

TO-92 Plastic Package Transistors (NPN)

| Maximum Ratings | | | | | | | Electrical Characteristics (Ta=25°C, Unless Otherwise Specified) | | | | | | | | | | | | | | | | | | | | |
|-----------------|----------------------|----------------------|----------------------|--------------------|--------------------|-----------------------|--|-----------------------|---------------------|-------------------|-----|--------------------------------------|-----|--------------------------|------|--------------------------|---------------------|----------------------|------|----------------------|-----|-----|-----------------------|---------------------|--------------|----------------------|-----------------|
| Type No. | V _{CEO} (V) | V _{CE0} (V) | V _{EBO} (V) | P _D (W) | I _C (A) | I _{CEO} (μA) | V _{CB} (V) | I _{CES} (μA) | V _{CE} (V) | h _{FE} @ | | I _C & V _{CE} (V) | | V _{CE(SAT)} (V) | | V _{BE(SAT)} (V) | I _C (mA) | C _{ob} (pF) | | f _t (MHz) | | | t _{off} (ns) | N _F (dB) | @ Freq (MHz) | C _{ob} (pF) | CDIL Case Style |
| | Min | Min | Min | @ Tc=25°C | Max | Max | Max | Max | Min | Max | Min | Max | Min | Max | Max | Min | Max | Typ | Max | Min | Typ | Max | Max | Max | Max | Max | Max |
| BF195 | 30 | 20 | 5 | 0.4 | 0.03 | 0.1 | 20 | | | 36 | 125 | 1 | 10 | | | | | | 0.3 | | | | | | 3.5 | | TO-92-2 |
| BF196 | 40 | 30 | 4 | 0.4 | 0.03 | 0.1 | 40 | | | 26 | | 4 | 10 | | | | | | | | | | | | | | TO-92-2 |
| BF197 | 40 | 25 | 4 | 0.35 | 0.1 | 0.1 | 40 | | | 36 | | 7 | 10 | | | | | | 1100 | | | 7 | | | | | TO-92-2 |
| BF198 | 40 | 30 | 4 | 0.625 | | 0.1 | 40 | | | 26 | | 4 | 10 | | | | | | | | | | | | | | TO-92-2 |
| BF199 | 40 | 25 | 4 | 0.35 | 0.1 | 0.1 | 20 | | | 40 | | 7 | 10 | | | | | | 400 | | | 5 | | | | | TO-92-2 |
| BF224 | 45 | 30 | 4 | 0.35 | 0.05 | 0.1 | 20 | | | 30 | | 7 | 10 | 0.15 | | | 10 | | 300 | 600 | | 2 | | 2.5 | | | TO-92-2 |
| BF237 | 45 | 30 | 4 | 0.35 | 0.1 | 0.1 | 20 | | | | | | | 0.25 | | | 10 | | | | | | | | | | TO-92-2 |
| BF238 | 45 | 30 | 4 | 0.35 | 0.1 | 0.1 | 20 | | | | | | | 0.25 | | | 10 | | | | | | | | | | TO-92-2 |
| BF240 | 40 | 40 | 4 | 0.35 | 0.03 | 0.1 | 20 | | | 65 | 220 | 1 | 10 | | | | | | | | | | | | | | TO-92-2 |
| BF241 | 40 | 40 | 4 | 0.35 | 0.03 | 0.1 | 20 | | | 35 | 125 | 1 | 10 | | | | | | | | | | | | | | TO-92-2 |
| BF254 | 30 | 20 | 5 | 0.35 | 0.1 | 0.1 | 10 | | | 65 | 220 | 1 | 10 | | | | | | 260 | | | 1 | | | | | TO-92-2 |
| BF254-3 | 30 | 20 | 5 | 0.35 | 0.1 | 0.1 | 10 | | | 65 | 125 | 1 | 10 | | | | | | 260 | | | 1 | | | | | TO-92-2 |
| BF254-4 | 30 | 20 | 5 | 0.35 | 0.1 | 0.1 | 10 | | | 100 | 220 | 1 | 10 | | | | | | 260 | | | 1 | | | | | TO-92-2 |
| BF255 | 30 | 20 | 5 | 0.4 | 0.03 | 0.1 | 20 | | | 36 | 125 | 1 | 10 | | 0.65 | 0.74 | 1 | | 0.3 | | | 1 | | 3.5 | | | TO-92-2 |
| BF391 | 200 | 200 | 6 | 0.625 | 0.5 | 0.1 | 160 | | | 25 | | 1 | 10 | 2 | | 2 | 20 | | 50 | | | 10 | | | 2 | | TO-92 |
| BF392 | 250 | 250 | 6 | 0.625 | 0.5 | 0.1 | 200 | | | 25 | | 1 | 10 | 2 | | 2 | 20 | | 50 | | | 10 | | | 2 | | TO-92 |
| BF393 | 300 | 300 | 6 | 0.625 | 0.5 | 0.1 | 200 | | | 25 | | 1 | 10 | 2 | | 2 | 20 | | 50 | | | 1 | | | 2 | | TO-92 |
| BF420 | 300 | 300 | 5 | 0.8 | 0.5 | 0.01 | 200 | | | 50 | | 25 | 20 | 0.5 | | 2 | 20 | | 60 | | | 10 | | | 1.6 | | TO-92-1 |
| BF422 | 250 | 250 | 5 | 0.8 | 0.5 | 0.01 | 200 | | | 50 | | 25 | 20 | 0.5 | | 2 | 20 | | 60 | | | 10 | | | 1.6 | | TO-92-1 |
| BF494 | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 67 | 220 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF494A | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 200 | 500 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF494B | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 100 | 220 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF495 | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 35 | 125 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF495C | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 67 | 125 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF495D | 30 | 20 | 5 | 0.3 | 0.03 | 0.1 | 20 | | | 35 | 76 | 1 | 10 | | | | | 1.5 | 120 | | 260 | 1 | | | 1 | | TO-92-2 |
| BF496 | 30 | 20 | 3 | 0.3 | 0.02 | 0.5 | 20 | | | 15 | | 2 | 10 | | | | | | 550 | | | 2 | | | | | TO-92 |
| BF959 | 30 | 20 | 3 | 0.625 | 0.1 | 0.1 | 20 | | | 35 | | 5 | 10 | 1 | | 1 | 30 | | 700 | | | 20 | | | 0.7 | | TO-92-2 |
| BSY95A | 20 | 15 | 5 | 0.625 | 0.2 | 0.05 | 16 | | | 30 | 200 | 1 | 0.4 | 0.35 | 0.67 | 0.87 | 10 | | 6 | 200 | | 10 | | | | | TO-92 |

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| Maximum Ratings | | | | | | | | | | Electrical Characteristics (Ta=25°C, Unless Otherwise Specified) | | | | | | | | | | | | | | |
|-----------------|----------------------|----------------------|----------------------|--------------------|--------------------|-----------------------|---------------------|-----------------------|---------------------|--|---------------------|---------------------|--------------------------|--------------------------|---------------------|----------------------|----------------------|---------------------|-----------------------|---------------------|------------|----------------------|-----------------|---------|
| Type No. | V _{CBO} (V) | V _{CEO} (V) | V _{EBO} (V) | P _D (W) | I _C (A) | I _{CBO} (μA) | V _{CB} (V) | I _{CES} (μA) | V _{CE} (V) | h _{FE} | I _C (mA) | V _{CE} (V) | V _{CE(SAT)} (V) | V _{BE(SAT)} (V) | I _C (mA) | C _{ob} (pF) | f _T (MHz) | I _C (mA) | t _{off} (ns) | N _F (dB) | Freq (MHz) | C _{ie} (pF) | CDIL Case Style | |
| | Min | Min | Min | @Tc=25°C | Max | Max | Max | Max | Min | | | | | | | | | | | | | | | Max |
| CC2369 | 40 | 15 | 5 | 0.625 | 0.2 | 0.4 | 20 | | | 40 | 120 | 10 | 1 | 0.25 | 0.7 | 0.85 | 10 | 4 | 500 | | | | | TO-92-1 |
| CC337 | 50 | 45 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC337-16 | 50 | 45 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC337-25 | 50 | 45 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC337-40 | 50 | 45 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC338 | 25 | 25 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC338-16 | 30 | 25 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC338-25 | 30 | 25 | 5 | 0.625 | 0.8 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CC338-40 | 30 | 25 | 5 | 0.625 | 0.5 | 0.1 | 20 | | | 40 | 500 | 1 | 0.7 | | 500 | 5 | | 200 | 10 | | | | TO-92-1 | |
| CD50 | 500 | 400 | 5 | 0.625 | 0.3 | | | 0.5 | 400 | 30 | 150 | 100 | 10 | 1 | | 100 | | | | | | | TO-92-1 | |
| CD635 | 45 | 45 | 5 | 0.8 | 0.5 | 0.1 | 30 | | | 25 | 5 | 2 | 0.5 | | 500 | 7 | | 200 | 50 | | | | TO-92-4 | |
| CD637 | 60 | 60 | 5 | 0.8 | 0.5 | 0.1 | 30 | | | 25 | 5 | 2 | 0.5 | | 500 | 7 | | 200 | 50 | | | | TO-92-4 | |
| CD639 | 80 | 80 | 5 | 0.8 | 0.5 | 0.1 | 30 | | | 25 | 5 | 2 | 0.5 | | 500 | 7 | | 200 | 50 | | | | TO-92-4 | |
| CD8050B | 30 | 25 | 5 | 1.0 | 2 | 0.5 | 20 | | | 85 | 160 | 100 | 1 | 0.5 | 1.25 | 500 | 20 | 150 | 100 | | | | TO-92 | |
| CD8050C | 30 | 25 | 5 | 1.0 | 2 | 0.5 | 20 | | | 120 | 200 | 100 | 1 | 0.5 | 1.25 | 500 | 20 | 150 | 100 | | | | TO-92 | |
| CD8050D | 30 | 25 | 5 | 1.0 | 2 | 0.5 | 20 | | | 160 | 300 | 100 | 1 | 0.5 | 1.25 | 500 | 20 | 150 | 100 | | | | TO-92 | |
| CD9011 | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 29 | 273 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | | TO-92 | |
| CD9011D | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 29 | 44 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011E | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 40 | 59 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011F | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 54 | 80 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011G | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 72 | 108 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011H | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 97 | 146 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011I | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 132 | 198 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9011J | 18 | 18 | 3 | 0.625 | 0.1 | 0.05 | 18 | | | 182 | 273 | 1 | 5 | 0.2 | 0.85 | 10 | 3.5 | 250 | 10 | | 4 | 0.001 | TO-92 | |
| CD9013 | 40 | 30 | 5 | 0.625 | 0.5 | 0.1 | 25 | | | 64 | 275 | 50 | 1 | 0.2 | 1 | 150 | 10 | 200 | 50 | | 6 | 0.001 | TO-92 | |
| CD9013D | 40 | 30 | 5 | 0.625 | 0.5 | 0.1 | 25 | | | 64 | 91 | 50 | 1 | 0.2 | 1 | 150 | 10 | 200 | 50 | | 6 | 0.001 | TO-92 | |