

germanium transistors cont'd

germanium power transistors

| Type | Polarity | Power Dissipation @ 25°C (watts) | T _J (°C) | BV _{CEO} (volts) | BV _{CE-} (volts) | h _{FE} @ I _C | | | V _{CE (SAT)} @ I _C | | h _f | f _T (KHz) | Case Style |
|--------|----------|----------------------------------|---------------------|---------------------------|---------------------------|----------------------------------|--------|--------|--|--------|----------------|----------------------|------------|
| | | | | | | (Min.) | (Max.) | (Amps) | (volts) | (Amps) | | | |
| | | NOTE 1 | | NOTE 2 | | | | | NOTE 3 | | NOTE 4 | | |
| 2N155 | PNP | 1.5 (A) | 85 | 30 | — | 24 | — | 0.5 | 0.65 | 0.5 | — | — | TO-3 |
| 2N156 | PNP | 1.5 (A) | 85 | 30 | — | 24 | — | 0.5 | 0.6 | 1.0 | — | — | TO-13 |
| 2N158 | PNP | 1.5 (A) | 85 | 60 | — | 21 | — | 0.5 | 0.75 | 1.0 | — | — | TO-13 |
| 2N158A | PNP | 1.5 (A) | 95 | 80 | 60 (O) | 21 | — | 0.5 | 0.75 | 1.0 | 145 | (B) | TO-13 |
| 2N173 | PNP | 10 (C) | 95 | 60 | 50 (S) | 35 | 70 | 5.0 | 1.0 | 12.0 | — | — | TO-13 |
| | | | | | | | | | | | 4.0 | (E) | TO-36 |
| 2N174 | PNP | 100 (C) | 95 | 80 | 70 (S) | 25 | 50 | 5.0 | 0.9 | 12.0 | — | — | TO-36 |
| 2N176 | PNP | 90 (C) | 80 | 40 | 30 (R) | 25 | — | — | 0.4 | 3.0 | — | — | TO-3 |
| 2N234A | PNP | 25 (C) | 90 | — | 25 (R) | — | — | — | — | — | 4.0 | (E) | TO-3 |
| 2N235A | PNP | 25 (C) | 90 | — | 40 (U) | — | — | — | — | — | — | — | TO-3 |
| 2N235B | PNP | 25 (C) | 85 | 50 | 35 (R) | — | — | — | 0.8 | 1.0 | — | — | TO-3 |
| | | | | | | | | | 0.8 | 1.0 | 5.0 | (E) | TO-3 |
| 2N236A | PNP | 25 (C) | 95 | — | 35 (R) | — | — | — | 1.0 | 3.0 | — | — | TO-3 |
| 2N236B | PNP | 25 (C) | 95 | 50 | 35 (R) | — | — | — | 1.0 | 3.0 | — | — | TO-3 |
| 2N242 | PNP | 20 (C) | 85 | 45 | 45 (R) | — | — | — | — | — | 5.0 | (E) | TO-3 |
| 2N250 | PNP | 12 (C) | 80 | 30 | — | 30 | — | 0.5 | — | — | 5.0 | (B) | TO-3 |
| 2N250A | PNP | 90 (C) | 100 | 40 | 35 (V) | 25 | 100 | 3.0 | 0.7 | 3.0 | 8.0 | (E) | TO-3 |
| | | | | | | | | | | | 200 | (T) | TO-3 |
| 2N251 | PNP | 12 (C) | 80 | 60 | — | 30 | — | 0.5 | — | — | — | — | TO-3 |
| 2N251A | PNP | 90 (C) | 100 | 60 | 55 (V) | 25 | 100 | 3.0 | 0.7 | 3.0 | 8.0 | (E) | TO-3 |
| 2N255 | PNP | 1.5 (A) | 85 | 15 | — | — | — | — | — | — | 200 | (T) | TO-3 |
| 2N255A | PNP | 20 (C) | 85 | 15 | 15 (R) | — | — | — | — | — | — | — | TO-3 |
| 2N256 | PNP | 1.5 (A) | 85 | 30 | — | — | — | — | — | — | — | — | TO-3 |
| 2N256A | PNP | 20 (C) | 85 | 30 | 25 (R) | — | — | — | — | — | — | — | TO-3 |
| 2N257 | PNP | 25 (C) | 85 | 40 | — | — | — | — | — | — | — | — | TO-3 |
| 2N268 | PNP | 25 (C) | 85 | 80 | — | — | — | — | — | — | 7.0 | — | TO-3 |
| 2N268A | PNP | 10 (C) | 90 | 80 | 60 (V) | 20 | — | 2.0 | 1.0 | 2.0 | 6.0 | — | TO-3 |
| 2N277 | PNP | 70 (C) | 95 | 40 | 40 (S) | 35 | 70 | 5.0 | — | — | — | — | TO-3 |
| | | | | | | | | | | | — | — | TO-36 |
| 2N278 | PNP | 70 (C) | 95 | 50 | 45 (S) | 35 | 70 | 5.0 | 1.0 | 12 | — | — | TO-36 |
| 2N285A | PNP | 25 (C) | 95 | — | 35 (R) | — | — | — | 0.5 | 1.0 | — | — | TO-3 |
| 2N285B | PNP | 25 (C) | 95 | — | 35 (R) | — | — | — | 0.5 | 1.0 | — | — | TO-3 |
| 2N296 | PNP | 20 (C) | 85 | 60 | — | 19 | — | 1.0 | 1.0 | 1.0 | 4.0 | (B) | TO-3 |
| 2N297 | PNP | 35 (C) | 95 | 60 | 50 (S) | 40 | 100 | 0.5 | 1.0 | 2.0 | 5.0 | (E) | TO-3 |
| 2N297A | PNP | 35 (C) | 95 | 60 | 50 (S) | 40 | 100 | 0.5 | 1.0 | 2.0 | — | — | TO-3 |
| 2N301 | PNP | 11 (A) | 85 | 40 | — | — | — | — | — | — | 5.0 | (E) | TO-3 |
| 2N301A | PNP | 11 (A) | 85 | 60 | — | — | — | — | — | — | — | — | TO-41 |
| 2N307 | PNP | 25 (C) | 75 | 35 | 35 (R) | 20 | — | 0.2 | 1.0 | 0.2 | 3.0 | (E) | TO-3 |
| 2N307A | PNP | 25 (C) | 75 | 35 | 35 (R) | 20 | — | 0.2 | 0.8 | 1.0 | 3.5 | (E) | TO-3 |
| 2N350 | PNP | 10 (A) | 100 | 50 | 40 (O) | 20 | 60 | 0.7 | — | — | — | — | TO-3 |
| 2N350A | PNP | 90 (J) | 100 | 50 | 40 (S) | 20 | 60 | 0.7 | — | — | — | — | TO-3 |
| 2N351 | PNP | 10 (A) | 100 | 50 | 40 (O) | 25 | 90 | 0.7 | 1.75 | 3.0 | 5.0 | (E) | TO-3 |
| 2N351A | PNP | 90 (J) | 100 | 50 | 40 (S) | 25 | 90 | 0.7 | 1.75 | 4.0 | 5.0 | (E) | TO-3 |
| 2N375 | PNP | 58 (C) | 95 | 80 | 60 (S) | 35 | 90 | 1.0 | 1.0 | 2.0 | 7.0 | (E) | TO-3 |
| 2N376 | PNP | 10 (A) | 100 | 50 | 40 (O) | 35 | 120 | 0.7 | — | — | — | — | TO-3 |
| 2N376A | PNP | 90 (J) | 100 | 50 | 40 (S) | 35 | 120 | 0.7 | 1.75 | 5.0 | — | — | TO-3 |
| 2N378 | PNP | 50 (C) | 100 | 20 | — | 40 | 80 | 2.0 | 1.0 | 2.0 | 5.0 | (E) | TO-3 |
| 2N379 | PNP | 50 (C) | 100 | 40 | — | 40 | 70 | 2.0 | 1.0 | 2.0 | 5.0 | (E) | TO-3 |
| 2N380 | PNP | 50 (C) | 100 | 30 | — | 30 | 70 | 2.0 | 1.0 | 2.0 | 5.0 | (E) | TO-3 |
| 2N392 | PNP | 48 (C) | 95 | 60 | 40 (R) | 60 | 150 | 3.0 | 0.5 | 3.0 | — | — | TO-3 |
| 2N399 | PNP | 25 (C) | 90 | — | 35 (R) | — | — | — | 1.0 | 1.2 | — | — | TO-3 |
| 2N400 | PNP | 35 (C) | 95 | 25 | 20 (O) | 40 | 300 | 0.5 | 0.8 | 1.0 | 25 (E) | — | TO-3 |
| 2N401 | PNP | 25 (C) | 90 | — | 35 (R) | — | — | — | 1.0 | 1.2 | — | — | TO-3 |
| 2N418 | PNP | 25 (C) | 100 | 100 | 75 (R) | 40 | — | 4.0 | 2.0 | 4.0 | — | — | TO-3 |
| 2N419 | PNP | 35 (C) | 95 | 25 | 20 (O) | 50 | 350 | 0.5 | 0.8 | 1.5 | 25 (E) | — | TO-3 |
| 2N420 | PNP | 25 (C) | 100 | 65 | 40 (R) | 40 | — | 4.0 | 2.0 | 4.0 | — | — | TO-3 |
| 2N420A | PNP | 25 (C) | 100 | 90 | 65 (R) | 40 | — | 4.0 | 2.0 | 4.0 | — | — | TO-3 |
| 2N441 | PNP | 50 (C) | 95 | 40 | 40 (S) | 20 | 40 | 5.0 | — | — | — | — | TO-3 |
| 2N442 | PNP | 50 (C) | 95 | 50 | 45 (S) | 20 | 40 | 5.0 | — | — | — | — | TO-36 |
| | | | | | | | | | | | — | — | TO-36 |
| 2N443 | PNP | 50 (C) | 95 | 60 | 50 (S) | 20 | 40 | 5.0 | 1.0 | 12 | — | — | TO-36 |
| 2N456 | PNP | 50 (C) | 95 | 40 | 40 (X) | — | — | — | 1.0 | 5.0 | — | — | TO-3 |
| 2N456A | PNP | 150 (C) | — | 40 | 40 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | 4.0 | (E) | TO-3 |
| 2N456B | PNP | 150 (C) | 100 | 40 | 30 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | 200 | (T) | TO-3 |
| 2N457 | PNP | 50 (C) | 95 | 60 | 60 (X) | — | — | — | 1.0 | 5.0 | — | — | TO-3 |
| 2N457A | PNP | 150 (C) | — | 60 | 60 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | — | — | TO-3 |
| 2N457B | PNP | 150 (C) | 100 | 60 | 40 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | 4.0 | (E) | TO-3 |
| 2N458 | PNP | 50 (C) | 95 | 80 | 80 (X) | — | — | — | 1.0 | 5.0 | 200 | (T) | TO-3 |
| 2N458A | PNP | 150 (C) | — | 80 | 80 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | — | — | TO-3 |
| 2N458B | PNP | 150 (C) | 100 | 80 | 45 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | 4.0 | (E) | TO-3 |
| | | | | | | | | | | | 200 | (T) | TO-3 |
| 2N511 | PNP | 150 (C) | — | 40 | — | 20 | 60 | 10 | 0.5 | 10 | — | — | TO-41 |
| 2N511A | PNP | 150 (C) | — | 60 | — | 20 | 60 | 10 | 0.5 | 10 | 260 | (T) | TO-41 |
| 2N511B | PNP | 150 (C) | — | 30 | — | 20 | 60 | 10 | 0.5 | 10 | 260 | (T) | TO-41 |
| 2N512 | PNP | 150 (C) | — | 40 | — | 20 | 60 | 15 | 0.75 | 15 | 260 | (T) | TO-41 |
| 2N512A | PNP | 150 (C) | — | 60 | — | 20 | 60 | 15 | 0.75 | 15 | 260 | (T) | TO-41 |
| 2N512B | PNP | 150 (C) | — | 80 | — | 20 | 60 | 15 | 0.5 | 10 | — | — | TO-41 |
| 2N513 | PNP | 150 (C) | — | 40 | — | 20 | 60 | 20 | 1.25 | 20 | 300 | (T) | TO-41 |
| 2N513A | PNP | 150 (C) | — | 60 | — | 20 | 60 | 20 | 1.25 | 20 | 260 | (T) | TO-41 |
| 2N513B | PNP | 150 (C) | — | 80 | — | 20 | 60 | 20 | 0.5 | 10 | 260 | (T) | TO-41 |
| 2N514 | PNP | 80 (C) | 95 | 40 | 40 (X) | — | — | — | 1.25 | 25 | — | — | TO-41 |



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germanium transistors cont'd

T-33-01

germanium power transistors — (cont'd)

| Type | Polarity | Power Dissipation @ 25°C (watts) | T _J (°C) | BV _{CEO} (volts) | BV _{CE} (volts) | h _{FE} @ I _C | | | V _{CE} (SAT) @ I _C | | f _T (MHz) | Case Style | | |
|---------|----------|----------------------------------|---------------------|---------------------------|--------------------------|----------------------------------|--------|--------|--|--------|----------------------|------------|-----------|-------|
| | | | | | | (Min.) | (Max.) | (Amps) | (volts) | (Amps) | | | | |
| | | NOTE 1 | NOTE 2 | | | | | | | NOTE 3 | NOTE 4 | | | |
| 2N514A | PNP | 80 (C) | 95 | 60 | 60 (X) | — | — | — | 1.25 | 25 | — | — | TO-41 | |
| 2N514B | PNP | 80 (C) | 95 | 80 | 80 (X) | — | — | — | 1.25 | 25 | — | — | TO-41 | |
| 2N538 | PNP | 34 (J) | 95 | 80 | 60 — | 20 | 50 | 2.0 | — | — | — | — | MT-36 | |
| 2N538A | PNP | 34 (J) | 95 | 80 | 60 — | 20 | 50 | 2.0 | 0.6 | 2.0 | — | — | MT-36 | |
| 2N539 | PNP | 34 (J) | 95 | 80 | 55 — | 30 | 75 | 2.0 | 0.6 | 2.0 | — | — | MT-36 | |
| 2N539A | PNP | 11 (J) | 95 | 80 | 55 — | 30 | 75 | 2.0 | 0.6 | 2.0 | — | — | MT-36 | |
| 2N540 | PNP | 34 (J) | 95 | 80 | 55 — | 45 | 113 | 2.0 | 0.6 | 2.0 | — | — | MT-36 | |
| 2N540A | PNP | 34 (J) | 95 | 80 | 55 — | 45 | 113 | 2.0 | 0.6 | 2.0 | — | — | MT-36 | |
| 2N553 | PNP | 35 (C) | 95 | 80 | — | 40 | 80 | 0.5 | 0.9 | 3.0 | — | — | TO-3 | |
| 2N554 | PNP | 40 (J) | 90 | — | — | — | — | — | — | — | — | — | TO-3 | |
| 2N555 | PNP | 10 (J) | 90 | 40 | — | — | — | — | — | — | — | 5.0 (B) | TO-3 | |
| 2N561 | PNP | 50 (A) | 100 | 80 | 50 (O) | 20 | 50 | 4.0 | — | — | — | — | TO-3 | |
| 2N574 | PNP | 180 (J) | 100 | 60 | 55 (O) | 9.0 | 22 | 10 | 0.2 | 10 | — | — | MT-7 | |
| 2N574A | PNP | 180 (J) | 100 | 80 | 60 (O) | 9.0 | 22 | 10 | 0.2 | 10 | — | — | MT-7 | |
| 2N575 | PNP | 180 (J) | 100 | 60 | 50 (O) | 19 | 42 | 10 | 0.5 | 25 | — | — | MT-7 | |
| 2N618 | PNP | 90 (C) | 95 | 80 | 60 (S) | 60 | 140 | 1.0 | 0.8 | 2.0 | — | — | TO-3 | |
| 2N627 | PNP | 90 (C) | 100 | 40 | 30 (S) | 10 | 30 | 10 | 1.0 | 10 | — | — | TO-3 | |
| 2N628 | PNP | 90 (C) | 100 | 60 | 45 (S) | 10 | 30 | 10 | 1.0 | 10 | — | — | TO-3 | |
| 2N629 | PNP | 90 (C) | 100 | 80 | 60 (S) | 10 | 30 | 10 | 1.0 | 10 | — | — | TO-3 | |
| 2N630 | PNP | 90 (C) | 100 | 100 | 75 (S) | 10 | 30 | 10 | 1.0 | 10 | — | — | TO-3 | |
| 2N637 | PNP | 60 (C) | 100 | — | 35 (R) | 30 | 60 | 3.0 | 1.5 | 3.0 | — | — | TO-3 | |
| 2N637A | PNP | 60 (C) | 100 | — | 65 (R) | 30 | 60 | 3.0 | 1.5 | 3.0 | — | — | TO-3 | |
| 2N637B | PNP | 60 (C) | 100 | — | 75 (R) | 30 | 60 | 3.0 | 1.5 | 3.0 | — | — | TO-3 | |
| 2N638 | PNP | 60 (C) | 100 | — | 35 (R) | 20 | 40 | 3.0 | 2.0 | 3.0 | — | — | TO-3 | |
| 2N638A | PNP | 60 (C) | 100 | — | 65 (R) | 20 | 40 | 3.0 | 2.0 | 3.0 | — | — | TO-3 | |
| 2N638B | PNP | 60 (C) | 100 | — | 75 (R) | 20 | 40 | 3.0 | 2.0 | 3.0 | — | — | TO-3 | |
| 2N663 | PNP | 35 (C) | 100 | 50 | 25 (O) | 25 | 75 | 0.5 | 1.0 | 3.0 | — | 15 (E) | TO-3 | |
| 2N665 | PNP | 35 (C) | 95 | 80 | 40 (O) | 40 | 80 | 0.5 | 0.9 | 3.0 | — | 20 (E) | TO-3 | |
| 2N669 | PNP | 62.5 (C) | 100 | 40 | 30 (S) | — | 250 | 0.5 | — | — | — | 3.0 (E) | TO-3 | |
| 2N677 | PNP | 90 (C) | 100 | 50 | 30 (S) | 20 | 60 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N677A | PNP | 90 (C) | 100 | 60 | 40 (S) | 20 | 60 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N677B | PNP | 90 (C) | 100 | 90 | 70 (S) | 20 | 60 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N677C | PNP | 90 (C) | 100 | 100 | 80 (S) | 20 | 60 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N678 | PNP | 90 (C) | 100 | 50 | 20 (O) | 50 | 100 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N678A | PNP | 90 (C) | 100 | 60 | 30 (O) | 50 | 100 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N678B | PNP | 90 (C) | 100 | 90 | 60 (O) | 50 | 100 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N678C | PNP | 90 (C) | 100 | 100 | 70 (O) | 50 | 100 | 10 | 1.0 | 10 | — | — | TO-41 | |
| 2N1011 | PNP | 35 (C) | 95 | 80 | 80 (S) | 30 | 75 | 3.0 | 1.5 | 3.0 | 20 (E) | — | 5.0* (E) | TO-3 |
| 2N1021 | PNP | 50 (C) | 95 | 100 | 100 (X) | 23 | 70 | 1.0 | 1.0 | 5.0 | — | — | — | TO-3 |
| 2N1021A | PNP | 150 (C) | 100 | 100 | 50 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | — | 200 (T) | — | TO-3 |
| 2N1022 | PNP | 50 (C) | 95 | 120 | 120 (X) | 23 | 70 | 5.0 | 1.0 | 5.0 | — | — | — | TO-3 |
| 2N1022A | PNP | 150 (C) | 100 | 120 | 55 (O) | 30 | 90 | 5.0 | 0.5 | 5.0 | — | — | 200 (T) | TO-3 |
| 2N1031 | PNP | 90 (C) | 100 | 50 | 30 (S) | 20 | 60 | 10 | 1.0 | 10 | 10 (E) | — | 2.0 (E) | TO-41 |
| 2N1031A | PNP | 90 (C) | 100 | 60 | 40 (S) | 20 | 60 | 10 | 1.0 | 10 | 10 (E) | — | 2.0 (E) | TO-41 |
| 2N1031B | PNP | 90 (C) | 100 | 90 | 70 (S) | 20 | 60 | 10 | 1.0 | 10 | 10 (E) | — | 2.0 (E) | TO-41 |
| 2N1031C | PNP | 90 (C) | 100 | 100 | 80 (S) | 20 | 60 | 10 | 1.0 | 10 | 10 (E) | — | 2.0 (E) | TO-41 |
| 2N1032 | PNP | 90 (C) | 100 | 50 | 30 (S) | 50 | 10 | 10 | 1.0 | 10 | 25 (E) | — | 2.0 (E) | TO-41 |
| 2N1032A | PNP | 90 (C) | 100 | 60 | 40 (S) | 50 | 100 | 10 | 1.0 | 10 | 25 (E) | — | 2.0 (E) | TO-41 |
| 2N1032B | PNP | 90 (C) | 100 | 90 | 70 (S) | 50 | 100 | 10 | 1.0 | 10 | 25 (E) | — | 2.0 (E) | TO-41 |
| 2N1032C | PNP | 90 (C) | 100 | 100 | 80 (S) | 50 | 100 | 10 | 1.0 | 10 | 25 (E) | — | 2.0 (E) | TO-41 |
| 2N1038 | PNP | 20 (C) | 95 | 40 | 40 (V) | 20 | 60 | 1.0 | 0.25 | 1.0 | 18 (E) | — | 8.0 (E) | TO-5 |
| 2N1099 | PNP | 50 (C) | 95 | 80 | 70 (S) | 35 | 70 | 5.0 | 0.7 | 12 | — | — | — | TO-36 |
| 2N1100 | PNP | 50 (C) | 95 | 100 | 65 (O) | 25 | 50 | 5.0 | 0.7 | 12 | — | — | — | TO-36 |
| 2N1120 | PNP | 45 (C) | 95 | 80 | 70 (S) | 20 | 50 | 10 | 1.0 | 10 | 30 (E) | — | 3.0 (E) | TO-41 |
| 2N1136 | PNP | — | 100 | 60 | 35 (R) | 50 | 100 | 3.0 | 1.0 | 3.0 | — | — | 4.0 (E) | TO-3 |
| 2N1136A | PNP | — | 100 | 90 | 35 (R) | 50 | 100 | 3.0 | 1.0 | 3.0 | — | — | 4.0 (E) | TO-3 |
| 2N1136B | PNP | — | 100 | 100 | 75 (R) | 50 | 100 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1137 | PNP | — | 100 | 60 | 25 (O) | 75 | 150 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1137A | PNP | — | 100 | 90 | 55 (O) | 75 | 150 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1137B | PNP | — | 100 | 100 | 65 (O) | 75 | 150 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1138 | PNP | — | 100 | 60 | 25 (O) | 100 | 200 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1138A | PNP | — | 100 | 90 | 55 (O) | 100 | 200 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1138B | PNP | — | 100 | 100 | 65 (O) | 100 | 200 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1146 | PNP | 87 (C) | 95 | 40 | 20 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-3 |
| 2N1146A | PNP | 87 (C) | 95 | 60 | 30 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-3 |
| 2N1146B | PNP | 87 (C) | 95 | 80 | 40 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-3 |
| 2N1146C | PNP | 87 (C) | 95 | 100 | 50 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-3 |
| 2N1147 | PNP | 87 (C) | 95 | 40 | 20 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-41 |
| 2N1147A | PNP | 87 (C) | 95 | 60 | 30 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-41 |
| 2N1147B | PNP | 87 (C) | 95 | 80 | 40 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15* (E) | TO-41 |
| 2N1147C | PNP | 87 (C) | 95 | 100 | 50 (O) | 60 | 150 | 5.0 | 1.0 | 15 | — | — | 0.15 (E) | TO-41 |
| 2N1157 | PNP | 187 (J) | 100 | 60 | 45 (O) | 38 | 84 | 10 | 0.8 | 40 | — | — | 75 (T) | MT-7 |
| 2N1157A | PNP | 187 (J) | 100 | 80 | 50 (O) | 38 | 84 | 10 | 0.8 | 40 | — | — | 75 (T) | MT-7 |
| 2N1159 | PNP | 35 (C) | 95 | 80 | 60 (O) | 30 | 75 | 3.0 | 1.0 | 3.0 | — | — | — | TO-3 |
| 2N1160 | PNP | 35 (C) | 95 | 80 | 60 (O) | 20 | 50 | 5.0 | 1.0 | 5.0 | — | — | — | TO-3 |

* MHz

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germanium transistors cont'd

germanium power transistors — (cont'd)

| Type | Polarity | Power Dissipation @ 25°C (watts) | T _J (°C) | BV _{CEO} (volts) | BV _{CE} (volts) | h _{FE} @ I _C | | | V _{CE} (SAT) @ I _C | | f _T (MHz) | Case Style |
|---------|----------|----------------------------------|---------------------|---------------------------|--------------------------|----------------------------------|--------|--------|--|--------|----------------------|------------|
| | | | | | | (Min.) | (Max.) | (Amps) | (volts) | (Amps) | | |
| 2N1162 | PNP | 90 (C) | 100 | 50 | 35 (S) | 15 | 65 | 25 | 0.8 | 25 | — | — |
| 2N1162A | PNP | 90 (C) | 100 | 50 | 35 (S) | 15 | 65 | 25 | 0.8 | 25 | — | — |
| 2N1163 | PNP | 90 (C) | 100 | 50 | 35 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-3 |
| 2N1163A | PNP | 90 (C) | 100 | 50 | 35 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-3 |
| 2N1164 | PNP | 90 (C) | 100 | 80 | 30 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-41 |
| | | | | | 60 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-41 |
| | | | | | 35 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-3 |
| 2N1164A | PNP | 90 (C) | 100 | 80 | 60 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-3 |
| 2N1165 | PNP | 90 (C) | 100 | 80 | 60 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-41 |
| 2N1165A | PNP | 90 (C) | 100 | 80 | 60 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-41 |
| 2N1166 | PNP | 90 (C) | 100 | 100 | 75 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-3 |
| 2N1166A | PNP | 90 (C) | 100 | 100 | 75 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-3 |
| 2N1167 | PNP | 90 (C) | 100 | 100 | 75 (S) | 15 | 65 | 25 | 0.8 | 25 | 1.0 (E) | TO-41 |
| 2N1167A | PNP | 90 (C) | 100 | 100 | 75 (S) | 15 | 65 | 25 | 0.8 | 25 | 3.0 (E) | TO-41 |
| 2N1168 | PNP | 45 (C) | 95 | 50 | 30 (R) | — | — | — | — | — | — | — |
| 2N1202 | PNP | 34 (J) | 95 | 80 | 60 (O) | 40 | 120 | 0.5 | — | — | — | — |
| 2N1203 | PNP | 34 (J) | 95 | 120 | 70 (O) | 25 | 75 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1227 | PNP | 50 (C) | 95 | 35 | 20 (O) | 50 | 350 | 0.5 | 0.8 | 1.5 | 25 (E) | TO-3 |
| 2N1261 | PNP | 34 (J) | 95 | 80 | 40 (—) | 20 | 50 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1262 | PNP | 35 (J) | 95 | 80 | 45 (O) | 30 | 75 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1263 | PNP | 34 (J) | 95 | 80 | 45 (O) | 45 | 113 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1358 | PNP | 90 (—) | 95 | 80 | 40 (O) | 40 | 80 | 1.2 | 0.7 | 12 | 200 (T) | MT-36 |
| 2N1359 | PNP | 90 (J) | 100 | 50 | 40 (S) | 35 | 90 | 1.0 | 0.1 | 2.0 | 100 (B) | TO-36 |
| 2N1360 | PNP | 90 (J) | 100 | 50 | 40 (S) | 60 | 140 | 1.0 | 1.0 | 2.0 | — | TO-3 |
| 2N1362 | PNP | 90 (J) | 100 | 100 | 75 (S) | 35 | 90 | 1.0 | 1.0 | 2.0 | 5.0 (E) | TO-3 |
| 2N1363 | PNP | 90 (J) | 100 | 100 | 75 (S) | 60 | 140 | 1.0 | 1.0 | 2.0 | 5.0 (E) | TO-3 |
| 2N1364 | PNP | 90 (J) | 100 | 120 | 100 (S) | 35 | 90 | 1.0 | 1.0 | 2.0 | 5.0 (E) | TO-3 |
| 2N1365 | PNP | 90 (J) | 100 | 120 | 100 (S) | 60 | 140 | 1.0 | 1.0 | 2.0 | 5.0 (E) | TO-3 |
| 2N1412 | PNP | 70 (C) | 95 | 100 | 65 (O) | 25 | 50 | 5.0 | 0.7 | 12 | 5.0 (E) | TO-3 |
| 2N1501 | PNP | 34 (J) | 95 | 60 | 40 (—) | 25 | 100 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1502 | PNP | 34 (J) | 95 | 40 | 40 (—) | 25 | 100 | 2.0 | 0.6 | 2.0 | 200 (T) | MT-36 |
| 2N1529 | PNP | 90 (C) | 100 | 40 | 30 (S) | 20 | 40 | 3.0 | 1.5 | 3.0 | 200 (T) | MT-36 |
| 2N1529A | PNP | 90 (C) | 100 | 40 | 20 (O) | 20 | 40 | 3.0 | 1.5 | 3.0 | — | TO-3 |
| 2N1530 | PNP | 90 (C) | 100 | 60 | 45 (S) | 20 | 40 | 3.0 | 1.5 | 3.0 | 5.0 (E) | TO-3 |
| 2N1530A | PNP | 90 (C) | 100 | 60 | 30 (O) | 20 | 40 | 3.0 | 1.5 | 3.0 | — | TO-3 |
| 2N1531 | PNP | 90 (C) | 100 | 80 | 60 (S) | 20 | 40 | 3.0 | 1.5 | 3.0 | 5.0 (E) | TO-3 |
| 2N1531A | PNP | 90 (C) | 100 | 80 | 40 (O) | 20 | 40 | 3.0 | 1.5 | 3.0 | — | TO-3 |
| 2N1532 | PNP | 90 (C) | 100 | 100 | 75 (S) | 20 | 40 | 3.0 | 1.5 | 3.0 | 5.0 (E) | TO-3 |
| 2N1532A | PNP | 90 (C) | 100 | 100 | 50 (O) | 20 | 40 | 3.0 | 1.5 | 3.0 | — | TO-3 |
| 2N1533 | PNP | 90 (C) | 100 | 120 | 90 (S) | 20 | 40 | 3.0 | 1.5 | 3.0 | 5.0 (E) | TO-3 |
| 2N1534 | PNP | 90 (C) | 100 | 40 | 30 (S) | 35 | 70 | 3.0 | 1.5 | 3.0 | — | TO-3 |
| 2N1534A | PNP | 90 (C) | 100 | 40 | 20 (O) | 35 | 70 | 3.0 | 1.2 | 3.0 | — | TO-3 |
| 2N1535 | PNP | 90 (C) | 100 | 60 | 45 (S) | 45 | 70 | 3.0 | 1.2 | 3.0 | 5.0 (E) | TO-3 |
| 2N1535A | PNP | 90 (C) | 100 | 60 | 30 (O) | 35 | 70 | 3.0 | 1.2 | 3.0 | — | TO-3 |
| 2N1536 | PNP | 90 (C) | 100 | 80 | 60 (S) | 35 | 70 | 3.0 | 1.2 | 3.0 | 5.0 (E) | TO-3 |
| 2N1536A | PNP | 90 (C) | 100 | 80 | 40 (O) | 35 | 70 | 3.0 | 1.2 | 3.0 | — | TO-3 |
| 2N1537 | PNP | 90 (C) | 100 | 100 | 75 (S) | 35 | 70 | 3.0 | 1.2 | 3.0 | 5.0 (E) | TO-3 |
| 2N1537A | PNP | 90 (C) | 100 | 100 | 45 (S) | 35 | 70 | 3.0 | 1.2 | 3.0 | — | TO-3 |
| 2N1538 | PNP | 90 (C) | 100 | 120 | 90 (S) | 35 | 70 | 3.0 | 1.2 | 3.0 | 5.0 (E) | TO-3 |
| 2N1539 | PNP | 90 (C) | 100 | 40 | 30 (S) | 50 | 100 | 3.0 | 0.3 | 3.0 | — | TO-3 |
| 2N1539A | PNP | 90 (C) | 100 | 40 | 20 (O) | 50 | 100 | 3.0 | 0.3 | 3.0 | — | TO-3 |
| 2N1540 | PNP | 90 (C) | 100 | 60 | 45 (S) | 50 | 100 | 3.0 | 0.3 | 3.0 | 3.0 (E) | TO-3 |
| 2N1540A | PNP | 90 (C) | 100 | 60 | 30 (O) | 50 | 100 | 3.0 | 0.3 | 3.0 | — | TO-3 |
| 2N1541 | PNP | 90 (C) | 100 | 80 | 60 (S) | 50 | 100 | 3.0 | 0.3 | 3.0 | 3.0 (E) | TO-3 |
| 2N1541A | PNP | 90 (C) | 100 | 80 | 40 (O) | 50 | 100 | 3.0 | 0.3 | 3.0 | — | TO-3 |
| 2N1542 | PNP | 90 (C) | 100 | 100 | 75 (S) | 50 | 100 | 3.0 | 0.3 | 3.0 | 3.0 (E) | TO-3 |
| 2N1542A | PNP | 90 (C) | 100 | 100 | 50 (O) | 50 | 100 | 3.0 | 0.3 | 3.0 | — | TO-3 |
| 2N1543 | PNP | 90 (C) | 100 | 120 | 90 (S) | 50 | 100 | 3.0 | 0.3 | 3.0 | 3.0 (E) | TO-3 |
| 2N1544 | PNP | 90 (C) | 100 | 40 | 30 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | — | TO-3 |
| 2N1544A | PNP | 90 (C) | 100 | 40 | 30 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 1.0 (E) | TO-3 |
| 2N1545 | PNP | 90 (C) | 100 | 60 | 45 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 3.0 (E) | TO-3 |
| 2N1545A | PNP | 90 (C) | 100 | 60 | 45 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 1.0 (E) | TO-3 |
| 2N1546 | PNP | 90 (C) | 100 | 80 | 60 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 3.0 (E) | TO-3 |
| 2N1546A | PNP | 90 (C) | 100 | 80 | 60 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | — | TO-3 |
| 2N1547 | PNP | 90 (C) | 100 | 100 | 75 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 1.0 (E) | TO-3 |
| 2N1547A | PNP | 90 (C) | 100 | 100 | 75 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 3.0 (E) | TO-3 |
| 2N1548 | PNP | 90 (C) | 100 | 120 | 90 (S) | 75 | 150 | 3.0 | 0.2 | 3.0 | 1.0 (E) | TO-3 |
| 2N1549 | PNP | 90 (C) | 100 | 40 | 30 (S) | 10 | 30 | 10 | 1.0 | 10 | — | TO-3 |
| 2N1549A | PNP | 90 (C) | 100 | 40 | 30 (S) | 10 | 30 | 10 | 1.0 | 10 | — | TO-3 |
| 2N1550 | PNP | 90 (C) | 100 | 60 | 45 (S) | 10 | 30 | 10 | 1.0 | 10 | 5.0 (E) | TO-3 |
| 2N1550A | PNP | 90 (C) | 100 | 60 | 45 (S) | 10 | 30 | 10 | 1.0 | 10 | — | TO-3 |
| 2N1551 | PNP | 90 (C) | 100 | 80 | 60 (S) | 10 | 30 | 10 | 1.0 | 10 | 5.0 (E) | TO-3 |
| 2N1551A | PNP | 90 (C) | 100 | 80 | 60 (S) | 10 | 30 | 10 | 1.0 | 10 | — | TO-3 |
| 2N1552 | PNP | 90 (C) | 100 | 100 | 75 (S) | 10 | 30 | 10 | 1.0 | 10 | 5.0 (E) | TO-3 |
| 2N1552A | PNP | 90 (C) | 100 | 100 | 75 (S) | 10 | 30 | 10 | 1.0 | 10 | — | TO-3 |
| 2N1553 | PNP | 90 (C) | 100 | 40 | 30 (S) | 30 | 60 | 10 | 0.5 | 10 | 5.0 (E) | TO-3 |
| 2N1553A | PNP | 90 (C) | 100 | 40 | 20 (O) | 30 | 60 | 10 | 0.5 | 10 | 1.0 (E) | TO-3 |



TOLL FREE NUMBER 800-777-3960

T-33-01

germanium transistors cont'd

germanium power transistors — (cont'd)

| Type | Polarity | Power Dissipation ($\approx 25^\circ\text{C}$) (watts) | T_j ($^\circ\text{C}$) | BV_{CEO} (volts) | $BV_{CE(s)}$ (volts) | h_{FE} @ I_C | | | $V_{CE(SAT)}$ @ I_C | | h_f | f_{β} (KHz) | Case Style |
|---------|----------|--|-------------------------------|-----------------------|-------------------------|------------------|--------|--------|-----------------------|--------|--------|----------------------|------------|
| | | | | | | (Min.) | (Max.) | (Amps) | (volts) | (Amps) | | | |
| 2N1554 | PNP | 90 (C) | 100 | 60 | 45 (S) | 30 | 60 | 10 | 0.5 | 10 | — | 1.0 (E) | TO-3 |
| 2N1554A | PNP | 90 (C) | 100 | 60 | 30 (O) | 30 | 60 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1565 | PNP | 90 (C) | 100 | 80 | 60 (S) | 30 | 60 | 10 | 0.5 | 10 | — | 1.0 (E) | TO-3 |
| 2N1553A | PNP | 90 (C) | 100 | 80 | 40 (O) | 30 | 60 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1558 | PNP | 90 (C) | 100 | 100 | 75 (S) | 30 | 60 | 10 | 0.5 | 10 | — | 1.0 (E) | TO-3 |
| 2N1558A | PNP | 90 (C) | 100 | 100 | 50 (O) | 30 | 60 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1557 | PNP | 90 (C) | 100 | 40 | 30 (S) | 50 | 100 | 10 | 0.4 | 10 | — | 1.0 (E) | TO-3 |
| 2N1557A | PNP | 90 (C) | 100 | 40 | 20 (O) | 50 | 100 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1558 | PNP | 90 (C) | 100 | 60 | 45 (S) | 50 | 100 | 10 | 0.4 | 10 | — | 1.0 (E) | TO-3 |
| 2N1558A | PNP | 90 (C) | 100 | 60 | 30 (O) | 20 | 100 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1559 | PNP | 90 (C) | 100 | 80 | 60 (S) | 50 | 100 | 10 | 0.4 | 10 | — | 1.0 (E) | TO-3 |
| 2N1559A | PNP | 90 (C) | 100 | 80 | 40 (O) | 50 | 100 | 10 | 0.4 | 10 | — | 3.0 (E) | TO-3 |
| 2N1560 | PNP | 90 (C) | 100 | 100 | 75 (S) | 50 | 100 | 10 | 0.5 | 10 | — | 1.0 (E) | TO-3 |
| 2N1560A | PNP | 90 (C) | 100 | 100 | 50 (O) | 50 | 100 | 10 | 0.5 | 10 | — | 3.0 (E) | TO-3 |
| 2N1970 | PNP | 150 (C) | 100 | 100 | 50 (S) | 17 | 40 | 5 | 1 | 12 | — | 5.0 (E) | TO-36 |
| 2N1971 | PNP | 170 (C) | 100 | 80 | 40 (O) | 25 | 60 | 5 | 0.9 | 3.0 | — | 15 (E) | TO-3 |
| 2N1980 | PNP | 170 (C) | 100 | 50 | 30 (O) | 50 | 100 | 5.0 | 0.5 | 5.0 | — | 3.0 (E) | TO-36 |
| 2N1981 | PNP | 170 (C) | 100 | 70 | 40 (O) | 50 | 100 | 5.0 | 0.5 | 5.0 | — | 3.0 (E) | TO-36 |
| 2N1982 | PNP | 170 (C) | 100 | 90 | 50 (O) | 50 | 100 | 5.0 | 0.5 | 5.0 | — | 3.0 (E) | TO-36 |
| 2N2075 | PNP | 170 (C) | 110 | 80 | 80 (S) | 20 | 40 | 5.0 | 0.7 | 12 | — | 5.0 (E) | TO-36 |
| 2N2076 | PNP | 170 (C) | 110 | 70 | 70 (S) | 20 | 40 | 5.0 | 0.7 | 12 | — | 5.0 (E) | TO-36 |
| 2N2077 | PNP | 170 (C) | 110 | 50 | 50 (S) | 20 | 40 | 5.0 | 0.9 | 12 | — | 5.0 (E) | TO-36 |
| 2N2078 | PNP | 170 (C) | 110 | 40 | 40 (S) | 20 | 40 | 5.0 | 0.9 | 12 | — | 5.0 (E) | TO-36 |
| 2N2079 | PNP | 170 (C) | 110 | 80 | 80 (S) | 35 | 70 | 5.0 | 0.7 | 12 | — | 5.0 (E) | TO-36 |
| 2N2080 | PNP | 170 (C) | 110 | 70 | 70 (S) | 35 | 70 | 5.0 | 0.7 | 12 | — | 5.0 (E) | TO-36 |
| 2N2081 | PNP | 170 (C) | 110 | 50 | 50 (S) | 35 | 70 | 5.0 | 0.9 | 12 | — | 5.0 (E) | TO-36 |
| 2N2082 | PNP | 170 (C) | 110 | 40 | 40 (S) | 35 | 70 | 5.0 | 0.9 | 12 | — | 5.0 (E) | TO-36 |
| 2N2138 | PNP | 62.5 (C) | 100 | 45 | 45 (S) | 30 | 60 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2139 | PNP | 62.5 (C) | 100 | 60 | 60 (S) | 30 | 60 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2140 | PNP | 62.5 (C) | 100 | 75 | 75 (S) | 30 | 60 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2141 | PNP | 62.5 (C) | 100 | 90 | 90 (S) | 30 | 60 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2142 | PNP | 62.5 (C) | 100 | 30 | 30 (S) | 50 | 100 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2143 | PNP | 62.5 (C) | 100 | 45 | 45 (S) | 50 | 100 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2144 | PNP | 62.5 (C) | 100 | 60 | 60 (S) | 50 | 100 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2145 | PNP | 62.5 (C) | 100 | 75 | 75 (S) | 50 | 100 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2146 | PNP | 62.5 (C) | 100 | 90 | 90 (S) | 50 | 100 | 0.5 | 0.5 | 2.0 | — | 12 (E) | TO-3 |
| 2N2158 | PNP | 170 (C) | 110 | 75 | 75 (S) | 80 | 160 | 5.0 | 0.1 | 5.0 | — | 2.0 (E) | TO-36 |
| 2N2266 | PNP | 50 (J) | 125 | 100 | 55 — | 40 | 120 | 0.5 | 0.75 | 5.0 | — | 200 (T) | MT-36 |
| 2N2267 | PNP | 50 (J) | 125 | 120 | 55 — | 40 | 120 | 0.5 | 0.75 | 5.0 | — | 200 (T) | MT-36 |
| 2N2268 | PNP | 50 (J) | 125 | 100 | 55 — | 40 | 120 | 0.5 | 0.75 | 5.0 | — | 200 (T) | MT-36 |
| 2N2269 | PNP | 50 (J) | 125 | 120 | 55 — | 40 | 120 | 0.5 | 0.75 | 5.0 | — | 200 (T) | MT-36 |
| 2N2289 | PNP | 50 (J) | 125 | 120 | 55 — | 40 | 120 | 0.5 | 0.75 | 5.0 | — | 200 (T) | MT-36 |
| 2N2445 | PNP | 90 (C) | 100 | 100 | 50 (O) | 30 | 60 | 10 | 1.0 | 10 | 30 (E) | 0.1* (T) | TO-41 |
| 2N2730 | PNP | 140 (C) | 110 | 80 | 60 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | TO-36 |
| 2N2731 | PNP | 140 (C) | 110 | 60 | 45 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | TO-36 |
| 2N2732 | PNP | 140 (C) | 110 | 40 | 30 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | TO-36 |
| 2N2733 | PNP | 140 (C) | 110 | 80 | 60 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-23 |
| 2N2734 | PNP | 140 (C) | 110 | 60 | 45 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-23 |
| 2N2735 | PNP | 140 (C) | 110 | 40 | 30 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-23 |
| 2N2736 | PNP | 140 (C) | 110 | 80 | 60 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-22 |
| 2N2737 | PNP | 140 (C) | 110 | 60 | 45 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-22 |
| 2N2738 | PNP | 140 (C) | 110 | 40 | 30 (O) | 30 | 120 | 25 | 0.25 | 25 | — | 200 (T) | MT-22 |
| 2N2859 | PNP | 30 (C) | 100 | 60 | 50 (O) | 50 | 165 | 1.0 | 0.75 | 10 | — | 200 (T) | MT-22 |
| 2N3311 | PNP | 170 (C) | 110 | 30 | 30 (S) | 60 | 120 | 3.0 | 0.1 | 3.0 | 30 (E) | 1.0 (E) | TO-36 |
| 2N3312 | PNP | 170 (C) | 110 | 45 | 45 (S) | 60 | 120 | 3.0 | 0.1 | 3.0 | 30 (E) | 1.0 (E) | TO-36 |
| 2N3313 | PNP | 170 (C) | 110 | 60 | 60 (S) | 60 | 120 | 3.0 | 0.1 | 3.0 | 30 (E) | 1.0 (E) | TO-36 |
| 2N3314 | PNP | 170 (C) | 110 | 30 | 30 (S) | 100 | 200 | 3.0 | 0.1 | 3.0 | 40 (E) | 1.0 (E) | TO-36 |
| 2N3315 | PNP | 170 (C) | 110 | 45 | 45 (S) | 100 | 200 | 3.0 | 0.1 | 3.0 | 40 (E) | 1.0 (E) | TO-36 |
| 2N3316 | PNP | 170 (C) | 110 | 60 | 60 (S) | 100 | 200 | 3.0 | 0.1 | 3.0 | 40 (E) | 1.0 (E) | TO-36 |
| 2N3611 | PNP | 85 (C) | 110 | 40 | 30 (S) | 35 | 70 | 3.0 | 0.25 | 3.0 | 40 (E) | 0.3* (T) | TO-3 |
| 2N3612 | PNP | 85 (C) | 110 | 60 | 45 (S) | 35 | 70 | 3.0 | 0.25 | 3.0 | 40 (E) | 0.3* (T) | TO-3 |
| 2N3613 | PNP | 85 (C) | 110 | 40 | 30 (S) | 60 | 120 | 3.0 | 0.25 | 3.0 | 60 (E) | 0.3* (T) | TO-3 |
| 2N3614 | PNP | 85 (C) | 110 | 60 | 45 (S) | 60 | 120 | 3.0 | 0.25 | 3.0 | 60 (E) | 0.3* (T) | TO-3 |
| 2N3615 | PNP | 85 (C) | 110 | 80 | 60 (S) | 30 | 60 | 3.0 | 0.25 | 3.0 | 40 (E) | 0.3* (T) | TO-3 |
| 2N3616 | PNP | 85 (C) | 110 | 100 | 75 (S) | 30 | 60 | 3.0 | 0.25 | 3.0 | 40 (E) | 0.3* (T) | TO-3 |
| 2N3617 | PNP | 85 (C) | 110 | 80 | 60 (S) | 45 | 90 | 3.0 | 0.25 | 3.0 | 60 (E) | 0.3* (T) | TO-3 |
| 2N3618 | PNP | 85 (C) | 110 | 100 | 75 (S) | 45 | 90 | 3.0 | 0.25 | 3.0 | 60 (E) | 0.3* (T) | TO-3 |
| 3N49 | PNP | 94 (C) | 100 | 60 | 35 — | 30 | 120 | 5.0 | 0.4 | 5.0 | 30 (E) | 600 — | MT-70 |
| 3N50 | PNP | 94 (C) | 100 | 80 | 50 — | 20 | 80 | 5.0 | 0.4 | 5.0 | — | 300 — | MT-70 |
| 3N51 | PNP | 94 (C) | 100 | 40 | 25 — | 30 | 120 | 5.0 | 0.4 | 5.0 | 30 (E) | 500 — | MT-70 |
| 3N52 | PNP | 94 (C) | 100 | 60 | 40 — | 20 | 80 | 5.0 | 0.4 | 5.0 | — | 300 — | MT-70 |

* MHz

case outline drawings

TO1

TO3

TO5

TO18

TO33

TO36

TO39

TO46

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TO61

TO63

TO66

TO72

TO92

F8

Y220/TO220

NOTES:

1. Refer to rules for dimensioning semiconductor product outlines included in Publication No. 76.
2. Figure "A", Axial Terminal Configuration, applicable.
3. Figure "B", Peripheral Terminal Configuration, applicable.
4. Alternate lead configurations allowed within C and D.
5. Tab contour optional within M and P.
6. Chamfer optional.
7. Position of lead to be measured .050 - .055 below seating plane.
8. Position of lead to be measured .250 - .325 from bottom of dimension E.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | P | Q | R | S | T | U | V | NOTES |
|---------|------|------|------|------|------|------|---|---|---|------|------|------|------|---|---|---|------|------|------|------|------|-------|
| Y220n/ | .140 | .045 | .020 | .012 | .840 | .340 | | | | .180 | .040 | .530 | .040 | | | | .050 | .340 | .127 | .100 | .580 | 2 |
| TO220AA | .180 | .075 | .045 | .045 | .885 | .420 | | | | .210 | .055 | .570 | .115 | | | | | | | | | |
| Y220D | .140 | .045 | .020 | .012 | .840 | .340 | | | | .180 | .040 | .530 | .040 | | | | .050 | .340 | .127 | .100 | .580 | 2 |
| TO220AB | .180 | .075 | .045 | .045 | .885 | .420 | | | | .210 | .055 | .570 | .115 | | | | | | | | | |
| TO220B | .180 | .075 | .045 | .045 | .885 | .420 | | | | .210 | .055 | .570 | .115 | | | | | | | | | 3 |

