

Small Signal Transistors

TO-92 Case



TO-92

| TYPE NO. | FAMILY | LEAD CODE | V _{CB0} | V _{CEO} | V _{EBO} | I _{CB0} @ V _{CB0} | h _{FE} | | @ V _{CE} | @ I _C | V _{CE(SAT)} @ I _C | | C _{ob} | f _T | NF | t _{off} | |
|----------|-----------------|-----------|------------------|-----------------------|------------------|--|-----------------|------|------------------------|------------------|---------------------------------------|-------|----------------------|----------------|-------|------------------|-----|
| | | | (V) | (V) | (V) | (nA) | (V) | MIN | h _{FE} (1kHz) | (V) | (mA) | (V) | (mA) | (pF) | (MHz) | (dB) | |
| | | | MIN | *V _{CES} MIN | MIN | *I _{CES} **I _{CEV} MAX | | MAX | | | | | *C _{rb} MAX | *TYP MIN | MAX | MAX | |
| 2N2712 | NPN AMPL/SWITCH | ECB | 18 | 18 | 5.0 | 500 | 18 | 75 | 225 | --- | --- | --- | --- | 12 | --- | 2.8 | --- |
| 2N2714 | NPN AMPL/SWITCH | ECB | 18 | 18 | 5.0 | 100 | 18 | 75 | 225 | 0.30 | 50 | 1.20 | 50 | --- | --- | --- | --- |
| 2N2923 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 90* | 180* | --- | --- | --- | --- | 10 | 160* | --- | --- |
| 2N2924 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 150* | 300* | --- | --- | --- | --- | 10 | 160* | --- | --- |
| 2N2925 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 235* | 470* | --- | --- | --- | --- | 10 | 160* | 2.8 | --- |
| 2N2926 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 500 | 18 | 35* | 470* | --- | --- | --- | --- | 10 | 120* | 2.8 | --- |
| 2N3391A | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 250 | 500 | 4.50 | 2.0 | --- | --- | 10 | 120* | 5.0 | --- |
| 2N3392 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 150 | 300 | 4.50 | 2.0 | --- | --- | 10 | 120* | --- | --- |
| 2N3393 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 90 | 180 | 4.50 | 2.0 | --- | --- | 10 | 120* | --- | --- |
| 2N3395 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 150 | 500 | 4.50 | 2.0 | --- | --- | 10 | --- | --- | --- |
| 2N3396 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 90 | 500 | 4.50 | 2.0 | --- | --- | 10 | --- | --- | --- |
| 2N3397 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 55 | 500 | 4.50 | 2.0 | --- | --- | 10 | --- | --- | --- |
| 2N3398 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 55 | 800 | 4.50 | 2.0 | --- | --- | 10 | --- | --- | --- |
| 2N3415 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 180 | 540 | 4.50 | 2.0 | 0.30 | 50 | --- | --- | --- | --- |
| 2N3416 | NPN LOW NOISE | ECB | 50 | 50 | 5.0 | 100 | 25 | 75 | 225 | 4.50 | 2.0 | 0.30 | 50 | --- | --- | --- | --- |
| 2N3417 | NPN LOW NOISE | ECB | 50 | 50 | 5.0 | 100 | 50 | 180 | 540 | 4.50 | 2.0 | 0.30 | 50 | --- | --- | --- | --- |
| 2N3702 | PNP AMPL/SWITCH | ECB | 40 | 25 | 5.0 | 100 | 20 | 60 | 300 | 5.0 | 0.05 | 0.25 | 50 | 12 | 100 | --- | --- |
| 2N3703 | PNP AMPL/SWITCH | ECB | 50 | 30 | 5.0 | 100 | 20 | 30 | 150 | 5.0 | 0.05 | 0.25 | 50 | 12 | 100 | --- | --- |
| 2N3704 | NPN AMPL/SWITCH | ECB | 50 | 30 | 5.0 | 100 | 20 | 100 | 300 | 2.0 | 50 | 0.60 | 100 | 12 | 100 | --- | --- |
| 2N3705 | NPN AMPL/SWITCH | ECB | 50 | 30 | 5.0 | 100 | 20 | 50 | 150 | 2.0 | 50 | 0.80 | 100 | 12 | 100 | --- | --- |
| 2N3706 | NPN AMPL/SWITCH | ECB | 40 | 20 | 5.0 | 100 | 20 | 30 | 600 | 2.0 | 50 | 1.0 | 100 | 12 | 100 | --- | --- |
| 2N3707 | NPN LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 100 | 400 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | 5.0 | --- |
| 2N3708 | NPN LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 45 | 660 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | 5.0 | --- |
| 2N3709 | NPN LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 45 | 165 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | 5.0 | --- |
| 2N3710 | NPN LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 90 | 330 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | 5.0 | --- |
| 2N3711 | NPN LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 180 | 660 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | 5.0 | --- |
| 2N3859A | NPN LOW NOISE | ECB | 60 | 60 | 6.0 | 50 | 60 | 100 | 200 | 4.50 | 2.0 | 0.125 | 10 | 4.0 | --- | 5.0 | --- |
| 2N3860 | NPN LOW NOISE | ECB | 30 | 30 | 4.0 | 50 | 30 | 150 | 300 | 4.50 | 2.0 | 0.125 | 10 | 4.0 | 90 | --- | --- |
| 2N3903 | NPN AMPL/SWITCH | EBC | 60 | 40 | 6.0 | 50** | 30 | 50 | 150 | 1.0 | 10 | 0.30 | 50 | 4.0 | 250 | 6.0 | 225 |
| 2N3904 | NPN AMPL/SWITCH | EBC | 60 | 40 | 6.0 | 50** | 30 | 100 | 300 | 1.0 | 10 | 0.30 | 50 | 4.0 | 300 | 5.0 | 250 |
| 2N3905 | PNP AMPL/SWITCH | EBC | 40 | 40 | 5.0 | 50** | 30 | 50 | 150 | 1.0 | 10 | 0.40 | 50 | 4.5 | 200 | 5.0 | 260 |
| 2N3906 | PN AMPL/SWITCH | EBC | 40 | 40 | 5.0 | 50** | 30 | 100 | 300 | 1.0 | 10 | 0.40 | 50 | 4.5 | 250 | 4.0 | 300 |
| 2N4058 | PNP LOW NOISE | ECB | 30 | 30 | 6.0 | 100 | 20 | 100 | 400 | 5.0 | 0.10 | 0.70 | 10 | --- | --- | 5.0 | --- |
| 2N4123 | NPN AMPL/SWITCH | EBC | 40 | 30 | 5.0 | 50 | 20 | 50 | 150 | 1.0 | 2.0 | 0.30 | 50 | 4.0 | 250 | 6.0 | --- |
| 2N4124 | NPN AMPL/SWITCH | EBC | 30 | 25 | 5.0 | 50 | 20 | 120 | 360 | 1.0 | 2.0 | 0.30 | 50 | 4.0 | 300 | 5.0 | --- |
| 2N4125 | PNP AMPL/SWITCH | EBC | 30 | 30 | 4.0 | 50 | 20 | 50 | 150 | 1.0 | 2.0 | 0.40 | 50 | 4.5 | 200 | 5.0 | --- |
| 2N4126 | PNP AMPL/SWITCH | EBC | 25 | 25 | 4.0 | 50 | 20 | 120 | 360 | 1.0 | 2.0 | 0.40 | 50 | 4.5 | 250 | 4.0 | --- |
| 2N4264 | NPN SAT SWITCH | EBC | 30 | 15 | 6.0 | 100** | 12 | 40 | 160 | 1.0 | 10 | 0.35 | 100 | 4.0 | 350 | --- | 35 |
| 2N4287 | NPN LOW NOISE | ECB | 45 | 45 | 7.0 | 10 | 30 | 150 | 600 | 5.0 | 1.0 | 0.35 | 1.0 | 6.0 | 40 | 5.0 | --- |
| 2N4289 | PNP LOW NOISE | ECB | 60 | 45 | 7.0 | 10 | 45 | 150 | 600 | 0.35 | 1.0 | 0.80 | 1.0 | 8.0 | 40 | 4.0 | --- |
| 2N4400 | NPN AMPL/SWITCH | EBC | 60 | 40 | 6.0 | 100* | 35 | 50 | 150 | 1.0 | 150 | 0.75 | 500 | 6.5 | 200 | --- | 255 |

Devices are available lead formed. See pages 217 and 218 for details.

Small Signal Transistors

TO-92 Case (Continued)



TO-92

TO-92-18R

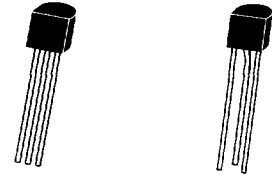
| TYPE NO. | FAMILY | LEAD CODE | V _{CBO} (V) | V _{CEO} (V) | V _{EBO} (V) | I _{CBO} @ V _{CBO} (mA) | V _{CE} (V) | h _{FE} | I _C (mA) | V _{CE(SAT)} @ I _C (V) | C _{ob} (pF) | f _T (MHz) | NF | t _{off} | | | |
|----------|------------------|-----------|-------------------------|-------------------------|-------------------------|---|------------------------|-----------------|------------------------|--|-------------------------|-------------------------|-----|------------------|----------------------------|----------------------------|--------------------|
| | | | | | | | | | | | | | | | *V _{CE(S)} MIN | *I _{CE(S)} MIN | **I _{CEV} |
| 2N4401 | NPN AMPL/SWITCH | EBC | 60 | 40 | 6.0 | 100* | 35 | 100 | 300 | 1.0 | 150 | 0.75 | 500 | 6.5 | 250 | --- | 255 |
| 2N4402 | PNP AMPL/SWITCH | EBC | 40 | 40 | 5.0 | 100* | 35 | 50 | 150 | 2.0 | 150 | 0.75 | 500 | 8.5 | 150 | --- | 255 |
| 2N4403 | PNP AMPL/SWITCH | EBC | 40 | 40 | 5.0 | 100* | 35 | 100 | 300 | 2.0 | 150 | 0.75 | 500 | 8.5 | 200 | --- | 255 |
| 2N4410 | NPN LOW NOISE | EBC | 120 | 80 | 5.0 | 10 | 100 | 60 | 400 | 1.0 | 10 | 0.20 | 1.0 | 12 | 60 | --- | --- |
| 2N4424 | NPN LOW NOISE | ECB | 60 | 40 | 5.0 | 30 | 40 | 180 | 540 | 0.45 | 0.30 | 50 | --- | --- | --- | --- | --- |
| 2N4952 | NPN AMPL/SWITCH | ECB | 60 | 30 | 5.0 | 50 | 40 | 100 | 300 | 10 | 150 | 0.30 | 150 | 8.0 | 250 | --- | 400 |
| 2N4953 | NPN AMPL/SWITCH | ECB | 60 | 30 | 5.0 | 50 | 40 | 200 | 600 | 10 | 150 | 0.30 | 150 | 8.0 | 250 | --- | 400 |
| 2N5086 | PNP LOW NOISE | EBC | 50 | 50 | 3.0 | 10 | 10 | 150 | 500 | 5.0 | 0.10 | 0.30 | 10 | 4.0 | 40 | 3.0 | --- |
| 2N5087 | PNP LOW NOISE | EBC | 50 | 50 | 3.0 | 10 | 10 | 250 | 800 | 5.0 | 0.10 | 0.30 | 10 | 4.0 | 40 | 2.0 | --- |
| 2N5088 | NPN LOW NOISE | EBC | 35 | 30 | 4.5 | 50 | 20 | 300 | 900 | 5.0 | 0.10 | 0.50 | 10 | 4.0 | 50 | 3.0 | --- |
| 2N5089 | NPN LOW NOISE | EBC | 30 | 25 | 4.5 | 50 | 15 | 400 | 1,200 | 5.0 | 0.10 | 0.50 | 10 | 4.0 | 50 | 2.0 | --- |
| 2N5172 | NPN LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 100 | 500 | 10 | 10 | 0.25 | 10 | 13 | 200* | --- | --- |
| 2N5209 | NPN LOW NOISE | EBC | 50 | 50 | 4.5 | 50 | 35 | 100 | 300 | 5.0 | 0.10 | 0.70 | 10 | 4.0 | 30 | 3.0 | --- |
| 2N5210 | NPN LOW NOISE | EBC | 50 | 50 | 4.5 | 50 | 35 | 200 | 600 | 5.0 | 0.10 | 0.70 | 10 | 4.0 | 30 | 2.0 | --- |
| 2N5223 | NPN AMPL/SWITCH | EBC | 25 | 20 | 3.0 | 100 | 10 | 50 | 800 | 0.70 | 10 | 1.20 | 10 | 4.0 | 150 | --- | --- |
| 2N5225 | NPN AMPL/SWITCH | EBC | 25 | 25 | 4.0 | 300 | 15 | 30 | 600 | 10 | 50 | 0.80 | 100 | 20 | 50 | --- | --- |
| 2N5226 | PNP AMPL/SWITCH | EBC | 25 | 25 | 4.0 | 300 | 15 | 30 | 600 | 10 | 50 | 0.80 | 100 | 8.0 | 50 | --- | --- |
| 2N5227 | PN LOW NOISE | EBC | 30 | 30 | 3.0 | 100 | 10 | 50 | 700 | 10 | 2.0 | 0.40 | 10 | 10 | 100 | --- | 5.0 |
| 2N5232A | NPN LOW NOISE | ECB | 70 | 50 | 5.0 | 30 | 50 | 250 | 500 | 5.0 | 2.0 | 0.125 | 10 | 4.0 | --- | 5.0 | --- |
| 2N5306 | NPN DARLINGTON | ECB | 25 | 25 | 12 | 100 | 25 | 7,000 | 70,000 | 5.0 | 2.0 | 1.40 | 200 | 10 | 60 | --- | --- |
| 2N5308 | NPN DARLINGTON | ECB | 40 | 40 | 12 | 100 | 40 | 7,000 | 70,000 | 5.0 | 2.0 | 1.40 | 200 | 10 | 60 | --- | --- |
| 2N5356 | PNP AMPL/SWITCH | ECB | 25 | 25 | 4.0 | 100 | 25 | 250 | 500 | 1.0 | 50 | 0.25 | 50 | 8.0 | 250* | --- | --- |
| 2N5366 | PN AMPL/SWITCH | ECB | 40 | 40 | 4.0 | 100 | 40 | 100 | 300 | 1.0 | 50 | 0.25 | 50 | 8.0 | 250* | --- | --- |
| 2N5367 | PNP AMPL/SWITCH | ECB | 40 | 40 | 4.0 | 100 | 40 | 250 | 500 | 1.0 | 50 | 0.25 | 50 | 8.0 | 250* | --- | --- |
| 2N5374 | PNP AMPL/SWITCH | CBE* | 60 | 30 | 5.0 | 50 | 40 | 200 | 400 | 10 | 150 | 0.30 | 150 | 10 | 150 | --- | --- |
| 2N5375 | PNP AMPL/SWITCH | CBE* | 40 | 30 | 5.0 | 50 | 30 | 40 | 400 | 10 | 150 | 0.30 | 150 | 10 | 150 | --- | --- |
| 2N5376 | NPN AMPL/SWITCH | CBE* | 60 | 30 | 5.0 | 10 | 30 | 120 | --- | 5.0 | 1.0 | --- | --- | 8.0 | --- | --- | --- |
| 2N5377 | NPN AMPL/SWITCH | CBE* | 60 | 30 | 5.0 | 10 | 30 | 120 | --- | 5.0 | 1.0 | --- | --- | 8.0 | --- | --- | --- |
| 2N5381 | NPN AMPL/SWITCH | CBE* | 60 | 40 | 6.0 | 50 | 30 | 100 | 300 | 1.0 | 10 | 12 | 10 | 4.0 | 300 | 5.0 | --- |
| 2N5383 | PNP AMPL/SWITCH | CBE* | 40 | 40 | 5.0 | 50 | 30 | 100 | 300 | 1.0 | 10 | 0.25 | 10 | 4.5 | 250 | 4.0 | --- |
| 2N5400 | PNP HIGH VOLTAGE | EBC | 130 | 120 | 5.0 | 100 | 100 | 40 | 180 | 5.0 | 10 | 0.50 | 50 | 6.0 | 100 | 8.0 | --- |
| 2N5401 | PNP HIGH VOLTAGE | EBC | 160 | 150 | 5.0 | 50 | 120 | 60 | 240 | 5.0 | 10 | 0.50 | 50 | 6.0 | 100 | 8.0 | --- |
| 2N5447 | PNP AMPL/SWITCH | CBE* | 40 | 25 | 5.0 | 100 | 20 | 60 | 300 | 5.0 | 50 | 0.25 | 50 | 12 | 100 | --- | --- |
| 2N5550 | NPN HIGH VOLTAGE | EBC | 160 | 140 | 6.0 | 100 | 100 | 60 | 250 | 5.0 | 10 | 0.25 | 50 | 6.0 | 100 | 10 | --- |
| 2N5551 | NPN HIGH VOLTAGE | EBC | 180 | 160 | 6.0 | 50 | 120 | 80 | 250 | 5.0 | 10 | 0.20 | 50 | 6.0 | 100 | 8.0 | --- |
| 2N5769 | NPN SAT SWITCH | EBC | 40 | 15 | 4.5 | 400 | 20 | 40 | 120 | 0.35 | 10 | 0.50 | 100 | 4.0 | 500 | --- | 18 |
| 2N5770 | NPN RF OSC | EBC | 30 | 15 | 3.0 | 10 | 15 | 50 | 200 | 1.0 | 8.0 | 0.40 | 10 | 1.1 | 800 | --- | --- |
| 2N5771 | PNP SAT SWITCH | EBC | 15 | 15 | 4.5 | 10 | 8.0 | 50 | 120 | 0.30 | 10 | 0.60 | 50 | 3.0 | 850 | --- | 20 |
| 2N5772 | NPN SAT SWITCH | EBC | 40 | 15 | 5.0 | 500* | 20 | 30 | 120 | 0.40 | 30 | 0.50 | 300 | 5.0 | 350 | --- | 28 |
| 2N5810 | NPN AMPL/SWITCH | CBE* | 35 | 25 | 5.0 | 100 | 25 | 60 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 100 | --- | --- |
| 2N5811 | PNP AMPL/SWITCH | CBE* | 35 | 25 | 5.0 | 100 | 25 | 60 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 100 | --- | --- |

Shaded areas indicate Darlington.

Devices are available lead formed. See pages 217 and 218 for details.

Small Signal Transistors

TO-92 Case (Continued)



TO-92 TO-92-18R

| TYPE NO. | FAMILY | LEAD CODE | V _{CBO} (V) | V _{CEO} (V) | V _{EBO} (V) | I _{CBO} @ V _{CBO} | | h _{FE} | | V _{CE} (V) | I _C (mA) | V _{CE(SAT)} @ I _C | | C _{ob} (pF) | f _T (MHz) | NF (dB) | t _{off} | | |
|----------|------------------|-----------|-------------------------|-------------------------|-------------------------|---|------------------------------|--------------------------|--------------------------|------------------------|------------------------|---------------------------------------|--------------------------|-------------------------|-------------------------|------------|------------------|--------------------------|--------------------------|
| | | | | | | I _{CBO} (mA) | V _{CBO} (V) | MIN | MAX | | | MIN | MAX | | | | | V _{CE(SAT)} (V) | I _C (mA) |
| | | | | | | *I _{CES} **I _{CEV} | *V _{CE(SAT)} MIN | *I _{CES} MIN | *I _{CES} MAX | | | *I _{CES} MIN | *I _{CES} MAX | | | | | *I _{CES} MIN | *I _{CES} MAX |
| 2N5812 | NPN AMPL/SWITCH | CBE* | 35 | 25 | 5.0 | 100 | 25 | 150 | 500 | 2.0 | 2.0 | 0.75 | 500 | 15 | 135 | ---- | ---- | | |
| 2N5813 | PNP AMPL/SWITCH | CBE* | 35 | 25 | 5.0 | 100 | 25 | 150 | 500 | 2.0 | 2.0 | 0.75 | 500 | 15 | 135 | ---- | ---- | | |
| 2N5816 | NPN AMPL/SWITCH | CBE* | 50 | 40 | 5.0 | 100 | 25 | 100 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 120 | ---- | ---- | | |
| 2N5817 | PNP AMPL/SWITCH | CBE* | 50 | 40 | 5.0 | 100 | 25 | 100 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 120 | ---- | ---- | | |
| 2N5818 | NPN AMPL/SWITCH | CBE* | 50 | 40 | 5.0 | 100 | 25 | 150 | 300 | 2.0 | 2.0 | 0.75 | 500 | 15 | 135 | ---- | ---- | | |
| 2N5819 | PNP AMPL/SWITCH | CBE* | 50 | 40 | 5.0 | 100 | 25 | 150 | 300 | 2.0 | 2.0 | 0.75 | 500 | 15 | 135 | ---- | ---- | | |
| 2N5822 | NPN AMPL/SWITCH | CBE* | 70 | 60 | 5.0 | 100 | 25 | 100 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 120 | ---- | ---- | | |
| 2N5823 | PNP AMPL/SWITCH | CBE* | 70 | 60 | 5.0 | 100 | 25 | 100 | 200 | 2.0 | 2.0 | 0.75 | 500 | 15 | 120 | ---- | ---- | | |
| 2N5830 | NPN HIGH VOLTAGE | EBC | 120 | 100 | 5.0 | 50 | 100 | 80 | 500 | 5.0 | 10 | 0.25 | 50 | 4.0 | 100 | ---- | ---- | | |
| 2N5831 | NPN HIGH VOLTAGE | EBC | 160 | 140 | 5.0 | 50 | 120 | 80 | 500 | 5.0 | 10 | 0.25 | 50 | 4.0 | 100 | ---- | ---- | | |
| 2N5961 | NPN LOW NOISE | EBC | 60 | 60 | 8.0 | 2.0 | 60 | 170 | 700 | 5.0 | 10 | 0.20 | 10 | 4.0 | 100 | 3.0 | --- | | |
| 2N5962 | NPN LOW NOISE | EBC | 45 | 45 | 8.0 | 2.0 | 45 | 600 | 1,400 | 5.0 | 10 | 0.20 | 10 | 4.0 | 100 | 3.0 | --- | | |
| 2N5963 | NPN LOW NOISE | EBC | 30 | 30 | 8.0 | 2.0 | 30 | 1,200 | 2,000 | 5.0 | 10 | 0.20 | 10 | 4.0 | 150 | 3.0 | --- | | |
| 2N6076 | PNP LOW NOISE | ECB | 25 | 25 | 5.0 | 100 | 25 | 100 | 500 | 10 | 10 | 0.25 | 10 | 13 | 200* | --- | --- | | |
| 2N6426 | NPN DARLINGTON | EBC | 40 | 40 | 12 | 50 | 30 | 20,000 | 200,000 | 5.0 | 500 | 1.50 | 500 | 7.0 | 150 | 10 | --- | | |
| 2N6427 | NPN DARLINGTON | EBC | 40 | 40 | 12 | 50 | 30 | 14,000 | 140,000 | 5.0 | 500 | 1.50 | 500 | 7.0 | 130 | 10 | --- | | |
| 2N6515 | NPN HIGH VOLTAGE | EBC | 250 | 250 | 6.0 | 50 | 150 | 45 | 220 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| 2N6516 | NPN HIGH VOLTAGE | EBC | 300 | 300 | 6.0 | 50 | 200 | 40 | 200 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| 2N6517 | NPN HIGH VOLTAGE | EBC | 350 | 350 | 6.0 | 50 | 250 | 20 | 100 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| 2N6518 | PNP HIGH VOLTAGE | EBC | 250 | 250 | 5.0 | 50 | 150 | 45 | 220 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| 2N6519 | PNP HIGH VOLTAGE | EBC | 300 | 300 | 5.0 | 50 | 200 | 40 | 200 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| 2N6520 | PNP HIGH VOLTAGE | EBC | 350 | 350 | 5.0 | 50 | 250 | 20 | 100 | 10 | 50 | 1.0 | 50 | 6.0 | 40 | --- | --- | | |
| BCX38A | NPN DARLINGTON | EBC | 80 | 60 | 10 | 100 | 60 | 1,000 | --- | 5.0 | 500 | 1.25 | 800 | --- | --- | --- | --- | | |
| BCX38B | NPN DARLINGTON | EBC | 80 | 60 | 10 | 100 | 60 | 4,000 | --- | 5.0 | 500 | 1.25 | 800 | --- | --- | --- | --- | | |
| BCX38C | NPN DARLINGTON | EBC | 80 | 60 | 10 | 100 | 60 | 10,000 | --- | 5.0 | 500 | 1.25 | 800 | --- | --- | --- | --- | | |
| GES6014 | NPN AMPL/SWITCH | EBC | 70 | 60 | 5.0 | 10 | 25 | 100 | 300 | 1.0 | 10 | 0.50 | 500 | 10 | 105 | 5.0 | 400 | | |
| MPS650 | NPN HIGH CURRENT | EBC | 60 | 40 | 5.0 | 100 | 60 | 40 | ---- | 2.0 | 2,000 | 0.50 | 2,000 | ---- | 75 | ---- | ---- | | |
| MPS651 | NPN HIGH CURRENT | EBC | 80 | 60 | 5.0 | 100 | 80 | 40 | ---- | 2.0 | 2,000 | 0.50 | 2,000 | ---- | 75 | ---- | ---- | | |
| MPS750 | PNP HIGH CURRENT | EBC | 60 | 40 | 5.0 | 100 | 60 | 40 | ---- | 2.0 | 2,000 | 0.50 | 2,000 | ---- | 75 | ---- | ---- | | |
| MPS751 | PNP HIGH CURRENT | EBC | 80 | 60 | 5.0 | 100 | 80 | 40 | ---- | 2.0 | 2,000 | 0.50 | 2,000 | ---- | 75 | ---- | ---- | | |
| MPS3392 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 18 | 150 | 300 | 4.5 | 2.0 | ---- | ---- | 10 | ---- | ---- | ---- | | |
| MPS3395 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 18 | 150 | 500 | 4.5 | 2.0 | ---- | ---- | 10 | ---- | ---- | ---- | | |
| MPS3396 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 18 | 90 | 500 | 4.5 | 2.0 | ---- | ---- | 10 | ---- | ---- | ---- | | |
| MPS3397 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 18 | 55 | 500 | 4.5 | 2.0 | ---- | ---- | 10 | ---- | ---- | ---- | | |
| MPS3398 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 18 | 55 | 800 | 4.5 | 2.0 | ---- | ---- | 10 | ---- | ---- | ---- | | |
| MPS3415 | NPN LOW NOISE | EBC | 25 | 25 | 5.0 | 100 | 25 | 180 | 540 | 4.5 | 2.0 | 0.30 | 50 | ---- | ---- | ---- | ---- | | |
| MPS3702 | PNP AMPL/SWITCH | EBC | 40 | 25 | 5.0 | 100 | 20 | 60 | 300 | 5.0 | 50 | 0.25 | 50 | 12 | 100 | ---- | ---- | | |
| MPS3704 | NPN AMPL/SWITCH | EBC | 50 | 30 | 5.0 | 100 | 20 | 100 | 300 | 2.0 | 50 | 0.60 | 100 | 12 | 100 | ---- | ---- | | |
| MPS3706 | NPN AMPL/SWITCH | EBC | 40 | 20 | 5.0 | 100 | 20 | 30 | 600 | 2.0 | 50 | 1.0 | 100 | 12 | 100 | ---- | ---- | | |
| MPS3707 | NPN LOW NOISE | EBC | 30 | 30 | 6.0 | 100 | 20 | 100 | 400 | 5.0 | 0.10 | 1.0 | 10 | 4.0 | ---- | 5.0 | ---- | | |
| MPS3708 | NPN LOW NOISE | EBC | 30 | 30 | 6.0 | 100 | 20 | 45 | 660 | 5.0 | 1.0 | 1.0 | 10 | ---- | ---- | ---- | ---- | | |

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TO-92 Case (Continued)



TO-92

| TYPE NO. | FAMILY | LEAD CODE | V _{CBO} (V) | V _{CEO} (V) | V _{EB0} (V) | I _{CBO} @ V _{CBO} | | h _{FE} | | V _{CE} (V) | I _C (mA) | V _{CE(SAT)} @ I _C | | C _{ob} (pF) | f _T (MHz) | NF (dB) | t _{off} |
|----------|-----------------|-----------|-------------------------|-------------------------|-------------------------|-------------------------------------|-------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------------------|------------------------------|-------------------------|-------------------------|------------|------------------|
| | | | | | | I _{CBO} (nA) | I _{CBO} (V) | h _{FE} MIN | h _{FE} MAX | | | V _{CE(SAT)} (V) | V _{CE(SAT)} (mA) | | | | |
| | | | | | | | | | | | | | | | | | |
| MPS3710 | NPN LOW NOISE | EBC | 30 | 30 | 6.0 | 100 | 20 | 90 | 330 | 5.0 | 1.0 | 1.0 | 10 | --- | --- | --- | --- |
| MPS3711 | NPN LOW NOISE | EBC | 30 | 30 | 6.0 | 100 | 20 | 180 | 660 | 1.0 | 1.0 | 1.0 | 10 | --- | --- | --- | --- |
| MPS3721 | NPN LOW NOISE | EBC | 18 | 18 | 5.0 | 500 | 18 | 60 | 660 | 10 | 2.0 | --- | --- | 3.5 | --- | --- | --- |
| MPS3826 | NPN AMPL/SWITCH | EBC | 60 | 45 | 4.0 | 100 | 30 | 40 | 160 | 10 | 10 | --- | --- | 3.5 | 200 | --- | --- |
| MPS3827 | NPN AMPL/SWITCH | EBC | 60 | 45 | 4.0 | 100 | 30 | 100 | 400 | 10 | 10 | --- | --- | 3.5 | 200 | --- | --- |
| MPS5172 | NPN LOW NOISE | EBC | 25 | 25 | 5.0 | 100 | 25 | 100 | 500 | 10 | 10 | 0.25 | 10 | 10 | 120* | --- | --- |
| MPS5306 | NPN DARLINGTON | EBC | 25 | 25 | 12 | 100 | 25 | 7,000 | 70,000 | 5.0 | 2.0 | 1.40 | 200 | 10 | 60 | --- | --- |
| MPS5308 | NPN DARLINGTON | EBC | 40 | 40 | 12 | 100 | 40 | 7,000 | 70,000 | 5.0 | 2.0 | 1.40 | 200 | 10 | 60 | --- | --- |
| MPS6507 | NPN RF OSC | EBC | 30 | 20 | 3.0 | 50 | 15 | 25 | --- | 10 | 2.0 | --- | --- | 2.5 | 700 | --- | --- |
| MPS6511 | NPN RF OSC | EBC | 30 | 20 | 3.0 | 50 | 15 | 25 | --- | 10 | 10 | --- | --- | 2.5 | --- | --- | --- |
| MPS6513 | NPN AMPL/SWITCH | EBC | 40 | 30 | 4.0 | 50 | 30 | 90 | 180 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | --- | --- |
| MPS6514 | NPN AMPL/SWITCH | EBC | 40 | 25 | 4.0 | 50 | 30 | 150 | 300 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | --- | --- |
| MPS6515 | NPN AMPL/SWITCH | EBC | 40 | 25 | 4.0 | 50 | 30 | 250 | 500 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | --- | --- |
| MPS6517 | PNP AMPL/SWITCH | EBC | 40 | 40 | 4.0 | 50 | 30 | 90 | 180 | 10 | 2.0 | 0.50 | 50 | 4.0 | --- | --- | --- |
| MPS6518 | PNP AMPL/SWITCH | EBC | 40 | 40 | 4.0 | 50 | 30 | 150 | 300 | 10 | 2.0 | 0.50 | 50 | 4.0 | --- | --- | --- |
| MPS6519 | PNP AMPL/SWITCH | EBC | 25 | 25 | 4.0 | 50 | 20 | 250 | 500 | 10 | 2.0 | 0.50 | 50 | 4.0 | --- | --- | --- |
| MPS6520 | NPN LOW NOISE | EBC | 40 | 25 | 4.0 | 50 | 30 | 200 | 400 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | 3.0 | --- |
| MPS6521 | NPN LOW NOISE | EBC | 40 | 25 | 4.0 | 50 | 30 | 300 | 600 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | 3.0 | --- |
| MPS6522 | PNP LOW NOISE | EBC | 25 | 25 | 4.0 | 50 | 20 | 200 | 400 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | 3.0 | --- |
| MPS6523 | PNP LOW NOISE | EBC | 25 | 25 | 4.0 | 50 | 20 | 300 | 600 | 10 | 2.0 | 0.50 | 50 | 3.5 | --- | 3.0 | --- |
| MPS6531 | NPN AMPL/SWITCH | EBC | 60 | 40 | 5.0 | 50 | 40 | 90 | 270 | 1.0 | 100 | 0.30 | 100 | 5.0 | --- | --- | --- |
| MPS6532 | NPN AMPL/SWITCH | EBC | 50 | 30 | 5.0 | 100 | 30 | 30 | --- | 1.0 | 100 | 0.50 | 100 | 5.0 | --- | --- | --- |
| MPS6534 | PNP AMPL/SWITCH | EBC | 40 | 40 | 4.0 | 50 | 30 | 90 | 270 | 1.0 | 100 | 0.30 | 100 | 7.0 | --- | --- | --- |
| MPS6535 | PNP AMPL/SWITCH | EBC | 30 | 30 | 4.0 | 50 | 30 | 30 | --- | 1.0 | 100 | 0.50 | 100 | 7.0 | --- | --- | --- |
| MPS6560 | NPN AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 20 | 50 | 200 | 1.0 | 500 | 0.50 | 500 | 30 | 60 | --- | --- |
| MPS6561 | NPN AMPL/SWITCH | EBC | 20 | 20 | 4.0 | 100 | 20 | 50 | 200 | 1.0 | 350 | 0.50 | 350 | 30 | 60 | --- | --- |
| MPS6562 | PNP AMPL/SWITCH | EBC | 25 | 25 | 5.0 | 100 | 20 | 50 | 200 | 1.0 | 500 | 0.50 | 500 | 30 | 60 | --- | --- |
| MPS6563 | PNP AMPL/SWITCH | EBC | 20 | 20 | 4.0 | 100 | 20 | 50 | 200 | 1.0 | 350 | 0.50 | 350 | 30 | 60 | --- | --- |
| MPS6564 | NPN AMPL/SWITCH | EBC | --- | 45 | 5.0 | 500 | 40 | 25 | --- | 5.0 | 40 | 0.50 | 10 | 4.0 | --- | --- | --- |
| MPS6566 | NPN AMPL/SWITCH | EBC | 60 | 45 | 4.0 | 100 | 30 | 100 | 400 | 10 | 10 | 0.40 | 10 | 3.5 | --- | --- | --- |
| MPS8097 | NPN LOW NOISE | EBC | 60 | 40 | 6.0 | 30 | 40 | 250 | 5.0 | 0.10 | --- | --- | --- | 4.0 | --- | 2.0 | --- |
| MPS8098 | NPN AMPL/SWITCH | EBC | 60 | 60 | 6.0 | 100 | 60 | 100 | 300 | 5.0 | 1.0 | 0.30 | 100 | 6.0 | 150 | --- | --- |
| MPS8099 | NPN AMPL/SWITCH | EBC | 80 | 80 | 6.0 | 100 | 80 | 100 | 300 | 5.0 | 1.0 | 0.30 | 100 | 6.0 | 150 | --- | --- |
| MPS8598 | PNP AMPL/SWITCH | EBC | 60 | 60 | 5.0 | 100 | 60 | 100 | 300 | 5.0 | 1.0 | 0.30 | 100 | 8.0 | 150 | --- | --- |
| MPS8599 | PNP AMPL/SWITCH | EBC | 80 | 80 | 5.0 | 100 | 80 | 100 | 300 | 5.0 | 1.0 | 0.30 | 100 | 8.0 | 150 | --- | --- |
| MPSA05 | NPN AMPL/SWITCH | EBC | 60 | 60 | 4.0 | 100 | 60 | 50 | --- | 1.0 | 100 | 0.25 | 100 | --- | 100 | --- | --- |
| MPSA06 | NPN AMPL/SWITCH | EBC | 80 | 80 | 4.0 | 100 | 80 | 50 | --- | 1.0 | 100 | 0.25 | 100 | --- | 100 | --- | --- |
| MPSA13 | NPN DARLINGTON | EBC | 30 | 30* | 10 | 100 | 30 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA14 | NPN DARLINGTON | EBC | 30 | 30* | 10 | 100 | 30 | 20,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA18 | NPN LOW NOISE | EBC | 45 | 45 | 6.5 | 50 | 30 | 500 | 1,500 | 5.0 | 10 | --- | --- | 3.0 | 100 | 1.5 | --- |
| MPSA20 | NPN AMPL/SWITCH | EBC | --- | 40 | 4.0 | 100 | 30 | 40 | 400 | 10 | 5.0 | 0.25 | 10 | 4.0 | 125 | --- | --- |

Shaded areas indicate Darlington.
 Devices are available lead formed. See pages 217 and 218 for details.

Small Signal Transistors

TO-92 Case (Continued)



TO-92

| TYPE NO. | FAMILY | LEAD CODE | V _{CBO} | V _{CEO} | V _{EBO} | I _{CBO} @ V _{CBO} | h _{FE} | | @ V _{CE} | @ I _C | V _{CE(SAT)} @ I _C | | C _{ob} | f _T | NF | t _{off} | |
|----------------|------------------|-----------|------------------|------------------|------------------|-------------------------------------|-----------------|--------|--------------------------------|------------------|---------------------------------------|------|-----------------|----------------|----------------------|------------------|-----|
| | | | (V) | (V) | (V) | (nA) | (V) | MIN | *h _{FE} (1kHz) MAX | (V) | (mA) | (V) | (mA) | (pF) MAX | (MHz) *TYP MIN | (dB) MAX | MAX |
| MPSA25 | NPN DARLINGTON | EBC | 40 | 40* | 10 | 100 | 30 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | 125 | --- | --- | --- |
| MPSA26 | NPN DARLINGTON | EBC | 50 | 50* | 10 | 100 | 40 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | 125 | --- | --- | --- |
| MPSA27 | NPN DARLINGTON | EBC | 60 | 50* | 10 | 100 | 50 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | 125 | --- | --- | --- |
| MPSA28 | NPN DARLINGTON | EBC | 80 | 80* | 12 | 100 | 60 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | 8.0 | 125 | --- | --- |
| MPSA29 | NPN DARLINGTON | EBC | 100 | 100 | 12 | 100 | 80 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | 8.0 | 125 | --- | --- |
| MPSA42 | NPN HIGH VOLTAGE | EBC | 300 | 300 | 6.0 | 100 | 200 | 40 | --- | 10 | 30 | 0.50 | 20 | 3.0 | 50 | --- | --- |
| MPSA44 | NPN HIGH VOLTAGE | EBC | 500 | 400 | 6.0 | 100 | 400 | 50 | 200 | 10 | 10 | 0.75 | 50 | 6.0 | 20 | --- | --- |
| MPSA45 | NPN HIGH VOLTAGE | EBC | 400 | 350 | 6.0 | 100 | 320 | 50 | 200 | 10 | 10 | 0.75 | 50 | 6.0 | 20 | --- | --- |
| MPSA55 | PN AMPL/SWITCH | EBC | 60 | 60 | 4.0 | 100 | 60 | 50 | --- | 1.0 | 100 | 0.25 | 100 | --- | 50 | --- | --- |
| MPSA56 | PNP AMPL/SWITCH | EBC | 80 | 80 | 4.0 | 100 | 80 | 50 | --- | 1.0 | 100 | 0.25 | 100 | --- | 50 | --- | --- |
| MPSA62 | PNP DARLINGTON | EBC | 20 | 20* | 10 | 100 | 15 | 20,000 | --- | 5.0 | 10 | 1.0 | 10 | --- | 125 | --- | --- |
| MPSA63 | PNP DARLINGTON | EBC | 30 | 30* | 10 | 100 | 30 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA64 | PNP DARLINGTON | EBC | 30 | 30* | 10 | 100 | 30 | 20,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA65 | PNP DARLINGTON | EBC | 30 | 30* | 8.0 | 100 | 30 | 20,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 100 | --- | --- |
| MPSA66 | PNP DARLINGTON | EBC | 30 | 30* | 8.0 | 100 | 30 | 40,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 100 | --- | --- |
| MPSA70 | PNP LOW NOISE | EBC | --- | 40 | 4.0 | 100 | 30 | 40 | 400 | 10 | 5.0 | 0.25 | 10 | 4.0 | 125 | --- | --- |
| MPSA75 | PNP DARLINGTON | EBC | 40 | 40* | 10 | 100 | 30 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA76 | PNP DARLINGTON | EBC | 50 | 50* | 10 | 100 | 40 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA77 | PNP DARLINGTON | EBC | 60 | 60* | 10 | 100 | 50 | 10,000 | --- | 5.0 | 100 | 1.50 | 100 | --- | 125 | --- | --- |
| MPSA92 | PNP HIGH VOLTAGE | EBC | 300 | 300 | 5.0 | 250 | 200 | 25 | --- | 10 | 30 | 0.5 | 20 | 6.0 | 50 | --- | --- |
| MPSD04 | NPN DARLINGTON | EBC | --- | 25* | 10 | 1,000 | 20 | 1,000 | --- | 5.0 | 300 | 1.0 | 100 | --- | 100 | --- | --- |
| MPSD54 | PNP DARLINGTON | EBC | --- | 25* | 10 | 1,000 | 20 | 1,000 | --- | 5.0 | 100 | 1.0 | 100 | --- | 100 | --- | --- |
| MPSH10 | NPN RF OSC | BEC | 30 | 25 | 3.0 | 100 | 25 | 60 | --- | 10 | 4.0 | 0.50 | 4.0 | 0.65* | 650 | --- | --- |
| MPSH11 | NPN RF OSC | BEC | 30 | 25 | 3.0 | 100 | 25 | 60 | --- | 10 | 4.0 | 0.50 | 4.0 | 0.90* | 650 | --- | --- |
| MPSL01 | NPN HIGH VOLTAGE | EBC | 140 | 120 | 5.0 | 1,000 | 75 | 50 | 300 | 5.0 | 10 | 0.30 | 50 | 8.0 | 60 | --- | --- |
| MPSL51 | PNP HIGH VOLTAGE | EBC | 100 | 100 | 4.0 | 1,000 | 50 | 40 | 250 | 5.0 | 50 | 0.30 | 50 | 8.0 | 60 | --- | --- |
| PN918 | NPN RF OSC | EBC | 30 | 15 | 3.0 | 10 | 15 | 20 | --- | 1.0 | 3.0 | 0.40 | 10 | 1.7 | 600 | 6.0 | --- |
| PN2222A | NPN AMPL/SWITCH | EBC | 75 | 40 | 6.0 | 10 | 60 | 100 | 300 | 10 | 150 | 1.0 | 500 | 8.0 | 300 | 4.0 | 285 |
| PN2369A | NPN SAT SWITCH | EBC | 40 | 15 | 4.5 | 400 | 20 | 40 | 120 | 0.35 | 10 | 0.50 | 100 | 4.0 | 500 | --- | 18 |
| PN2484 | NPN LOW NOISE | EBC | 60 | 60 | 6.0 | 10 | 45 | 250 | --- | 5.0 | 1.0 | 0.30 | 1.0 | 6.0 | --- | 3.0 | --- |
| PN2907A | PNP AMPL/SWITCH | EBC | 60 | 60 | 5.0 | 10 | 50 | 100 | 300 | 10 | 150 | 1.60 | 500 | 8.0 | 200 | --- | 100 |
| PN3563 | NPN RF OSC | EBC | 30 | 12 | 2.0 | 50 | 15 | 20 | 200 | 10 | 8.0 | --- | --- | 1.7 | 600 | --- | --- |
| PN3564 | NPN RF OSC | EBC | 30 | 15 | 4.0 | 50 | 15 | 20 | 200 | 10 | 15 | 0.30 | 20 | 3.5 | 400 | --- | --- |
| PN3565 | NPN LOW NOISE | EBC | 30 | 25 | 6.0 | 50 | 25 | 150 | 600 | 10 | 1.0 | 0.35 | 1.0 | 4.0 | 40 | --- | --- |
| PN3566 | NPN AMPL/SWITCH | EBC | 40 | 30 | 5.0 | 50 | 20 | 150 | 600 | 10 | 10 | 1.0 | 100 | 25 | 40 | --- | --- |
| PN3567 | NPN AMPL/SWITCH | EBC | 80 | 40 | 5.0 | 50 | 40 | 40 | 120 | 1.0 | 150 | 0.25 | 150 | 20 | 60 | --- | --- |
| PN3568 | NPN AMPL/SWITCH | EBC | 80 | 60 | 5.0 | 50 | 40 | 40 | 120 | 1.0 | 150 | 0.25 | 150 | 20 | 60 | --- | --- |
| PN3569 | NPN AMPL/SWITCH | EBC | 80 | 40 | 5.0 | 50 | 40 | 100 | 300 | 1.0 | 150 | 0.25 | 150 | 20 | 60 | --- | --- |
| PN3638A | PNP AMPL/SWITCH | EBC | 25 | 25 | 4.0 | 35* | 15 | 100 | --- | 1.0 | 50 | 1.0 | 300 | 10 | 150 | --- | 170 |
| PN3639 | PNP SAT SWITCH | EBC | 6.0 | 6.0 | 4.0 | 10* | 3.0 | 30 | 120 | 0.30 | 10 | 0.50 | 50 | 3.5 | 500 | --- | 60 |
| PN3640 | PNP SAT SWITCH | EBC | 12 | 12 | 4.0 | 10* | 6.0 | 30 | 120 | 0.30 | 10 | 0.60 | 50 | 3.5 | 500 | --- | 75 |

Shaded areas indicate Darlington.

Devices are available lead formed. See pages 217 and 218 for details.

Small Signal Transistors

TO-92 Case (Continued)



TO-92

| TYPE NO. | FAMILY | LEAD CODE | V _{CBO} | V _{CEO} | V _{EBO} | I _{CBO} @ V _{CBO} | | h _{FE} | | @ V _{CE} | @ I _C | V _{CE(SAT)} @ I _C | | C _{ob} | f _T | NF | t _{off} |
|----------|-----------------|-----------|------------------|--------------------------|------------------|--|-----|--------------------------------|-------|-------------------|------------------|---------------------------------------|-------------------------|-----------------|----------------|------|------------------|
| | | | (V) | (V) | (V) | (mA) | (V) | | (V) | (mA) | (V) | (mA) | (pF) | (MHz) | (dB) | | |
| | | | MIN | *V _{CES} MIN | MIN | *I _{CES} *I _{CEV} | MIN | *h _{FE} (1kHz) MAX | | | | | *C _{rb} MAX | *TYP MIN | MAX | MAX | |
| PN3641 | NPN AMPL/SWITCH | EBC | 60 | 30 | 5.0 | 50* | 50 | 40 | 120 | 10 | 150 | 0.22 | 150 | 8.0 | 150 | --- | 150 |
| PN3642 | NPN AMPL/SWITCH | EBC | 60 | 45 | 5.0 | 50* | 50 | 40 | 120 | 10 | 150 | 0.22 | 150 | 8.0 | 150 | --- | 150 |
| PN3643 | NPN AMPL/SWITCH | EBC | 60 | 30 | 5.0 | 50* | 50 | 100 | 300 | 10 | 150 | 0.22 | 150 | 8.0 | 250 | --- | 150 |
| PN3644 | PNP AMPL/SWITCH | EBC | 45 | 45 | 5.0 | 35* | 30 | 100 | 300 | 10 | 150 | 1.0 | 300 | 8.0 | 200 | ---- | 100 |
| PN3645 | PNP AMPL/SWITCH | EBC | 60 | 60 | 5.0 | 35* | 50 | 100 | 300 | 10 | 150 | 1.0 | 300 | 8.0 | 200 | ---- | 100 |
| PN3646 | NPN SAT SWITCH | EBC | 40 | 15 | 5.0 | 500* | 20 | 30 | 120 | 0.40 | 30 | 0.50 | 300 | 5.0 | 350 | --- | 28 |
| PN3694 | NPN AMPL/SWITCH | EBC | 45 | 45 | 4.0 | 50 | 30 | 100 | 400 | 10 | 10 | ---- | ---- | 6.0 | 200 | --- | ---- |
| PN4249 | PNP LOW NOISE | EBC | 60 | 60 | 5.0 | 10 | 40 | 100 | 300 | 5.0 | 0.10 | 0.25 | 10 | 6.0 | 40 | 3.0 | --- |
| PN4250A | PNP LOW NOISE | EBC | 60 | 60 | 5.0 | 10 | 50 | 250 | 700 | 5.0 | 0.10 | 0.25 | 10 | 6.0 | 50 | 2.0 | --- |
| PN4258 | PNP SAT SWITCH | EBC | 12 | 12 | 4.5 | 10* | 6.0 | 30 | 120 | 3.0 | 10 | 0.50 | 50 | 3.0 | 700 | --- | 20 |
| PN4274 | NPN SAT SWITCH | EBC | 30 | 12 | 4.5 | 400* | 20 | 35 | 120 | 1.0 | 10 | 0.50 | 100 | 4.0 | 400 | --- | 12 |
| PN4275 | NPN SAT SWITCH | EBC | 40 | 15 | 4.5 | 400* | 20 | 35 | 120 | 1.0 | 10 | 0.50 | 100 | 4.0 | 400 | --- | 12 |
| PN4354 | PNP AMPL/SWITCH | EBC | 60 | 60 | 5.0 | 50 | 50 | 50 | 500 | 10 | 10 | 0.50 | 500 | 30 | 100 | 3.0 | 400 |
| PN4355 | PNP AMPL/SWITCH | EBC | 60 | 60 | 5.0 | 50 | 50 | 100 | 400 | 10 | 10 | 1.0 | 1,000 | 30 | 100 | 3.0 | 400 |
| PN4356 | PNP AMPL/SWITCH | EBC | 80 | 80 | 5.0 | 50 | 50 | 50 | 250 | 10 | 10 | 0.50 | 500 | 30 | 100 | 3.0 | 400 |
| PN4916 | PNP AMPL/SWITCH | EBC | 30 | 30 | 5.0 | 25 | 15 | 70 | 200 | 1.0 | 10 | 0.30 | 50 | 4.5 | 400 | 4.0 | ---- |
| PN4917 | PNP AMPL/SWITCH | EBC | 30 | 30 | 5.0 | 25 | 15 | 150 | 300 | 1.0 | 10 | 0.30 | 50 | 4.5 | 450 | 4.0 | ---- |
| PN5127 | NPN AMPL/SWITCH | EBC | 20 | 12 | 3.0 | 50 | 10 | 15 | 300 | 10 | 2.0 | 0.30 | 10 | 3.5 | 150 | ---- | ---- |
| PN5128 | NPN AMPL/SWITCH | EBC | 15 | 12 | 3.0 | 50 | 10 | 35 | 350 | 10 | 50 | 0.25 | 150 | 10 | 150 | ---- | ---- |
| PN5129 | NPN AMPL/SWITCH | EBC | 15 | 12 | 3.0 | 50 | 10 | 35 | 350 | 10 | 50 | 0.25 | 150 | 10 | --- | ---- | ---- |
| PN5130 | NPN RF OSC | EBC | 30 | 12 | 1.0 | 50 | 10 | 15 | 250 | 10 | 8.0 | 0.60 | 10 | 1.7 | ---- | 400 | ---- |
| PN5131 | NPN AMPL/SWITCH | EBC | 20 | 15 | 3.0 | 50 | 10 | 30 | 50 | 1.0 | 10 | 1.0 | 10 | 6.0 | 100 | ---- | ---- |
| PN5132 | NPN AMPL/SWITCH | EBC | 20 | 20 | 3.0 | 50 | 10 | 30 | 400 | 10 | 10 | 2.0 | 10 | 3.5 | 200 | 4.0 | ---- |
| PN5133 | NPN LOW NOISE | EBC | 20 | 18 | 3.0 | 50 | 15 | 60 | 1,000 | 5.0 | 1.0 | 0.40 | 1.0 | 5.0 | 40 | ---- | ---- |
| PN5134 | NPN SAT SWITCH | EBC | 20 | 10 | 3.5 | 10,000 | 15 | 20 | 150 | 1.0 | 10 | 0.25 | 10 | 4.0 | 250 | ---- | 18 |
| PN5135 | NPN AMPL/SWITCH | EBC | 30 | 25 | 4.0 | 300 | 15 | 50 | 600 | 10 | 10 | 1.0 | 100 | 25 | 40 | ---- | ---- |
| PN5136 | NPN AMPL/SWITCH | EBC | 30 | 20 | 3.0 | 100 | 20 | 20 | 400 | 1.0 | 150 | 0.25 | 150 | 35 | 40 | ---- | ---- |
| PN5137 | NPN AMPL/SWITCH | EBC | 30 | 20 | 3.0 | 100 | 20 | 20 | 400 | 1.0 | 150 | 0.25 | 150 | 35 | 40 | ---- | ---- |
| PN5138 | PNP AMPL/SWITCH | EBC | 30 | 30 | 5.0 | 50 | 20 | 50 | 800 | 10 | 0.10 | 0.30 | 10 | 7.0 | 30 | ---- | ---- |
| PN5139 | PNP AMPL/SWITCH | EBC | 20 | 20 | 5.0 | 50* | 15 | 40 | ---- | 1.0 | 10 | 0.50 | 50 | 5.0 | 300 | ---- | 200 |
| PN5142 | PNP AMPL/SWITCH | EBC | 20 | 20 | 4.0 | 50* | 12 | 30 | ---- | 1.0 | 50 | 2.0 | 300 | 10 | ---- | ---- | 200 |
| PN5143 | PNP AMPL/SWITCH | EBC | 20 | 20 | 4.0 | 50* | 12 | 30 | ---- | 1.0 | 50 | 2.0 | 300 | 10 | ---- | ---- | 200 |
| PN5825 | NPN AMPL/SWITCH | EBC | 50 | 40 | 5.0 | 50 | 40 | 100 | 200 | 5.0 | 2.0 | 0.125 | 10 | 4.0 | 90 | ---- | ---- |
| PN5826 | NPN AMPL/SWITCH | EBC | 50 | 40 | 5.0 | 50 | 40 | 150 | 300 | 5.0 | 2.0 | 0.125 | 10 | 4.0 | 90 | ---- | ---- |
| PN5827 | NPN AMPL/SWITCH | EBC | 50 | 40 | 5.0 | 50 | 40 | 250 | 500 | 5.0 | 2.0 | 0.125 | 10 | 4.0 | 90 | ---- | ---- |
| PN5828 | NPN AMPL/SWITCH | EBC | 50 | 40 | 5.0 | 50 | 40 | 400 | 800 | 5.0 | 2.0 | 0.125 | 10 | 4.0 | 90 | ---- | ---- |
| PN5910 | PNP SAT SWITCH | EBC | 20 | 20 | 4.5 | 10* | 10 | 30 | 120 | 0.30 | 10 | 0.50 | 50 | 3.0 | 700 | --- | 20 |
| PN6010 | NPN AMPL/SWITCH | EBC | 50 | 40 | 5.0 | 10 | 25 | 100 | 300 | 1.0 | 10 | 0.50 | 500 | 10 | 105 | 5.0 | 400 |

Shaded areas indicate Darlington.

Devices are available lead formed. See pages 217 and 218 for details.