2.0    | 1.5                     | 0.11                    | x                   | x   |     |
| BUH1015    | 700              | 1500             | 14             | 160              | SOT-93     | 1.5  | 10    | 2.0    | 1.5                     | 0.11                    | x                   | x   |     |
| BUH1215    | 700              | 1500             | 16             | 200              | SOT-93     | 1.5  | 12    | 2.4    | 1.5                     | 0.11                    | x                   | x   |     |
| BUH417     | 700              | 1700             | 7              | 50               | ISOWATT218 | 1.5  | 4.0   | 1.0    | 2.1                     | 0.14                    | x                   |     |     |
| BUH2M20AP▲ | 1200             | 2000             | 0.03           | 40               | TO-220     | 5.0  | 0.002 | 0.0004 | -                       | -                       | x                   | x   |     |
| BU807*     | 150              | 330              | 8              | 60               | TO-220     | 1.5  | 5.0   | 0.05   | 0.55                    | 0.2                     |                     |     | x   |
| BU806FI*   | 200              | 400              | 8              | 30               | ISOWATT220 | 1.5  | 5.0   | 0.05   | 0.55                    | 0.2                     |                     |     | x   |
| BU406      | 200              | 400              | 7              | 60               | TO-220     | 1.0  | 5.0   | 0.5    | 1.0                     | 0.3                     |                     |     | x   |
| BU406D     | 200              | 400              | 7              | 60               | TO-220     | 1.0  | 5.0   | 0.65   | 1.0                     | 0.3                     |                     |     | x   |
| BU806*     | 200              | 400              | 8              | 60               | TO-220     | 1.5  | 5.0   | 0.05   | 0.55                    | 0.2                     |                     |     | x   |
| BU426A     | 400              | 900              | 6              | 114              | SOT-93     | 1.5  | 2.5   | 0.5    | 2.5                     | 0.2                     |                     |     | x   |
| BU326A     | 400              | 900              | 6              | 75               | TO-3       | 3.0  | 4.0   | 1.25   | 3.5                     | 0.5                     |                     |     | x   |

\* Darlington

▲ Dynamic focus

♦ Induct. load

CTV - Colour TV

MON - Monitors

B&amp;W - Black and White TV

## SWITCH MODE POWER SUPPLIES

| Type      | V <sub>CEO</sub> | V <sub>CBO</sub><br>V <sub>CES</sub> | I <sub>C</sub> | P <sub>tot</sub> | Package    | V <sub>CE(sat)</sub> @ I <sub>C</sub> / I <sub>B</sub> |      |      | Resistive Switching |                |
|-----------|------------------|--------------------------------------|----------------|------------------|------------|--|------|------|---------------------|----------------|
|           | (V)              | (V)                                  | (A)            | (W)              |            | (V)  | (A)  | (A)  | ts typ<br>(μs)      | tf typ<br>(μs) |
| SGSF441   | 400              | 850                                  | 10             | 95               | SOT-93     | 1.5  | 6.0  | 1.2  | 1.1                 | 0.2            |
| SGSIF461  | 400              | 850                                  | 15             | 57               | ISOWATT218 | 1.5  | 10   | 2.0  | 1.0                 | 0.15           |
| SGSF461   | 400              | 850                                  | 15             | 125              | SOT-93     | 1.5  | 10   | 2.0  | 1.0                 | 0.15           |
| BUF405    | 450              | 850                                  | 7.5            | 80               | TO-220     | 0.5 #  | 5.0  | 1.0  | 0.8 •               | 0.05 •         |
| BUF410FI  | 450              | 850                                  | 15             | 55               | ISOWATT218 | 0.5 #  | 10   | 2.0  | 1.9 •               | 0.06 •         |
| BUF410    | 450              | 850                                  | 15             | 125              | SOT-93     | 0.5 #  | 10   | 2.0  | 1.9 •               | 0.06 •         |
| BUF420    | 450              | 850                                  | 30             | 200              | SOT-93     | 0.5 #  | 20   | 4.0  | 1.1 •               | 0.05 •         |
| BUF420M   | 450              | 850                                  | 30             | 200              | TO-3       | 0.5 #  | 20   | 4.0  | 1.0 •               | 0.05 •         |
| BUX87     | 450              | 1000                                 | 0.5            | 40               | SOT-32     | 1.0  | 0.2  | 0.02 | 4.5                 | 0.5            |
| SGSF313PI | 450              | 1000                                 | 5              | 35               | ISOWATT220 | 0.75   | 2.5  | 0.5  | 1.1                 | 0.13           |
| BUF405A   | 450              | 1000                                 | 7.5            | 80               | TO-220     | 0.5 #  | 5.0  | 1.0  | 0.8 •               | 0.05 •         |
| SGSF463   | 450              | 1000                                 | 12             | 125              | SOT-93     | 1.5  | 7.0  | 1.4  | 1.0                 | 0.15           |
| BUF410A   | 450              | 1000                                 | 15             | 125              | SOT-93     | 0.5 #  | 10   | 2.0  | 1.9 •               | 0.06 •         |
| BUF420A   | 450              | 1000                                 | 30             | 200              | SOT-93     | 0.5 #  | 20   | 4.0  | 1.0 •               | 0.05 •         |
| BUL310PI  | 500              | 1000                                 | 5              | 35               | ISOWATT220 | 1.1  | 3.0  | 0.6  | 1.2 •               | 0.08 •         |
| SGSF324   | 600              | 1200                                 | 4              | 70               | TO-220     | 1.5  | 1.75 | 0.35 | 1.0                 | 0.5            |
| SGSIF344  | 600              | 1200                                 | 7              | 40               | ISOWATT220 | 1.5  | 3.5  | 0.7  | 1.0                 | 0.2            |
| SGSIF444  | 600              | 1200                                 | 7              | 50               | ISOWATT218 | 1.5  | 3.5  | 0.7  | 1.5                 | 0.2            |
| SGSF344   | 600              | 1200                                 | 7              | 72               | TO-220     | 1.5  | 3.5  | 0.7  | 1.0                 | 0.2            |
| SGSF464   | 600              | 1200                                 | 10             | 125              | SOT-93     | 1.5  | 6.0  | 1.2  | 1.3                 | 0.2            |
| SGSIF465  | 600              | 1300                                 | 10             | 57               | ISOWATT218 | 1.5  | 5.0  | 1.0  | 1.3                 | 0.2            |
| SGSF465   | 600              | 1300                                 | 10             | 125              | SOT-93     | 1.5  | 5.0  | 1.0  | 1.3                 | 0.2            |
| BUH315    | 700              | 1500                                 | 6              | 44               | ISOWATT218 | 1.5  | 3.0  | 0.75 | 1.6                 | 0.11           |
| THD277HI  | 700              | 1500                                 | 8              | 50               | ISOWATT218 | 0.9  | 4.0  | 1.0  | 2.1                 | 0.14           |

# Type

• Induct. load

**ELECTRONIC LIGHTING**

| Type     | V <sub>CEO</sub><br>(V) | V <sub>CES</sub><br>(V) | I <sub>c</sub><br>(A) | P <sub>tot</sub><br>(W) | Package | h <sub>FE</sub> @ I <sub>c</sub> / V <sub>CE</sub><br>min |      |     | Inductive Switching |                | Typical application |     |       |
|----------|-------------------------|-------------------------|-----------------------|-------------------------|---------|---|------|-----|---------------------|----------------|---------------------|-----|-------|
|          |                         |                         |                       |                         |         | (A)   | (V)  | (A) | (V)                 | ts typ<br>(μs) | tf typ<br>(μs)      | CFL | H. F. |
| BULT118  | 400                     | 700                     | 2                     | 40                      | SOT-32  | 8   | 2    | 5   | 0.8                 | 0.16           | x                   |     |       |
| BULT118D | 400                     | 700                     | 2                     | 40                      | SOT-32  | 8   | 2    | 5   | 0.8                 | 0.16           | x                   |     |       |
| BULK128D | 400                     | 700                     | 4                     | 50                      | SOT-82  | 8   | 2    | 5   | 2.0•                | 0.2•           | x                   | x   |       |
| BUL128   | 400                     | 700                     | 4                     | 60                      | TO-220  | 8   | 2    | 5   | 0.6                 | 0.10           | x                   | x   |       |
| BUL128D  | 400                     | 700                     | 4                     | 60                      | TO-220  | 8   | 2    | 5   | 1.8•                | 0.2•           | x                   | x   |       |
| BUL57    | 400                     | 700                     | 7                     | 75                      | TO-220  | 6   | 4    | 5   | 1.8                 | 0.06           |                     | x   |       |
| BUL67    | 400                     | 700                     | 8                     | 80                      | TO-220  | 15  | 1.5  | 3   | 2.1                 | 0.10           |                     |     | x     |
| BUL87    | 400                     | 700                     | 10                    | 90                      | TO-220  | 8   | 5    | 5   | 2.2                 | 0.10           |                     |     | x     |
| BULD38-1 | 400                     | 800                     | 5                     | 30                      | DPAK    | 8   | 2    | 5   | 0.6                 | 0.04           | x                   |     |       |
| BUL138   | 400                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 0.7                 | 0.05           | x                   | x   |       |
| BUL381   | 400                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 1.4/2.2•            | 0.8•           | x                   | x   |       |
| BUL381D  | 400                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 1.5/2.5•            | 0.8•           | x                   | x   |       |
| BUL382   | 400                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 1.7/2.5•            | 0.8•           | x                   | x   |       |
| BUL382D  | 400                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 1.7/2.6•            | 0.8•           | x                   | x   |       |
| BUL38D   | 450                     | 800                     | 5                     | 70                      | TO-220  | 8   | 2    | 5   | 1.0                 | 0.06           |                     |     | x     |
| BULK38D  | 450                     | 800                     | 5                     | 70                      | SOT-82  | 8   | 2    | 5   | 1.0                 | 0.06           |                     |     | x     |
| BUL58D   | 450                     | 800                     | 8                     | 75                      | TO-220  | 5   | 5    | 5   | 1.0                 | 0.09           |                     |     | x     |
| BUL510   | 450                     | 1000                    | 8                     | 80                      | TO-220  | 15  | 1    | 5   | 2.2                 | 0.08           |                     |     | x     |
| BUL810   | 450                     | 1000                    | 15                    | 125                     | SOT-93  | 10  | 5    | 5   | 1.5                 | 0.06           |                     |     | x     |
| BUL310   | 500                     | 1000                    | 5                     | 75                      | TO-220  | 10#   | 3    | 2.5 | 1.2                 | 0.08           |                     | x   |       |
| BUL213   | 600                     | 1300                    | 3                     | 60                      | TO-220  | 16  | 0.35 | 3   | 4.0                 | 0.25           |                     | x   |       |
| BUL216   | 800                     | 1600                    | 4                     | 70                      | TO-220  | 12  | 0.4  | 5   | 2.1                 | 0.45           |                     | x   |       |
| BUL416   | 800                     | 1600                    | 6                     | 85                      | TO-220  | 12  | 0.7  | 5   | 2.3                 | 0.65           |                     | x   |       |

• Resistive load # Typ CFL - Compact Fluorescent Lamp HF - High Frequency Ballast Hal Trasf. - Electronic transformer for halogen lamps

**ELECTRONIC IGNITION**

| Type      | V <sub>CEO</sub><br>(V) | V <sub>CBO</sub><br>V <sub>CES</sub><br>(V) | I <sub>c(cont)</sub><br>(A) | P <sub>tot</sub><br>(W) | Package    | h <sub>FE</sub> @ I <sub>c</sub> / V <sub>CE</sub><br>min |     |     | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |     |      |
|-----------|-------------------------|---|-----------------------------|-------------------------|------------|---|-----|-----|--|-----|------|
|           |                         |   |                             |                         |            | (A)   | (V) | (V) | (A)  | (A) |      |
| ST931ZT   | 350                     | 350/450                                     | 10                          | 125                     | TO-220     | 300   | 5   | 10  | 1.8  | 8   | 0.10 |
| BUB941ZT  | 350                     | 350/500                                     | 15                          | 150                     | D2PAK      | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941ZTFI | 350                     | 350/500                                     | 15                          | 55                      | ISOWATT220 | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941ZPFI | 350                     | 350/500                                     | 15                          | 65                      | ISOWATT218 | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941ZT   | 350                     | 350/500                                     | 15                          | 150                     | TO-220     | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941ZP   | 350                     | 350/500                                     | 15                          | 155                     | SOT-93     | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941Z    | 350                     | 350/500                                     | 15                          | 180                     | TO-3       | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| ST901T    | 350                     | 500   | 8                           | 30                      | TO-220     | 500   | 4   | 2   | 1.3  | 2   | 0.02 |
| BU911     | 400                     | 450   | 6                           | 60                      | TO-220     | 20  | 4   | 1.8 | 1.8  | 2.5 | 0.05 |
| BU931PFI  | 400                     | 500   | 15                          | 60                      | ISOWATT218 | 300   | 5   | 10  | 1.8  | 8   | 0.1  |
| BU931T    | 400                     | 500   | 10                          | 125                     | TO-220     | 300   | 5   | 10  | 1.8  | 8   | 0.1  |
| BUB931T   | 400                     | 500   | 10                          | 125                     | D2PAK      | 300   | 5   | 10  | 1.8  | 8   | 0.1  |
| BU931P    | 400                     | 500   | 15                          | 135                     | SOT-93     | 300   | 5   | 10  | 1.8  | 8   | 0.1  |
| BU931     | 400                     | 500   | 15                          | 175                     | TO-3       | 300   | 5   | 10  | 1.8  | 8   | 0.1  |
| BU941PFI  | 400                     | 500   | 15                          | 65                      | ISOWATT218 | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941T    | 400                     | 500   | 15                          | 150                     | TO-220     | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BUB941T   | 400                     | 500   | 15                          | 150                     | TO-220     | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941P    | 400                     | 500   | 15                          | 155                     | SOT-93     | 300   | 5   | 10  | 1.8  | 10  | 0.25 |
| BU941     | 400                     | 500   | 15                          | 180                     | TO-3       | 300   | 5   | 10  | 1.8  | 10  | 0.25 |



## "FASTSWITCH" SERIES (Hollow Emitter, Easy - To - Drive)

| Device    | V <sub>CEO</sub><br>(V) | V <sub>CBO</sub><br>V <sub>CES</sub><br>(V) | I <sub>c</sub><br>(A) | P <sub>tot</sub><br>(W) | Package<br>NPN | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |       |       | t <sub>s</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|-----------|-------------------------|---|-----------------------|-------------------------|----------------|--|-------|-------|------------------------|------------------------|
|           |                         |   |                       |                         |                | (V)  | (A)   | (A)   |                        |                        |
| SGSF465   | 600                     | 1300  | 10                    | 125                     | TO-218         | 1.5  | 5.00  | 1.00  | 3.5                    | 0.40                   |
| SGSF464   | 600                     | 1200  | 10                    | 125                     | TO-218         | 1.5  | 6.00  | 1.20  | 3.5                    | 0.40                   |
| SGSF444   | 600                     | 1200  | 7                     | 50                      | ISOWATT218     | 1.5  | 3.50  | 0.70  | 3.5                    | 0.30                   |
| SGSIF344  | 600                     | 1200  | 7                     | 35                      | ISOWATT220     | 1.5  | 3.50  | 0.70  | 3.5                    | 0.30                   |
| SGSF344   | 600                     | 1200  | 7                     | 85                      | TO-220         | 1.5  | 3.50  | 0.70  | 3.5                    | 0.30                   |
| SGSF324   | 600                     | 1200  | 4                     | 70                      | TO-220         | 1.5  | 1.75  | 0.35  | 4.5                    | 0.35                   |
| BUF420M   | 450                     | 850   | 30                    | 200                     | TO-3           | 0.5  | 20.00 | 4.00  | 2.0                    | 0.1                    |
| BUF460AV  | 450                     | 1000  | 80                    | 300                     | ISOTOP         | 2.0  | 60.00 | 12.00 | 2.0                    | 0.10                   |
| BUF420A   | 450                     | 1000  | 30                    | 200                     | TO-218         | 0.5  | 20.00 | 4.00  | 2.0                    | 0.10                   |
| BUF410A   | 450                     | 1000  | 15                    | 125                     | TO-218         | 0.5  | 10.00 | 2.00  | 1.8                    | 0.10                   |
| SGSF463   | 450                     | 1000  | 12                    | 125                     | TO-218         | 1.5  | 7.00  | 1.40  | 2.3                    | 0.50                   |
| BUF405A   | 450                     | 1000  | 7.5                   | 80                      | TO-220         | 2.0  | 5.00  | 1.00  | 1.8                    | 0.10                   |
| BUX87     | 450                     | 1000  | 0.5                   | 40                      | SOT-32         | 1.0  | 0.2   | 0.02  | 4.5                    | 0.5                    |
| SGSF313PI | 450                     | 1000  | 5                     | 35                      | ISOWATT220     | 0.75   | 2.5   | 0.5   | 1.1                    | 0.13                   |
| BUL310PI  | 500                     | 1000  | 5                     | 35                      | ISOWATT220     | 1.1  | 3.0   | 0.6   | 1.2                    | 0.08                   |
| BUF420    | 450                     | 850   | 30                    | 200                     | TO-218         | 0.5  | 20.00 | 4.00  | 2.0                    | 0.10                   |
| BUF410    | 450                     | 850   | 15                    | 125                     | TO-218         | 0.5  | 10.00 | 2.00  | 1.8                    | 0.10                   |
| BUF410FI  | 450                     | 850   | 15                    | 60                      | ISOWATT218     | 0.5  | 10.00 | 2.00  | 1.8                    | 0.10                   |
| BUF405    | 450                     | 850   | 7.5                   | 80                      | TO-220         | 2.0  | 5.00  | 1.00  | 1.8                    | 0.10                   |
| SGSIF461  | 400                     | 850   | 15                    | 65                      | ISOWATT218     | 1.5  | 10.00 | 2.00  | 2.3                    | 0.50                   |
| SGSF461   | 400                     | 850   | 15                    | 125                     | TO-218         | 1.5  | 10.00 | 2.00  | 2.3                    | 0.50                   |
| SGSF441   | 400                     | 850   | 10                    | 95                      | TO-218         | 1.5  | 6.00  | 1.20  | 2.5                    | 0.35                   |

**SWITCHING TRANSISTORS AND DARLINGTONS**

Internal schematic diagrams



| Device    | V <sub>CEO</sub><br>(V) | V <sub>CBO</sub><br>V <sub>CES</sub><br>(V) | I <sub>c</sub><br>(A) | P <sub>tot</sub><br>(W) | Package    | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |     |      | t <sub>s</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|-----------|-------------------------|---|-----------------------|-------------------------|------------|--|-----|------|------------------------|------------------------|
|           |                         |   |                       |                         |            | (V)  | (A) | (A)  |                        |                        |
| BUX98C    | 700                     | 1200  | 30                    | 250                     | TO-3       | 1.5  | 12  | 3.00 | 6.0                    | 0.60                   |
| BUV48CFI  | 700                     | 1200  | 15                    | 50                      | ISOWATT218 | 1.5  | 6   | 1.50 | 6.0                    | 0.60                   |
| BUV48C    | 700                     | 1200  | 15                    | 120                     | TO-218     | 1.5  | 6   | 1.50 | 6.0                    | 0.60                   |
| BUX48C    | 700                     | 1200  | 15                    | 175                     | TO-3       | 1.5  | 6   | 1.50 | 6.0                    | 0.60                   |
| BUV48B    | 600                     | 1200  | 15                    | 150                     | TO-218     | 3.0  | 10  | 4.00 | 3.0                    | 0.70                   |
| ESM6045AV | 450                     | 1000  | 72                    | 250                     | ISOTOP     | 2.0  | 60  | 2.40 | 6.0                    | 0.60                   |
| STF6045AV | 450                     | 1000  | 72                    | 250                     | ISOTOP     | 2.0  | 60  | 2.40 | 6.0                    | 0.40                   |
| BUV298AV  | 450                     | 1000  | 50                    | 250                     | ISOTOP     | 2.0  | 32  | 6.40 | 4.5                    | 0.40                   |
| ESM4045AV | 450                     | 1000  | 36                    | 150                     | ISOTOP     | 2.0  | 30  | 1.20 | 5.0                    | 0.60                   |
| BUX98A    | 450                     | 1000  | 30                    | 250                     | TO-3       | 1.5  | 16  | 3.20 | 4.5                    | 0.40                   |
| BUV98AV   | 450                     | 1000  | 30                    | 150                     | ISOTOP     | 2.5  | 16  | 3.20 | 5.0                    | 0.40                   |
| BUX98AP   | 450                     | 1000  | 24                    | 200                     | TO-218     | 1.2  | 16  | 3.20 | 4.5                    | 0.40                   |
| BUX48A    | 450                     | 1000  | 15                    | 175                     | TO-3       | 1.5  | 10  | 2.00 | 5.0                    | 0.40                   |
| BUV48A    | 450                     | 1000  | 15                    | 125                     | TO-218     | 1.5  | 10  | 2.00 | 5.0                    | 0.40                   |
| BUV48AFI  | 450                     | 1000  | 15                    | 50                      | ISOWATT218 | 1.5  | 8   | 1.60 | 5.0                    | 0.40                   |
| BUV47A    | 450                     | 1000  | 9                     | 120                     | TO-218     | 1.5  | 5   | 1.00 | 4.0                    | 0.40                   |
| BUV47AFI  | 450                     | 1000  | 9                     | 50                      | ISOWATT218 | 1.5  | 5   | 1.00 | 4.0                    | 0.40                   |
| BUT12AFI  | 450                     | 1000  | 8                     | 50                      | ISOWATT220 | 1.5  | 5   | 1.00 | -                      | -                      |
| BUV46A    | 450                     | 1000  | 5                     | 70                      | TO-220     | 1.5  | 2   | 0.40 | 3.0                    | 0.80                   |
| BUT11A    | 450                     | 1000  | 5                     | 83                      | TO-220     | 1.5  | 2.5 | 0.50 | 4.0                    | 0.80                   |
| BUX87     | 450                     | 1000  | 0.5                   | 40                      | SOT-32     | 1.0  | 0.2 | 0.02 | 4.5                    | 0.35                   |
| BUY69A    | 400                     | 1000  | 10                    | 100                     | TO-3       | 3.3  | 8   | 2.50 | 1.7                    | 0.30                   |
| BUV298V   | 450                     | 850   | 60                    | 250                     | ISOTOP     | 2.0  | 40  | 8.00 | 4.5                    | 0.40                   |
| BUX348    | 450                     | 850   | 45                    | 300                     | TO-3       | 0.9  | 30  | 6.00 | 4.5                    | 0.40                   |
| BUX98P    | 450                     | 850   | 30                    | 200                     | TO-218     | 0.9  | 20  | 4.00 | 4.5                    | 0.40                   |
| BUV98V    | 450                     | 850   | 30                    | 150                     | ISOTOP     | 2.5  | 20  | 4.00 | 5.0                    | 0.40                   |
| BUX98     | 400                     | 850   | 30                    | 250                     | TO-3       | 1.5  | 20  | 4.00 | 3.0                    | 0.80                   |
| BUX48     | 400                     | 850   | 15                    | 175                     | TO-3       | 1.5  | 10  | 2.00 | 5.0                    | 0.40                   |
| 2N6547    | 400                     | 850   | 15                    | 175                     | TO-3       | 1.5  | 10  | 2.00 | 0.0                    | 0.00                   |
| BUV48FI   | 400                     | 850   | 15                    | 50                      | ISOWATT218 | 1.5  | 10  | 2.00 | 5.0                    | 0.40                   |
| MJE13007A | 400                     | 850   | 8                     | 80                      | TO-220     | 1.5  | 5   | 1.00 | 3.0                    | 0.70                   |
| BUV46FI   | 400                     | 850   | 5                     | 30                      | ISOWATT220 | 1.5  | 2.5 | 0.50 | 3.0                    | 0.80                   |
| BUV46     | 400                     | 850   | 5                     | 70                      | TO-220     | 1.5  | 2.5 | 0.50 | 3.0                    | 0.80                   |
| BUX80     | 400                     | 800   | 10                    | 100                     | TO-3       | 3.0  | 8   | 2.50 | 3.5                    | 0.50                   |
| MJE13009  | 400                     | 700   | 12                    | 100                     | TO-220     | 1.5  | 8   | 1.60 | 3.0                    | 0.70                   |
| STI3007   | 400                     | 700   | 8                     | 80                      | TO-220     | 1.5  | 5   | 1.00 | 3.0                    | 0.70                   |
| STI3005   | 400                     | 700   | 4                     | 75                      | TO-220     | 1.0  | 4   | 1.00 | 3.5                    | 0.90                   |
| STI3003   | 400                     | 700   | 1.5                   | 50                      | SOT-32     | 1.0  | 1   | 0.25 | 1.8                    | 0.40                   |
| SGS13003  | 400                     | 700   | 1.5                   | 50                      | SOT-82     | 3.0  | 1.5 | 0.50 | 2.5                    | 0.50                   |
| STF8045DV | 450                     | 600   | 100                   | 270                     | ISOTOP     | 2.0  |     | 4.90 | 5.5                    | 0.50                   |
| ESM6045DV | 450                     | 600   | 84                    | 250                     | ISOTOP     | 2.0  | 70  | 4.00 | 5.5                    | 0.50                   |
| ESM5045DV | 450                     | 600   | 60                    | 175                     | ISOTOP     | 2.0  | 50  | 2.80 | 5.0                    | 0.50                   |

\* PNP Products

## SWITCHING TRANSISTORS AND DARLINGTONS (cont'd)

| Device    | V <sub>CEO</sub><br>(V) | V <sub>CBO</sub><br>V <sub>CES</sub><br>(V) | I <sub>c</sub><br>(A) | P <sub>tot</sub><br>(W) | Package | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |      |       | t <sub>s</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|-----------|-------------------------|---|-----------------------|-------------------------|---------|--|------|-------|------------------------|------------------------|
|           |                         |   |                       |                         |         | (V)  | (A)  | (A)   |                        |                        |
| ESM4045DV | 450                     | 600   | 42                    | 150                     | ISOTOP  | 2.0  | 35   | 2.00  | 4.5                    | 0.50                   |
| ESM3045DV | 450                     | 600   | 24                    | 125                     | ISOTOP  | 2.0  | 20   | 1.20  | 4.0                    | 0.40                   |
| BUT13P    | 400                     | 600   | 28                    | 150                     | TO-218  | 3.0  | 22   | 2.20  | 1.5                    | 0.60                   |
| BU810     | 400                     | 600   | 7                     | 75                      | TO-220  | 2.5  | 4    | 0.20  | -                      | -                      |
| BU801     | 400                     | 600   | 3                     | 40                      | SOT-32  | 3.0  | 2    | 0.20  | 1.0                    | 0.50                   |
| MJ10005   | 400                     | 500   | 20                    | 175                     | TO-3    | 1.9  | 10   | 0.40  | 1.5                    | 0.50                   |
| TIP50     | 400                     | 500   | 1                     | 40                      | TO-220  | 1.0  | 1    | 0.20  | -                      | -                      |
| MJE5852*  | 400                     | 450   | 8                     | 80                      | TO-220  | 2.0  | 4    | 1.00  | -                      | -                      |
| TIP49     | 350                     | 450   | 1                     | 40                      | TO-220  | 1.0  | 1    | 0.20  | -                      | -                      |
| 2N3439    | 350                     | 450   | 1                     | 10                      | TO-39   | 0.5  | 0.05 | 4 mA  | -                      | -                      |
| BUT232V   | 300                     | 400   | 140                   | 300                     | ISOTOP  | 1.9  | 70   | 7.00  | 5.0                    | 0.40                   |
| ESM3030DV | 300                     | 400   | 100                   | 225                     | ISOTOP  | 2.2  | 85   | 2.40  | 3.5                    | 0.60                   |
| BUT32V    | 300                     | 400   | 80                    | 250                     | ISOTOP  | 1.9  | 40   | 4.00  | 3.0                    | 0.40                   |
| ESM2030DV | 300                     | 400   | 67                    | 150                     | ISOTOP  | 2.2  | 56   | 1.60  | 3.0                    | 0.60                   |
| BUT102    | 300                     | 400   | 50                    | 300                     | TO-3    | 0.9  | 40   | 4.00  | 3.0                    | 0.40                   |
| BUT92A    | 300                     | 400   | 50                    | 250                     | TO-3    | 0.9  | 30   | 3.00  | 3.0                    | 0.40                   |
| BUT72I    | 300                     | 400   | 40                    | 115                     | TOP-3I  | 0.9  | 30   | 3.00  | 3.0                    | 0.40                   |
| TIP48     | 300                     | 400   | 1                     | 40                      | TO-220  | 1.0  | 1    | 0.20  | -                      | -                      |
| BUV28     | 200                     | 400   | 12                    | 85                      | TO-220  | 1.5  | 6    | 0.60  | 1.5                    | 0.25                   |
| 2N5657    | 350                     | 375   | 0.5                   | 20                      | SOT-32  | 2.5  | 0.25 | 0.03  | -                      | -                      |
| 2N5416*   | 300                     | 350   | 1                     | 10                      | TO-39   | 2.5  | 0.05 | 0.01  | -                      | -                      |
| BUR52     | 250                     | 350   | 60                    | 350                     | TO-3    | 1.8  | 25   | 2.00  | 2.0                    | 0.60                   |
| BUW52I    | 250                     | 350   | 20                    | 75                      | TOP-3I  | 0.9  | 8    | 0.80  | 1.6                    | 0.30                   |
| TIP47     | 250                     | 350   | 1                     | 40                      | TO-220  | 1.0  | 1    | 0.20  | -                      | -                      |
| MJE3440   | 250                     | 350   | 0.3                   | 15                      | SOT-32  | 0.5  | 0.05 | 4 mA  | -                      | -                      |
| MJE350*   | 300                     | 300   | 0.5                   | 20                      | SOT-32  | -  | -    | -     | -                      | -                      |
| MJE340    | 300                     | 300   | 0.5                   | 20                      | SOT-32  | -  | -    | -     | -                      | -                      |
| BUX22     | 250                     | 300   | 40                    | 350                     | TO-3    | 1.5  | 20   | 2.50  | 2.0                    | 0.50                   |
| BUV22     | 250                     | 300   | 40                    | 250                     | TO-3    | 0.6  | 25   | 2.50  | 2.0                    | 0.50                   |
| BUX12     | 250                     | 300   | 20                    | 150                     | TO-3    | 1.0  | 5    | 0.50  | 2.0                    | 0.50                   |
| 2N3440    | 250                     | 300   | 1                     | 10                      | TO-39   | 0.5  | 0.05 | 4 mA  | -                      | -                      |
| BUR51     | 200                     | 300   | 60                    | 350                     | TO-3    | 1.0  | 30   | 2.00  | 2.0                    | 0.60                   |
| BUV61     | 200                     | 300   | 50                    | 250                     | TO-3    | 1.2  | 40   | 5.00  | 2.4                    | 0.25                   |
| BUV21     | 200                     | 250   | 40                    | 250                     | TO-3    | 0.6  | 12   | 1.20  | 1.8                    | 0.40                   |
| BUX41     | 200                     | 250   | 15                    | 120                     | TO-3    | 1.6  | 8    | 1.00  | 1.7                    | 0.80                   |
| BUY49S    | 200                     | 250   | 3                     | 10                      | TO-39   | 0.2  | 0.5  | 0.05  | -                      | -                      |
| BUW50     | 125                     | 250   | 25                    | 150                     | TO-218  | 0.9  | 20   | 2.00  | 1.7                    | 0.30                   |
| BUV50     | 125                     | 250   | 25                    | 150                     | TO-3    | 1.2  | 24   | 3.00  | 1.7                    | 0.30                   |
| BUV40     | 125                     | 250   | 20                    | 120                     | TO-3    | 1.2  | 15   | 1.90  | 1.7                    | 0.30                   |
| BUW90     | 125                     | 250   | 20                    | 125                     | TO-218  | 0.9  | 11   | 1.10  | 1.7                    | 0.30                   |
| BUV27     | 120                     | 240   | 12                    | 85                      | TO-220  | 0.7  | 4    | 0.40  | 2.0                    | 0.15                   |
| BUX41N    | 160                     | 220   | 18                    | 120                     | TO-3    | 1.6  | 12   | 1.50  | 1.5                    | 0.80                   |
| 2N5415*   | 200                     | 200   | 1                     | 10                      | TO-39   | 2.5  | 0.05 | 0.01  | -                      | -                      |
| BUY48     | 170                     | 200   | 7                     | 10                      | TO-39   | 1.0  | 5    | 0.50  | -                      | -                      |
| BUT230V   | 125                     | 200   | 200                   | 300                     | ISOTOP  | 1.5  | 200  | 20.00 | 2.0                    | 0.30                   |
| BUT30V    | 125                     | 200   | 100                   | 250                     | ISOTOP  | 1.5  | 100  | 10.00 | 2.0                    | 0.20                   |
| BUR50S    | 125                     | 200   | 70                    | 350                     | TO-3    | 1.0  | 35   | 2.00  | 2.0                    | 2.00                   |
| BUT90     | 125                     | 200   | 50                    | 250                     | TO-3    | 0.9  | 70   | 7.00  | 2.0                    | 0.30                   |
| BUT100    | 125                     | 200   | 50                    | 300                     | TO-3    | 0.9  | 100  | 10.00 | 2.0                    | 0.20                   |
| BUT70     | 125                     | 200   | 40                    | 200                     | TO-218  | 0.9  | 70   | 7.00  | 1.8                    | 0.20                   |
| BUV26     | 90                      | 180   | 14                    | 85                      | TO-220  | 1.5  | 12   | 1.20  | 2.0                    | 0.15                   |
| BUX20     | 125                     | 160   | 50                    | 350                     | TO-3    | 1.2  | 50   | 5.00  | 1.2                    | 0.30                   |
| BUV20     | 125                     | 160   | 50                    | 250                     | TO-3    | 0.6  | 25   | 2.50  | 1.2                    | 0.30                   |
| BUX10     | 125                     | 160   | 25                    | 150                     | TO-3    | 0.6  | 10   | 1.00  | 1.2                    | 0.30                   |
| BUX40     | 125                     | 160   | 20                    | 120                     | TO-3    | 1.6  | 15   | 1.88  | 1.0                    | 0.40                   |
| BUX10P    | 125                     | 160   | 10                    | 106                     | TO-218  | 0.6  | 10   | 1.00  | 1.2                    | 0.30                   |
| BUW89     | 90                      | 160   | 25                    | 125                     | TO-218  | 0.9  | 15   | 1.50  | 1.7                    | 0.30                   |
| BUW49     | 80                      | 160   | 30                    | 150                     | TO-218  | 1.2  | 30   | 3.00  | 1.7                    | 0.50                   |
| ESM2012DV | 125                     | 150   | 120                   | 175                     | ISOTOP  | 2.0  | 100  | 1.00  | 2.0                    | 0.30                   |

\* PNP Products

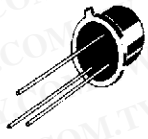
**SWITCHING TRANSISTORS AND DARLINGTONS (cont'd)**

| Device  | V <sub>CEO</sub><br>(V) | V <sub>CB0</sub><br>V <sub>CES</sub><br>(V) | I <sub>c</sub><br>(A) | P <sub>tot</sub><br>(W) | Package | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |     |      | t <sub>s</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|---------|-------------------------|---|-----------------------|-------------------------|---------|--|-----|------|------------------------|------------------------|
|         |                         |   |                       |                         |         | (V)  | (A) | (A)  |                        |                        |
| 2N5038  | 90                      | 150   | 20                    | 140                     | TO-3    | 2.5  | 20  | 5.00 | 1.5                    | 0.50                   |
| 2N5682  | 120                     | 120   | 1                     | 10                      | TO-39   | 1.0  | 0.5 | 0.05 | -                      | -                      |
| 2N5680* | 120                     | 120   | 1                     | 10                      | TO-39   | 1.0  | 0.5 | 0.05 | -                      | -                      |
| BDY90   | 100                     | 120   | 10                    | 60                      | TO-3    | 1.5  | 10  | 1.00 | 1.3                    | 0.20                   |
| BUV18   | 60                      | 120   | 80                    | 250                     | TO-3    | 1.5  | 80  | 8.00 | 1.1                    | 0.25                   |
| BUW48   | 60                      | 120   | 30                    | 150                     | TO-218  | 1.4  | 40  | 4.00 | 1.7                    | 0.50                   |
| BUW38   | 60                      | 120   | 30                    | 150                     | TO-3    | 1.4  | 40  | 4.00 | 1.7                    | 0.50                   |
| BFX34   | 60                      | 120   | 5                     | 5                       | TO-39   | 1.0  | 5   | 0.50 | -                      | -                      |
| 2N5339  | 100                     | 100   | 5                     | 6                       | TO-39   | 1.2  | 5   | 0.50 | 2.0                    | 0.20                   |
| 2N5681  | 100                     | 100   | 1                     | 10                      | TO-39   | 1.0  | 0.5 | 0.05 | -                      | -                      |
| 2N5154  | 80                      | 100   | 5                     | 10                      | TO-39   | 1.5  | 5   | 0.50 | -                      | -                      |
| BSS44*  | 60                      | 65  | 5                     | 5                       | TO-39   | 1.0  | 5   | 0.50 | -                      | -                      |

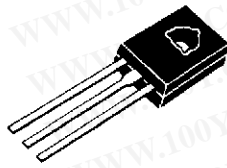
\* PNP Products

**POWER BIPOLAR**

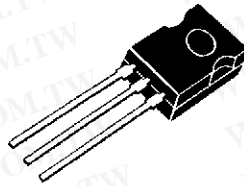
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 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
 Http://www.100y.com.tw



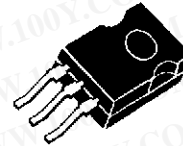
TO-39



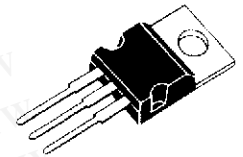
TO-126/SOT-32



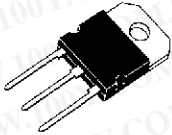
SOT-82



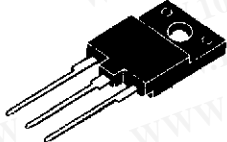
SOT-194



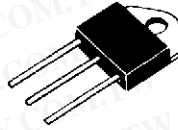
TO-220



SOT-93



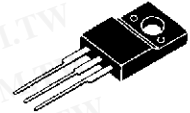
ISOWATT218  
(Fully Isolated)



TO-31



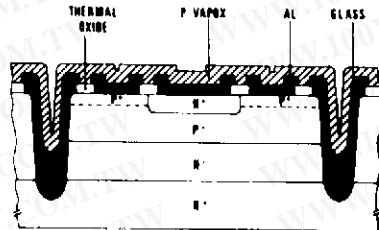
TO-3



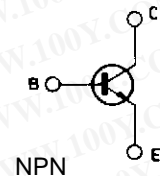
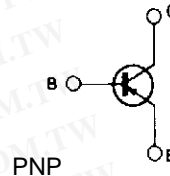
ISOWATT220  
(Fully Isolated)

Epitaxial base –  $I_{CM} : 1 \rightarrow 3 \text{ A}$ ,  $V_{CE0} : 22 \rightarrow 100 \text{ V}$

NPN and PNP types (perfect complementary pairs)  
 Medium  $V_{CE0}$  range (22 to 100 V)  
 Medium switching speed  
 Medium  $f_T$  (2 to 20 MHz)  
 High ruggedness



Internal schematic diagrams



**GENERAL PURPOSE TRANSISTORS**

| Device  | $V_{CE0}$<br>(V) | $V_{CB0}$<br>$V_{CES}$<br>(V) | $I_C$<br>(A) | $P_{tot}$<br>(W) | Package | $h_{FE}$ $I_C / V_{CE(sat)}$ |     | $V_{CE} @ I_C / I_B$ |     |      |      |
|---------|------------------|-------------------------------|--------------|------------------|---------|------------------------------|-----|----------------------|-----|------|------|
|         |                  |                               |              |                  |         | (A)                          | (V) | (V)                  | (A) | (mA) |      |
| TIP33C  | 100              | 140                           | 10           | 80               | TO-218  | 20                           | 3.0 | 4                    | 1.0 | 3.0  | 300  |
| TIP34C* | 100              | 140                           | 10           | 80               | TO-218  | 20                           | 3.0 | 4                    | 1.0 | 3.0  | 300  |
| BD242C* | 100              | 115                           | 3            | 40               | TO-220  | 25                           | 1.0 | 4                    | 1.2 | 3.0  | 600  |
| BD241C  | 100              | 115                           | 3            | 40               | TO-220  | 25                           | 1.0 | 4                    | 1.2 | 3.0  | 600  |
| BD239C  | 100              | 115                           | 2            | 30               | TO-220  | 15                           | 1.0 | 4                    | 0.7 | 1.0  | 200  |
| BD240C* | 100              | 115                           | 2            | 30               | TO-220  | 15                           | 1.0 | 4                    | 0.7 | 1.0  | 200  |
| TIP35C  | 100              | 100                           | 25           | 125              | TO-218  | 25                           | 1.5 | 4                    | 1.8 | 15.0 | 1500 |
| TIP36C* | 100              | 100                           | 25           | 125              | TO-218  | 25                           | 1.5 | 4                    | 1.8 | 15.0 | 1500 |
| BDW52C* | 100              | 100                           | 15           | 125              | TO-3    | 20                           | 5.0 | 4                    | 1.0 | 5.0  | 500  |
| BD912*  | 100              | 100                           | 15           | 90               | TO-220  | 15                           | 5.0 | 4                    | 1.0 | 5.0  | 500  |
| BDW51C  | 100              | 100                           | 15           | 125              | TO-3    | 20                           | 5.0 | 4                    | 1.0 | 5.0  | 500  |
| BD911   | 100              | 100                           | 15           | 90               | TO-220  | 15                           | 5.0 | 4                    | 1.0 | 5.0  | 500  |
| BD711   | 100              | 100                           | 12           | 75               | TO-220  | 15                           | 4.0 | 4                    | 1.0 | 4.0  | 400  |
| BD712*  | 100              | 100                           | 12           | 75               | TO-220  | 15                           | 4.0 | 4                    | 1.0 | 4.0  | 400  |
| TIP42C* | 100              | 100                           | 6            | 65               | TO-220  | 15                           | 3.0 | 4                    | 1.5 | 6.0  | 600  |
| TIP41C  | 100              | 100                           | 6            | 65               | TO-220  | 15                           | 3.0 | 4                    | 1.5 | 6.0  | 600  |
| BD243C  | 100              | 100                           | 6            | 65               | TO-220  | 15                           | 3.0 | 4                    | 1.5 | 6.0  | 1000 |
| BD244C* | 100              | 100                           | 6            | 65               | TO-220  | 15                           | 3.0 | 4                    | 1.5 | 6.0  | 1000 |
| TIP31C  | 100              | 100                           | 3            | 40               | TO-220  | 25                           | 1.0 | 4                    | 1.2 | 3.0  | 375  |
| TIP32C* | 100              | 100                           | 3            | 40               | TO-220  | 25                           | 1.0 | 4                    | 1.2 | 3.0  | 375  |
| TIP29C  | 100              | 100                           | 1            | 30               | TO-220  | 15                           | 1.0 | 4                    | 0.7 | 1.0  | 125  |
| TIP30C* | 100              | 100                           | 1            | 30               | TO-220  | 15                           | 1.0 | 4                    | 0.7 | 1.0  | 125  |

\* PNP Products



**GENERAL PURPOSE TRANSISTORS (cont'd)**

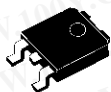
| Device    | V <sub>CEO</sub> | V <sub>CBO</sub><br>V <sub>CES</sub> | I <sub>c</sub> | P <sub>tot</sub> | Package    | h <sub>FE</sub> | I <sub>c</sub> / V <sub>CE(sat)</sub> |     | V <sub>CE</sub> @ I <sub>c</sub> / I <sub>B</sub> |      |      |
|-----------|------------------|--------------------------------------|----------------|------------------|------------|-----------------|---------------------------------------|-----|---|------|------|
|           | (V)              | (V)                                  | (A)            | (W)              |            |                 | (A)                                   | (V) | (V)   | (A)  | (mA) |
| MJ802     | 90               | 100                                  | 30             | 200              | TO-3       | 25              | 7.5                                   | 2   | 0.8   | 7.5  | 750  |
| MJ4502*   | 90               | 100                                  | 30             | 200              | TO-3       | 25              | 7.5                                   | 2   | 0.8   | 7.5  | 750  |
| 2N3792*   | 80               | 100                                  | 10             | 150              | TO-3       | 30              | 3.0                                   | 2   | 0.8   | 5.0  | 500  |
| MJE182    | 80               | 100                                  | 3              | 12.5             | SOT-32     | 12              | 1.5                                   | 1   | 0.9   | 1.5  | 150  |
| MJE172*   | 80               | 100                                  | 3              | 12.5             | SOT-32     | 12              | 1.5                                   | 1   | 0.9   | 1.5  | 150  |
| BD380*    | 80               | 100                                  | 2              | 25               | SOT-32     | 30              | 0.5                                   | 4   | -   | -    | -    |
| BD238*    | 80               | 100                                  | 2              | 25               | SOT-32     | 25              | 1.0                                   | 2   | 0.6   | 1.0  | 100  |
| BD237     | 80               | 100                                  | 2              | 25               | SOT-32     | 25              | 1.0                                   | 2   | 0.6   | 1.0  | 100  |
| MJ2955*   | 60               | 100                                  | 15             | 115              | TO-3       | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| 2N3055    | 60               | 100                                  | 15             | 115              | TO-3       | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| BDX18*    | 60               | 100                                  | 7              | 117              | TO-3       | 20              | 4.0                                   | 4   | -   | -    | -    |
| 2N6488    | 90               | 90                                   | 15             | 75               | TO-220     | 20              | 5.0                                   | 4   | 1.3   | 5.0  | 500  |
| BD241B    | 80               | 90                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 600  |
| BD242B*   | 80               | 90                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 600  |
| MJ14003*  | 80               | 80                                   | 60             | 300              | TO-3       | 5               | 60.0                                  | 3   | 3.0   | 60.0 | 12   |
| MJ14002   | 80               | 80                                   | 60             | 300              | TO-3       | 5               | 60.0                                  | 3   | 3.0   | 60.0 | 12   |
| 2N5884*   | 80               | 80                                   | 25             | 200              | TO-3       | 35              | 3.0                                   | 4   | 1.0   | 15.0 | 1500 |
| 2N5886    | 80               | 80                                   | 25             | 200              | TO-3       | 35              | 3.0                                   | 4   | 1.0   | 15.0 | 1500 |
| TIP35B    | 80               | 80                                   | 25             | 125              | TO-218     | 25              | 1.5                                   | 4   | 1.8   | 15.0 | 1500 |
| TIP36B*   | 80               | 80                                   | 25             | 125              | TO-218     | 25              | 1.5                                   | 4   | 1.8   | 15.0 | 1500 |
| BD909     | 80               | 80                                   | 15             | 90               | TO-220     | 15              | 5.0                                   | 4   | 1.0   | 5.0  | 500  |
| BD910*    | 80               | 80                                   | 15             | 90               | TO-220     | 15              | 5.0                                   | 4   | 1.0   | 5.0  | 500  |
| BD710*    | 80               | 80                                   | 12             | 75               | TO-220     | 15              | 4.0                                   | 4   | 1.0   | 4.0  | 400  |
| BD709     | 80               | 80                                   | 12             | 75               | TO-220     | 15              | 4.0                                   | 4   | 1.0   | 4.0  | 400  |
| D44H11    | 80               | 80                                   | 10             | 50               | TO-220     | 40              | 4.0                                   | 1   | 1.0   | 8.0  | 400  |
| BD537     | 80               | 80                                   | 8              | 50               | TO-220     | 15              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |
| BD538*    | 80               | 80                                   | 8              | 50               | TO-220     | 15              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |
| BD243B    | 80               | 80                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 1000 |
| TIP41B    | 80               | 80                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 600  |
| TIP42B*   | 80               | 80                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 600  |
| BD244B*   | 80               | 80                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 1000 |
| BD441     | 80               | 80                                   | 4              | 36               | SOT-32     | 15              | 2.0                                   | 1   | 0.8   | 2.0  | 200  |
| BD442*    | 80               | 80                                   | 4              | 36               | SOT-32     | 15              | 2.0                                   | 1   | 0.8   | 2.0  | 200  |
| 2N5192    | 80               | 80                                   | 4              | 40               | SOT-32     | 20              | 1.5                                   | 2   | 0.6   | 1.5  | 150  |
| 2N5195*   | 80               | 80                                   | 4              | 40               | SOT-32     | 20              | 1.5                                   | 2   | 0.6   | 1.5  | 150  |
| BD179     | 80               | 80                                   | 3              | 30               | SOT-32     | 40              | 0.2                                   | 2   | 0.8   | 1.0  | 100  |
| BD179-16  | 80               | 80                                   | 3              | 30               | SOT-32     | 100             | 0.2                                   | 2   | 0.8   | 1.0  | 100  |
| TIP32B*   | 80               | 80                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 375  |
| BD139     | 80               | 80                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| BD140*    | 80               | 80                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| BD140-10* | 80               | 80                                   | 1.5            | 12.5             | SOT-32     | 63              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| BD139-10  | 80               | 80                                   | 1.5            | 12.5             | SOT-32     | 63              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| 2N4920*   | 80               | 80                                   | 1              | 30               | SOT-32     | 30              | 0.5                                   | 1   | 0.6   | 1.0  | 100  |
| 2N6107*   | 70               | 80                                   | 7              | 40               | TO-220     | 30              | 4.0                                   | 2   | 1.0   | 2.0  | 200  |
| 2N6487    | 70               | 70                                   | 15             | 75               | TO-220     | 20              | 5.0                                   | 4   | 1.3   | 5.0  | 500  |
| 2N6490*   | 70               | 70                                   | 15             | 75               | TO-220     | 20              | 5.0                                   | 4   | 1.3   | 5.0  | 500  |
| 2N3772    | 60               | 100                                  | 10             | 150              | TO-3       | 15              | 10.0                                  | 4   | 2.0   | 15.0 | 1500 |
| TIP2955*  | 60               | 70                                   | 15             | 90               | TO-218     | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| TIP3055   | 60               | 70                                   | 15             | 90               | TO-218     | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| MJE2955T* | 60               | 70                                   | 10             | 75               | TO-220     | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| MJE3055T  | 60               | 70                                   | 10             | 75               | TO-220     | 20              | 4.0                                   | 4   | 1.1   | 4.0  | 400  |
| BD241A    | 60               | 70                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 600  |
| BD242A*   | 60               | 70                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 600  |
| BD908F1*  | 60               | 60                                   | 15             | 35               | ISOWATT220 | 15              | 5.0                                   | 4   | 1.0   | 5.0  | 500  |
| BD707     | 60               | 60                                   | 12             | 75               | TO-220     | 15              | 4.0                                   | 4   | 1.0   | 4.0  | 400  |
| BD708*    | 60               | 60                                   | 12             | 75               | TO-220     | 15              | 4.0                                   | 4   | 1.0   | 4.0  | 400  |
| D44H8     | 60               | 60                                   | 10             | 50               | TO-220     | 40              | 4.0                                   | 1   | 1.0   | 8.0  | 400  |
| D45H8*    | 60               | 60                                   | 10             | 50               | TO-220     | 40              | 4.0                                   | 1   | 1.0   | 8.0  | 400  |
| BD535     | 60               | 60                                   | 8              | 50               | TO-220     | 25              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |

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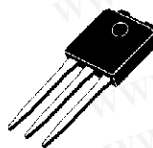
## GENERAL PURPOSE TRANSISTORS (cont'd)

| Device   | V <sub>CEO</sub> | V <sub>CB0</sub><br>V <sub>CES</sub> | I <sub>c</sub> | P <sub>tot</sub> | Package    | h <sub>FE</sub> | I <sub>c</sub> / V <sub>CE(sat)</sub> |     | V <sub>CE</sub> @ I <sub>c</sub> / I <sub>B</sub> |      |      |
|----------|------------------|--------------------------------------|----------------|------------------|------------|-----------------|---------------------------------------|-----|---|------|------|
|          | (V)              | (V)                                  | (A)            | (W)              |            |                 | (A)                                   | (V) | (V)   | (A)  | (mA) |
| BD536*   | 60               | 60                                   | 8              | 50               | TO-220     | 25              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |
| TIP42A*  | 60               | 60                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 600  |
| TIP41A   | 60               | 60                                   | 6              | 65               | TO-220     | 15              | 3.0                                   | 4   | 1.5   | 6.0  | 600  |
| 2N5191   | 60               | 60                                   | 4              | 40               | SOT-32     | 25              | 1.5                                   | 2   | 0.6   | 1.5  | 150  |
| BD440*   | 60               | 60                                   | 4              | 36               | SOT-32     | 25              | 2.0                                   | 1   | 0.8   | 2.0  | 200  |
| BD439    | 60               | 60                                   | 4              | 36               | SOT-32     | 25              | 2.0                                   | 1   | 0.8   | 2.0  | 200  |
| TIP31A   | 60               | 60                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 375  |
| TIP32A*  | 60               | 60                                   | 3              | 40               | TO-220     | 25              | 1.0                                   | 4   | 1.2   | 3.0  | 375  |
| BD236*   | 60               | 60                                   | 2              | 25               | SOT-32     | 25              | 1.0                                   | 2   | 0.6   | 1.0  | 100  |
| BD235    | 60               | 60                                   | 2              | 25               | SOT-32     | 25              | 1.0                                   | 2   | 0.6   | 1.0  | 100  |
| BD138*   | 60               | 60                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| BD137    | 60               | 60                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| TIP30A*  | 60               | 60                                   | 1              | 30               | TO-220     | 15              | 1.0                                   | 4   | 0.7   | 1.0  | 125  |
| TIP29A   | 60               | 60                                   | 1              | 30               | TO-220     | 15              | 1.0                                   | 4   | 0.7   | 1.0  | 125  |
| 2N6489*  | 50               | 50                                   | 15             | 75               | TO-220     | 20              | 5.0                                   | 4   | 1.3   | 5.0  | 500  |
| 2N3771   | 40               | 50                                   | 15             | 150              | TO-3       | 15              | 15.0                                  | 4   | 1.4   | 10.0 | 1000 |
| D45H5*   | 45               | 45                                   | 10             | 50               | TO-220     | 40              | 4.0                                   | 1   | 1.0   | 8.0  | 400  |
| BD534*   | 45               | 45                                   | 8              | 50               | TO-220     | 25              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |
| BD534FI* | 45               | 45                                   | 8              | 22               | ISOWATT220 | 25              | 2.0                                   | 2   | 0.8   | 2.0  | 200  |
| BD437    | 45               | 45                                   | 4              | 36               | SOT-32     | 40              | 2.0                                   | 1   | 0.6   | 2.0  | 200  |
| BD438*   | 45               | 45                                   | 4              | 36               | SOT-32     | 40              | 2.0                                   | 1   | 0.6   | 2.0  | 200  |
| BD135    | 45               | 45                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| BD136*   | 45               | 45                                   | 1.5            | 12.5             | SOT-32     | 40              | 0.2                                   | 2   | 0.5   | 0.5  | 50   |
| MJE521   | 40               | 40                                   | 4              | 40               | SOT-32     | 40              | 1.0                                   | 1   | -   | -    | -    |
| 2N5193*  | 40               | 40                                   | 4              | 40               | SOT-32     | 25              | 1.5                                   | 2   | 0.6   | 1.5  | 150  |
| 2N4918*  | 40               | 40                                   | 1              | 30               | SOT-32     | 30              | 0.5                                   | 1   | 0.6   | 1.0  | 100  |
| 2N6111*  | 30               | 40                                   | 7              | 40               | TO-220     | 30              | 4.0                                   | 3   | 1.0   | 3.0  | 300  |
| MJE210*  | 25               | 40                                   | 5              | 15               | SOT-32     | 70              | 0.5                                   | 1   | 0.3   | 0.5  | 50   |
| BD435    | 32               | 32                                   | 4              | 36               | SOT-32     | 50              | 2.0                                   | 1   | 0.5   | 2.0  | 200  |
| BD436*   | 32               | 32                                   | 4              | 36               | SOT-32     | 50              | 2.0                                   | 1   | 0.5   | 2.0  | 200  |
| BD433    | 22               | 22                                   | 4              | 36               | SOT-32     | 50              | 2.0                                   | 1   | 0.5   | 2.0  | 200  |
| BD434*   | 22               | 22                                   | 4              | 36               | SOT-32     | 50              | 2.0                                   | 1   | 0.5   | 2.0  | 200  |

\* PNP Products



DPAK



IPAK

**DPAK/IPAK**

| Type       | V <sub>CEO</sub> | V <sub>CB0</sub><br>V <sub>CES</sub> | I <sub>C(cont)</sub> | P <sub>tot</sub> | h <sub>FE</sub> @ I <sub>c</sub> / V <sub>CE</sub> |      | V <sub>CE(sat)</sub> @ I <sub>c</sub> / I <sub>B</sub> |     |     | Application |                 |
|------------|------------------|--------------------------------------|----------------------|------------------|--|------|--|-----|-----|-------------|-----------------|
|            |                  |                                      |                      |                  | min  |      | (V)  | (A) | (A) |             |                 |
| NPN        | (V)              | (V)                                  | (A)                  | (W)              |  | (A)  | (V)  | (V) | (A) | (A)         |                 |
| MJD3055T4  | 60               | 70                                   | 10.0                 | 20               | 20   | 4    | 4  | 1.1 | 4.0 | 0.4         | GEN. PURP. TRAN |
| MJD31BT4   | 80               | 80                                   | 3.0                  | 15               | 10   | 3    | 4  | 1.2 | 3.0 | 0.375       | GEN. PURP. TRAN |
| STD909T4   | 80               | 80                                   | 15.0                 | 20               | 15   | 5    | 4  | 1.0 | 5.0 | 0.5         | GEN. PURP. TRAN |
| MJD112T4   | 100              | 100                                  | 2.0                  | 20               | 1000   | 2    | 3  | 2.0 | 2.0 | 0.008       | GEN. PURP. TRAN |
| MJD31CT4   | 100              | 100                                  | 3.0                  | 15               | 10   | 3    | 4  | 1.2 | 3.0 | 0.375       | GEN. PURP. TRAN |
| MJD122T4   | 100              | 100                                  | 5.0                  | 20               | 1000   | 4    | 4  | 2.0 | 4.0 | 0.016       | GEN. PURP. TRAN |
| MJD47T4    | 250              | 350                                  | 1.0                  | 15               | 10   | 1    | 10   | 1.0 | 1.0 | 0.2         | SWITCHING       |
| MJD340T4   | 300              | 300                                  | 0.5                  | 15               | 30   | 0.05 | 10   | -   | -   | -           | SWITCHING       |
| BULD38-1   | 400              | 800                                  | 5.0                  | 30               | 8  | 2    | 5  | 1.1 | 3.0 | 0.8         | LIGHTING        |
| BUXD87-1   | 450              | 1000                                 | 0.5                  | 20               | 12   | 0.04 | 5  | 1.0 | 0.2 | 0.02        | SMPS            |
| MJD2955T4* | 60               | 70                                   | 10.0                 | 20               | 20   | 4    | 4  | 1.1 | 4.0 | 0.4         | GEN. PURP. TRAN |
| MJD32BT4*  | 80               | 80                                   | 3.0                  | 15               | 10   | 3    | 4  | 1.2 | 3.0 | 0.375       | GEN. PURP. TRAN |
| STD910T4*  | 80               | 80                                   | 15.0                 | 20               | 15   | 5    | 4  | 1.0 | 5.0 | 0.5         | GEN. PURP. TRAN |
| MJD117T4*  | 100              | 100                                  | 2.0                  | 20               | 1000   | 2    | 3  | 2.0 | 2.0 | 0.008       | GEN. PURP. TRAN |
| MJD32CT4*  | 100              | 100                                  | 3.0                  | 15               | 10   | 3    | 4  | 1.2 | 3.0 | 0.375       | GEN. PURP. TRAN |
| MJD127T4*  | 100              | 100                                  | 5.0                  | 20               | 1000   | 4    | 4  | 2.0 | 4.0 | 0.016       | GEN. PURP. TRAN |
| MJD350T4*  | 300              | 300                                  | 0.5                  | 15               | 30   | 0.05 | 10   | -   | -   | -           | SWITCHING       |

Suffix : T4 = DPAK in tape &amp; reel

Suffix: -1 = IPAK in tubes

\* PNP Products

**POWER BIPOLAR**

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
 Http://www.100y.com.tw



Epitaxial base –  $I_{CM} : 2 \rightarrow 3 \text{ A}$ ,  $V_{CE0} : 45 \rightarrow 180 \text{ V}$

NPN and PNP types  
 Medium  $V_{CE0}$  range (45 to 180 V)  
 Medium switching speed  
 Medium  $f_T$  (2 to 20 MHz)  
 High ruggedness  
 Monolithic Darlingtons

Internal schematic diagrams

**GENERAL PURPOSE DARLINGTONS**

| Device    | $V_{CE0}$<br>(V) | $V_{CBO}$<br>$V_{CES}$<br>(V) | $I_C$<br>(A) | $P_{tot}$<br>(W) | Package    | $h_{FE}$ |     | $I_C / V_{CE(sat)}$ |     | $V_{CE} @ I_C / I_B$ |     |     |
|-----------|------------------|-------------------------------|--------------|------------------|------------|----------|-----|---------------------|-----|----------------------|-----|-----|
|           |                  |                               |              |                  |            | (A)      | (V) | (A)                 | (V) | (V)                  | (V) | (A) |
| BDW91     | 180              | 180                           | 4            | 10               | TO-39      | 1000     | 2   | 5                   | 2.0 | 2                    | 4   |     |
| BDW92*    | 180              | 180                           | 4            | 10               | TO-39      | 1000     | 2   | 5                   | 2.0 | 2                    | 4   |     |
| BDX53F    | 160              | 160                           | 6            | 60               | TO-220     | 500      | 2   | 5                   | 2.0 | 2                    | 10  |     |
| BDX54F*   | 160              | 160                           | 6            | 60               | TO-220     | 500      | 2   | 5                   | 2.0 | 2                    | 10  |     |
| MJ11016   | 120              | 120                           | 30           | 200              | TO-3       | 1000     | 20  | 5                   | 4.0 | 30                   | 300 |     |
| 2N6284    | 100              | 100                           | 20           | 160              | TO-3       | 750      | 10  | 3                   | 3.0 | 20                   | 200 |     |
| 2N6287*   | 100              | 100                           | 20           | 160              | TO-3       | 750      | 10  | 3                   | 3.0 | 20                   | 200 |     |
| MJ4032*   | 100              | 100                           | 16           | 150              | TO-3       | 1000     | 10  | 3                   | 4.0 | 16                   | 80  |     |
| MJ4035    | 100              | 100                           | 16           | 150              | TO-3       | 1000     | 10  | 3                   | 4.0 | 16                   | 80  |     |
| BDW83C    | 100              | 100                           | 15           | 130              | TO-218     | 750      | 6   | 3                   | 4.0 | 15                   | 150 |     |
| 2N6059    | 100              | 100                           | 12           | 150              | TO-3       | 750      | 6   | 3                   | 3.0 | 12                   | 120 |     |
| BDW93C    | 100              | 100                           | 12           | 80               | TO-220     | 750      | 5   | 3                   | 2.0 | 5                    | 20  |     |
| BDW93CFI  | 100              | 100                           | 12           | 40               | ISOWATT220 | 750      | 5   | 3                   | 2.0 | 5                    | 20  |     |
| BDW94C*   | 100              | 100                           | 12           | 80               | TO-220     | 750      | 5   | 3                   | 2.0 | 5                    | 20  |     |
| BDW94CFI* | 100              | 100                           | 12           | 40               | ISOWATT220 | 750      | 5   | 3                   | 2.0 | 5                    | 20  |     |
| BDX87C    | 100              | 100                           | 12           | 120              | TO-3       | 1000     | 5   | 3                   | 2.0 | 6                    | 24  |     |
| BDX88C*   | 100              | 100                           | 12           | 120              | TO-3       | 1000     | 5   | 3                   | 2.0 | 6                    | 24  |     |
| BDX33C    | 100              | 100                           | 10           | 70               | TO-220     | 750      | 3   | 3                   | 2.5 | 3                    | 6   |     |
| BDX34C*   | 100              | 100                           | 10           | 70               | TO-220     | 750      | 3   | 3                   | 2.5 | 3                    | 6   |     |
| TIP142    | 100              | 100                           | 10           | 125              | TO-218     | 1000     | 5   | 4                   | 3.0 | 10                   | 40  |     |
| TIP142T   | 100              | 100                           | 10           | 75               | TO-220     | 500      | 10  | 4                   | 3.0 | 10                   | 40  |     |
| TIP147*   | 100              | 100                           | 10           | 125              | TO-218     | 1000     | 5   | 4                   | 3.0 | 10                   | 40  |     |
| BDX53C    | 100              | 100                           | 8            | 60               | TO-220     | 750      | 3   | 3                   | 2.0 | 3                    | 12  |     |
| BDX54C*   | 100              | 100                           | 8            | 60               | TO-220     | 750      | 3   | 3                   | 2.0 | 3                    | 12  |     |
| TIP102    | 100              | 100                           | 8            | 80               | TO-220     | 1000     | 3   | 4                   | 2.0 | 3                    | 6   |     |
| TIP107*   | 100              | 100                           | 8            | 80               | TO-220     | 1000     | 3   | 4                   | 2.0 | 3                    | 6   |     |
| TIP132    | 100              | 100                           | 8            | 70               | TO-220     | 1000     | 4   | 4                   | 2.0 | 4                    | 16  |     |
| TIP137*   | 100              | 100                           | 8            | 70               | TO-220     | 1000     | 4   | 4                   | 2.0 | 4                    | 16  |     |
| BD336*    | 100              | 100                           | 6            | 60               | SOT-82     | 750      | 3   | 3                   | 2.0 | 3                    | 12  |     |
| SGS122    | 100              | 100                           | 5            | 65               | SOT-82     | 1000     | 3   | 3                   | 2.0 | 3                    | 12  |     |
| TIP122    | 100              | 100                           | 5            | 65               | TO-220     | 1000     | 3   | 3                   | 2.0 | 3                    | 12  |     |
| TIP127*   | 100              | 100                           | 5            | 65               | TO-220     | 1000     | 3   | 3                   | 2.0 | 3                    | 12  |     |
| BD681     | 100              | 100                           | 4            | 40               | SOT-32     | 750      | 1.5 | 3                   | 2.5 | 1.5                  | 30  |     |
| BD682*    | 100              | 100                           | 4            | 40               | SOT-32     | 750      | 1.5 | 3                   | 2.5 | 1.5                  | 30  |     |
| SGS112    | 100              | 100                           | 2            | 50               | SOT-82     | 1000     | 1   | 4                   | 2.5 | 2                    | 8   |     |
| TIP112    | 100              | 100                           | 2            | 50               | TO-220     | 1000     | 1   | 4                   | 2.5 | 2                    | 8   |     |
| TIP117*   | 100              | 100                           | 2            | 50               | TO-220     | 1000     | 1   | 4                   | 2.5 | 2                    | 8   |     |
| MJ11031   | 90               | 90                            | 50           | 300              | TO-3       | 400      | 50  | 5                   | 3.5 | 50                   | 500 |     |

\* PNP Products

**GENERAL PURPOSE DARLINGTONS (cont'd)**

| Device    | V <sub>CEO</sub> | V <sub>CBO</sub><br>V <sub>CES</sub> | I <sub>c</sub> | P <sub>tot</sub> | Package    | h <sub>FE</sub> | I <sub>c</sub> / V <sub>CE(sat)</sub> |     | V <sub>CE</sub> @ I <sub>c</sub> / I <sub>B</sub> |     |     |
|-----------|------------------|--------------------------------------|----------------|------------------|------------|-----------------|---------------------------------------|-----|---|-----|-----|
|           | (V)              | (V)                                  | (A)            | (W)              |            |                 | (A)                                   | (V) | (V)   | (V) | (A) |
| MJ11013*  | 90               | 90                                   | 30             | 200              | TO-3       | 1000            | 20                                    | 5   | 4.0   | 30  | 300 |
| MJ11014   | 90               | 90                                   | 30             | 200              | TO-3       | 1000            | 20                                    | 5   | 4.0   | 30  | 300 |
| SGSD100   | 80               | 80                                   | 25             | 130              | TO-218     | 300             | 20                                    | 3   | 1.8   | 10  | 40  |
| SGSD200*  | 80               | 80                                   | 25             | 130              | TO-218     | 300             | 20                                    | 3   | 1.8   | 10  | 40  |
| BDW93B    | 80               | 80                                   | 12             | 80               | TO-220     | 750             | 5                                     | 3   | 2.0   | 5   | 20  |
| BDW94B*   | 80               | 80                                   | 12             | 80               | TO-220     | 750             | 5                                     | 3   | 2.0   | 5   | 20  |
| 2N6388    | 80               | 80                                   | 10             | 65               | TO-220     | 1000            | 5                                     | 3   | 2.0   | 5   | 10  |
| BDX33B    | 80               | 80                                   | 10             | 70               | TO-220     | 750             | 3                                     | 3   | 2.5   | 3   | 6   |
| BDX34B*   | 80               | 80                                   | 10             | 70               | TO-220     | 750             | 3                                     | 3   | 2.5   | 3   | 6   |
| MJ2501*   | 80               | 80                                   | 10             | 150              | TO-3       | 1000            | 5                                     | 3   | 2.0   | 5   | 20  |
| MJ3001    | 80               | 80                                   | 10             | 150              | TO-3       | 1000            | 5                                     | 3   | 2.0   | 5   | 20  |
| TIP141    | 80               | 80                                   | 10             | 125              | TO-218     | 1000            | 5                                     | 4   | 3.0   | 10  | 40  |
| TIP141FI  | 80               | 80                                   | 10             | 50               | ISOWATT218 | 500             | 10                                    | 4   | 3.0   | 10  | 40  |
| TIP146*   | 80               | 80                                   | 10             | 125              | TO-218     | 1000            | 5                                     | 4   | 3.0   | 10  | 40  |
| TIP146FI* | 80               | 80                                   | 10             | 50               | ISOWATT218 | 500             | 10                                    | 4   | 3.0   | 10  | 40  |
| BDX53B    | 80               | 80                                   | 8              | 60               | TO-220     | 750             | 3                                     | 3   | 2.0   | 3   | 12  |
| BDX54B*   | 80               | 80                                   | 8              | 60               | TO-220     | 750             | 3                                     | 3   | 2.0   | 3   | 12  |
| TIP106*   | 80               | 80                                   | 8              | 80               | TO-220     | 1000            | 3                                     | 4   | 2.0   | 3   | 6   |
| TIP131    | 80               | 80                                   | 8              | 70               | TO-220     | 1000            | 4                                     | 4   | 2.0   | 4   | 16  |
| TIP121    | 80               | 80                                   | 5              | 65               | TO-220     | 1000            | 3                                     | 3   | 2.0   | 3   | 12  |
| TIP126*   | 80               | 80                                   | 5              | 65               | TO-220     | 1000            | 3                                     | 3   | 2.0   | 3   | 12  |
| 2N6036*   | 80               | 80                                   | 4              | 40               | SOT-32     | 500             | 0.5                                   | 3   | 2.0   | 2   | 8   |
| BD679     | 80               | 80                                   | 4              | 40               | SOT-32     | 750             | 1.5                                   | 3   | 2.5   | 1.5 | 30  |
| BD679A    | 80               | 80                                   | 4              | 40               | SOT-32     | 750             | 2                                     | 3   | 2.8   | 2   | 40  |
| BD680*    | 80               | 80                                   | 4              | 40               | SOT-32     | 750             | 1.5                                   | 3   | 2.5   | 1.5 | 30  |
| BD680A*   | 80               | 80                                   | 4              | 40               | SOT-32     | 750             | 2                                     | 3   | 2.8   | 2   | 40  |
| MJE802    | 80               | 80                                   | 4              | 40               | SOT-32     | 100             | 4                                     | 3   | 3.0   | 4   | 40  |
| MJE803    | 80               | 80                                   | 4              | 40               | SOT-32     | 100             | 4                                     | 3   | 3.0   | 4   | 40  |
| 2N6050*   | 60               | 60                                   | 12             | 150              | TO-3       | 750             | 6                                     | 3   | 3.0   | 12  | 120 |
| TIP100    | 60               | 60                                   | 8              | 80               | TO-220     | 1000            | 3                                     | 4   | 2.0   | 3   | 6   |
| TIP105*   | 60               | 60                                   | 8              | 80               | TO-220     | 1000            | 3                                     | 4   | 2.0   | 3   | 6   |
| TIP135*   | 60               | 60                                   | 8              | 70               | TO-220     | 1000            | 4                                     | 4   | 2.0   | 4   | 16  |
| SGS125*   | 60               | 60                                   | 5              | 65               | SOT-82     | 1000            | 3                                     | 3   | 2.0   | 3   | 12  |
| TIP120    | 60               | 60                                   | 5              | 65               | TO-220     | 1000            | 3                                     | 3   | 2.0   | 3   | 12  |
| TIP125*   | 60               | 60                                   | 5              | 65               | TO-220     | 1000            | 3                                     | 3   | 2.0   | 3   | 12  |
| BD677     | 60               | 60                                   | 4              | 40               | SOT-32     | 750             | 1.5                                   | 3   | 2.5   | 1.5 | 30  |
| BD677A    | 60               | 60                                   | 4              | 40               | SOT-32     | 750             | 2                                     | 3   | 2.8   | 2   | 40  |
| BD678*    | 60               | 60                                   | 4              | 40               | SOT-32     | 750             | 1.5                                   | 3   | 2.5   | 1.5 | 30  |
| BD678A*   | 60               | 60                                   | 4              | 40               | SOT-32     | 750             | 2                                     | 3   | 2.8   | 2   | 40  |
| SGS110    | 60               | 60                                   | 2              | 50               | SOT-82     | 1000            | 1                                     | 4   | 2.5   | 2   | 8   |
| SGS115*   | 60               | 60                                   | 2              | 50               | SOT-82     | 1000            | 1                                     | 4   | 2.5   | 2   | 8   |
| TIP110    | 60               | 60                                   | 2              | 50               | TO-220     | 1000            | 1                                     | 4   | 2.5   | 2   | 8   |
| TIP115*   | 60               | 60                                   | 2              | 50               | TO-220     | 1000            | 1                                     | 4   | 2.5   | 2   | 8   |

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