## DIODES IN SOD-123

| | PD | VR(V) | IFM(mA) | IO(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | | VR(V) | | IF(mA) | | MARKING |
| 1N4148W | 350 | 75 | | 300 | 150 | 1 | 75 | 1.25 | 150 | 4 | T4 |
| 1N4448W | 350 | 75 | | 500 | 250 | 2.5 | 75 | 1.25 | 150 | 4 | T5 |
| 1N5711W* | 250 | 70 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | SA |
| 1N6263W* | 400 | 60 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | SB |
| B0520LW | 410 | 20 | 250 | | 500 | 250 | 20 | 0.385 | 0.5A | | SD |
| B0530W | 410 | 30 | 130 | | 500 | 130 | 30 | 0.43 | 0.5A | | SE |
| B0540W | 410 | 40 | 20 | | 500 | 20 | 40 | 0.62 | 1A | | SF |
| B5817W | 450 | 20 | 1000 | | 1000 | 1000 | 20 | 0.75 | 3A | | SJ |
| B5818W | 450 | 30 | 1000 | | 1000 | 1000 | 30 | 0.875 | 3A | | SK |
| B5819W | 450 | 40 | 1000 | | 1000 | 1000 | 40 | 0.9 | 3A | | SL |
| BAT42W | 200 | 30 | | 200 | | 0.5 | 25 | 0.65 | 50 | 5 | S7 |
| BAT43W | 200 | 30 | | 200 | | 0.5 | 25 | 0.45 | 15 | 5 | S8 |
| BAT46W* | 200 | 100 | | 150 | 75 | 5 | 75 | 1 | 250 | | S9 |
| BAV16W | 400 | 75 | | 300 | 150 | 1 | 75 | 1.25 | 150 | 4 | T6 |
| BAV19W | 250 | 100 | | 400 | 200 | 0.1 | 100 | 1.25 | 200 | 50 | A8 |
| BAV20W | 250 | 150 | | 400 | 200 | 0.1 | 150 | 1.25 | 200 | 50 | T2 |
| BAV21W | 250 | 200 | | 400 | 200 | 0.1 | 200 | 1.25 | 200 | 50 | T3 |
| SD101AW* | 400 | 60 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | S1 |
| SD101BW* | 400 | 50 | 10 | 15 | | 0.2 | 40 | 0.95 | 15 | 1 | S2 |
| SD101CW* | 400 | 40 | 10 | 15 | | 0.2 | 30 | 0.9 | 15 | 1 | S3 |
| SD103AW | 400 | 40 | 100 | 350 | | 5 | 30 | 0.6 | 200 | 10 | S4 |
| SD103BW | 400 | 30 | 100 | 350 | | 5 | 20 | 0.6 | 200 | 10 | S5 |
| SD103CW | 400 | 20 | 100 | 350 | | 5 | 10 | 0.6 | 200 | 10 | S6 |

## DIODES IN SOD-323

| | PD | VR(V) | IFM(mA) | IO(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | | VR(V) | | IF(mA) | | MARKING |
| 1N4148WS | 200 | 75 | | 300 | 150 | 1 | 75 | 1.25 | 150 | 4 | T4 |
| 1N4448WS | 200 | 75 | | 500 | 250 | 2.5 | 75 | 1.25 | 150 | 4 | T5 |
| 1N5711WS* | 200 | 70 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | SA |
| 1SS355 | 200 | 80 | | 225 | 100 | 0.1 | 80 | 1.2 | 100 | 4 | 4D |
| BAS40WS | 350 | 40 | 10 | 200 | | 0.2 | 30 | 1 | 40 | 5 | 43 |
| | | | | | | | | | | | |
| | PD | VR(V) | IFM(mA) | IO(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
| | (mW) | | IR(μA) | | | | VR(V) | | IF(mA) | | MARKING |
| 1N4148WS | 200 | 75 | | 300 | 150 | 1 | 75 | 1.25 | 150 | 4 | T4 |
| 1N4448WS | 200 | 75 | | 500 | 250 | 2.5 | 75 | 1.25 | 150 | 4 | T5 |
| 1N5711WS* | 200 | 70 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | SA |
| 1SS355 | 200 | 80 | | 225 | 100 | 0.1 | 80 | 1.2 | 100 | 4 | 4D |
| BAS40WS | 350 | 40 | 10 | 200 | | 0.2 | 30 | 1 | 40 | 5 | 43 |
| BAS70WS | 200 | 70 | 10 | 70 | | 0.1 | 50 | 1 | 15 | 5 | K73 |
| BAT42WS | 200 | 30 | | 200 | | 0.5 | 25 | 0.65 | 50 | 5 | S7 |
| BAT43WS | 200 | 30 | | 200 | | 0.5 | 25 | 0.45 | 15 | 5 | S8 |
| BAT54WS | 200 | 30 | 100 | 200 | 100 | 2 | 25 | 1 | 100 | 5 | L9 |
| BAT60B | 200 | 10 | 500 | 3000 | | 25 | 8 | 0.6 | 1000 | | W5 |
| BAV16WS | 200 | 75 | | 300 | 150 | 1 | 75 | 1.25 | 150 | 4 | T4 |
| BAV19WS | 200 | 100 | | 400 | 200 | 0.1 | 100 | 1.25 | 200 | 50 | A8 |
| BAV20WS | 200 | 150 | | 400 | 200 | 0.1 | 150 | 1.25 | 200 | 50 | T2 |
| BAV21WS | 200 | 200 | | 400 | 200 | 0.1 | 200 | 1.25 | 200 | 50 | T3 |
| SD101AWS* | 200 | 60 | 10 | 15 | | 0.2 | 50 | 1 | 15 | 1 | S1 |
| SD101BWS* | 200 | 50 | 10 | 15 | | 0.2 | 40 | 0.95 | 15 | 1 | S2 |
| SD101CWS* | 200 | 40 | 10 | 15 | | 0.2 | 30 | 0.9 | 15 | 1 | S3 |
| SD103AWS | 200 | 40 | 10 | 350 | | 5 | 30 | 0.6 | 200 | 10 | S4 |
| SD103BWS | 200 | 30 | 10 | 350 | | 5 | 20 | 0.6 | 200 | 10 | S5 |
| SD103CWS | 200 | 20 | 10 | 350 | | 5 | 10 | 0.6 | 200 | 10 | S6 |
| SD107WS | 250 | 30 | 100 | 100 | | 1 | 25 | 0.8 | 100 | | SG |
| | | | | | | | | | | | |

Datasheet Support

## DIODES IN SOD-523

| | PD | VR(V) | IO(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| 1SS400 | 150 | 90 | 100 | 100 | 0.1 | 80 | 1.2 | 100 | 4 | A |
| RB751S-40 | 150 | 40 | 100 | 30 | 0.5 | 30 | 0.37 | 1 | | 5 |

## DIODES IN SOT23

| | PD | VR(V) | IFM(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| 1SS181 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | A3 |
| 1SS184 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | B3 |
| 1SS187 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | D3 |
| 1SS190 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | E3 |
| 1SS193 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | F3 |
| 1SS196 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | G3 |
| 1SS226 | 150 | 80 | 100 | 100 | 0.5 | 80 | 1.2 | 100 | 4 | C3 |
| BAL99LT1 | 225 | 70 | 100 | 100 | 2.5 | 70 | 1.25 | 150 | 6 | JF |
| BAS116LT1 | 225 | 75 | 100 | 200 | 0.005 | 75 | 1.25 | 150 | 3000 | JV |
| BAS16LT1 | 225 | 75 | 100 | 200 | 1 | 75 | 1.25 | 150 | 6 | A6 |
| BAS19LT1 | 225 | 120 | 100 | 200 | 0.1 | 100 | 1.25 | 200 | 50 | JP |
| BAS21ALT1 | 225 | 250 | 100 | 200 | 1 | 200 | 1.25 | 200 | 50 | JS2 |
| BAS21CLT1 | 225 | 250 | 100 | 200 | 1 | 200 | 1.25 | 200 | 50 | JS3 |
| BAS21LT1 | 225 | 250 | 100 | 200 | 1 | 200 | 1.25 | 200 | 50 | JS |
| BAS21SLT1 | 225 | 250 | 100 | 200 | 1 | 200 | 1.25 | 200 | 50 | JS4 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| BAS40 | 200 | 40 | 100 | 200 | 0.2 | 30 | 1 | 40 | 5 | 43 |
| BAS40-04 | 200 | 40 | 100 | 200 | 0.2 | 30 | 1 | 40 | 5 | 44 |
| BAS40-05 | 200 | 40 | 100 | 200 | 0.2 | 30 | 1 | 40 | 5 | 45 |
| BAS40-06 | 200 | 40 | 100 | 200 | 0.2 | 30 | 1 | 40 | 5 | 46 |
| BAS70 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | 73 |
| BAS70-04 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | 74 |
| BAS70-05 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | 75 |
| BAS70-06 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | 76 |
| BAT54 | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL1 |
| BAT54A | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL2 |
| BAT54C | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL3 |
| BAT54S | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL4 |
| BAV199LT1 | 225 | 70 | 100 | 215 | 5nA | 70 | 1.25 | 150 | 3000 | JY |
| BAV70LT1 | 225 | 70 | 100 | 200 | 2.5 | 70 | 1.25 | 150 | 6 | A4 |
| BAV74LT1 | 225 | 50 | 5 | 200 | 0.1 | 50 | 1 | 100 | 4 | JA |
| BAV99LT1 | 225 | 70 | 100 | 215 | 2.5 | 70 | 1.25 | 150 | 6 | A7 |
| BAW56LT1 | 225 | 70 | 100 | 200 | 2.5 | 70 | 1.25 | 150 | 6 | A1 |
| CMPSH-3 | 350 | 30 | 100 | 100 | 0.5 | 25 | 1 | 100 | 5 | D95 |
| CMPSH-3A | 350 | 30 | 100 | 100 | 0.5 | 25 | 1 | 100 | 5 | DB1 |
| CMPSH-3C | 350 | 30 | 100 | 100 | 0.5 | 25 | 1 | 100 | 5 | DB2 |
| CMPSH-3S | 350 | 30 | 100 | 100 | 0.5 | 25 | 1 | 100 | 5 | DA5 |
| MC2836 | 150 | 50 | 100 | 300 | 0.1 | 50 | 1.2 | 100 | 4 | A41 |
| MC2838 | 150 | 50 | 100 | 300 | 0.1 | 50 | 1.2 | 100 | 3 | A61 |
| | PD | VR(V) | IFM(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| MMBD1501A | 350 | 200 | 5 | 600 | 0.01 | 180 | 1.5 | 300 | | A11 |
| MMBD1503A | 350 | 200 | 5 | 600 | 0.01 | 180 | 1.5 | 300 | | A13 |
| MMBD1504A | 350 | 200 | 5 | 600 | 0.01 | 180 | 1.5 | 300 | | A14 |
| MMBD1505A | 350 | 200 | 5 | 600 | 0.01 | 180 | 1.5 | 300 | | A15 |
| MMBD4148 | 350 | 75 | 100 | 300 | 2.5 | 75 | 1.25 | 150 | 4 | KA2 |
| MMBD4148A | 350 | 100 | 100 | 200 | 5 | 75 | 1 | 10 | 4 | 5H |
| MMBD4148C | 350 | 100 | 100 | 200 | 5 | 75 | 1 | 10 | 4 | D6 |
| MMBD4148C | 350 | 100 | 100 | 200 | 5 | 75 | 1 | 10 | 4 | KD5 |
| MMBD4148S | 350 | 100 | 100 | 200 | 5 | 75 | 1 | 10 | 4 | D4 |
| MMBD7000 | 225 | 100 | 100 | 200 | 3 | 100 | 1.1 | 100 | 4 | M5C |
| MMBD914LT | 225 | 75 | 100 | 200 | 2.5 | 75 | 1.25 | 150 | 4 | 5D |

## DIODES IN SOT-23-3L

| | PD | VR(V) | IFM(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| 1N5817 | 300 | 20 | 1000 | 1000 | 1000 | 20 | 0.75 | 3000 | | SJ |
| 1N5819 | 300 | 40 | 1000 | 1000 | 1000 | 40 | 0.9 | 3000 | | SL |
| CMSD2004S | 250 | 300 | 100 | 225 | 0.1 | 240 | 1 | 100 | 50 | B6D |

## DIODES IN SOT-323

| | PD | VR(V) | IFM(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| BAS19W | 200 | 100 | 100 | 200 | 0.1 | 100 | 1.25 | 200 | 50 | KA8 |
| BAS20W | 200 | 150 | 100 | 200 | 0.1 | 150 | 1.25 | 200 | 50 | KT2 |
| BAS21W | 200 | 200 | 100 | 200 | 0.1 | 200 | 1.25 | 200 | 50 | KT3 |
| BAS40W* | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 43 |
| BAS40W-04 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 44 |
| BAS40W-05 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 45 |
| BAS40W-06 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 46 |
| BAS70W | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K73 |
| BAS70W-04 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K74 |


## DIODES IN SOT-323

| | PD | VR(V) | IFM(mA) | IR(μA) | VF(V) | Trr(ns) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | | IR(μA) | | | VR(V) | | IF(mA) | | MARKING |
| BAS19W | 200 | 100 | 100 | 200 | 0.1 | 100 | 1.25 | 200 | 50 | KA8 |
| BAS20W | 200 | 150 | 100 | 200 | 0.1 | 150 | 1.25 | 200 | 50 | KT2 |
| BAS21W | 200 | 200 | 100 | 200 | 0.1 | 200 | 1.25 | 200 | 50 | KT3 |
| BAS40W* | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 43 |
| BAS40W-04 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 44 |
| BAS40W-05 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 45 |
| BAS40W-06 | 200 | 40 | 10 | 200 | 0.2 | 30 | 1 | 40 | 5 | 46 |
| BAS70W | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K73 |
| BAS70W-04 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K74 |

| BAS70W-05 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K75 |
|---|---|---|---|---|---|---|---|---|---|---|
| BAS70W-06 | 200 | 70 | 10 | 70 | 0.1 | 50 | 1 | 15 | 5 | K76 |
| BAT54AW* | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL6 |
| BAT54CW | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL7 |
| BAT54SW* | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL8 |
| BAT54W* | 200 | 30 | 100 | 200 | 2 | 25 | 1 | 100 | 5 | KL5 |
| BAV70W | 200 | 75 | 100 | 150 | 2.5 | 75 | 1.25 | 150 | 4 | KJA |
| BAV99W | 200 | 75 | 100 | 150 | 2.5 | 75 | 1.25 | 150 | 4 | KJG |
| BAW56W | 200 | 75 | 100 | 150 | 2.5 | 75 | 1.25 | 150 | 4 | KJC |
| CMSD2004S | 250 | 240 | 100 | 225 | 0.1 | 240 | 1 | 100 | 50 | B6D |
| DA204U | 200 | 20 | 100 | 100 | 0.1 | 15 | 1 | 10 | | K |
| DAN202U | 200 | 80 | 100 | 100 | 0.1 | 70 | 1.2 | 100 | 4 | N |
| DAP202U | 200 | 80 | 100 | 100 | 0.1 | 70 | 1.2 | 100 | 4 | P |
| MMBD4148W | 200 | 75 | 100 | 150 | 1 | 75 | 1.25 | 150 | 4 | A2,KA2 |
| MMBD4448W | 200 | 75 | 10 | 250 | 2.5 | 75 | 1.25 | 150 | 4 | KA3 |
| RB706F-40 | 200 | 40 | 100 | 30 | 1 | 10 | 0.37 | 1 | | 3J |
| RB715F | 200 | 40 | 100 | 30 | 1 | 10 | 0.37 | 1 | | 3D |
| RB717F | 200 | 40 | 100 | 30 | 1 | 10 | 0.37 | 1 | | 3E |

## SCHOTTKY BARRIER RECTIFIER IN TO-220

| | PD | | VR(V) | IFM(A) | IO(A) | IR(mA) | VF(V) | CJ(PF) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (W) | POLARITY | | IR(mA) | | | | VR(V) | | IF(A) | |
| MBR1030CT | 2 | ACA | 30 | | 125 | 10 | 0.1 | 30 | 0.7 | 5 | 150 |
| MBR1035CT | 2 | ACA | 35 | | 125 | 10 | 0.1 | 35 | 0.7 | 5 | 150 |
| MBR1040CT | 2 | ACA | 40 | | 125 | 10 | 0.1 | 40 | 0.7 | 5 | 150 |
| MBR1045CT | 2 | ACA | 45 | | 125 | 10 | 0.1 | 45 | 0.7 | 5 | 150 |
| MBR1050CT | 2 | ACA | 50 | | 125 | 10 | 0.1 | 50 | 0.8 | 5 | 150 |
| MBR1060CT | 2 | ACA | 60 | | 125 | 10 | 0.1 | 60 | 0.8 | 5 | 150 |
| MBR1530CT | 2 | ACA | 30 | | 150 | 15 | 0.1 | 30 | 0.7 | 7.5 | 300 |
| MBR1535CT | 2 | ACA | 35 | | 150 | 15 | 0.1 | 35 | 0.7 | 7.5 | 300 |
| MBR1540CT | 2 | ACA | 40 | | 150 | 15 | 0.1 | 40 | 0.7 | 7.5 | 300 |
| MBR1545CT | 2 | ACA | 45 | | 150 | 15 | 0.1 | 45 | 0.7 | 7.5 | 300 |
| MBR1550CT | 2 | ACA | 50 | | 150 | 15 | 1 | 50 | 0.75 | 7.5 | 300 |
| MBR1560CT | 2 | ACA | 60 | | 150 | 15 | 1 | 60 | 0.75 | 7.5 | 300 |
| MBR2030CT | 2 | ACA | 30 | | 150 | 20 | 0.1 | 30 | 0.7 | 10 | 650 |
| MBR2035CT | 2 | ACA | 35 | | 150 | 20 | 0.1 | 35 | 0.7 | 10 | 650 |
| MBR2040CT | 2 | ACA | 40 | | 150 | 20 | 0.1 | 40 | 0.7 | 10 | 650 |
| MBR2045CT | 2 | ACA | 45 | | 150 | 20 | 0.1 | 45 | 0.7 | 10 | 650 |
| MBR2050CT | 2 | ACA | 50 | | 150 | 20 | 0.1 | 50 | 0.8 | 10 | 650 |
| MBR2060CT | 2 | ACA | 60 | | 150 | 20 | 0.1 | 60 | 0.8 | 10 | 650 |
| MBR2070CT | 2 | ACA | 70 | | 150 | 20 | 0.15 | 70 | 0.85 | 10 | 1000 |
| MBR2080CT | 2 | ACA | 80 | | 150 | 20 | 0.15 | 80 | 0.85 | 10 | 1000 |
| MBR2090CT | 2 | ACA | 90 | | 150 | 20 | 0.15 | 90 | 0.85 | 10 | 1000 |
| MBR20100C | 2 | ACA | 100 | | 150 | 20 | 0.15 | 100 | 0.85 | 10 | 1000 |
| MBR20150C | 2 | ACA | 150 | | 150 | 20 | 0.1 | 150 | 0.9 | 10 | |
| MBR20200C | 2 | ACA | 200 | | 150 | 20 | 1 | 200 | 0.9 | 10 | |
| SBL2030CT | 2 | ACA | 30 | 0.5 | 150 | 20 | 0.45 | 30 | 0.55 | 10 | |
| SBL2035CT | 2 | ACA | 35 | 0.5 | 150 | 20 | 0.45 | 35 | 0.55 | 10 | |
| SBL2040CT | 2 | ACA | 40 | 0.5 | 150 | 20 | 0.45 | 40 | 0.55 | 10 | |
| SBL2050CT | 2 | ACA | 50 | 0.5 | 150 | 20 | 0.45 | 50 | 0.7 | 10 | |
| SBL2060CT | 2 | ACA | 60 | 0.5 | 150 | 20 | 0.45 | 60 | 0.7 | 10 | |

## TRANSISTOR IN SOT-23

| | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARKING | |
| 2SA1037 | PNP | 200 | 150 | 60 | 50 | 6 | 120 | 560 | 6 | 1 | 0.5 | 50 | 5 | 120 | FQ,FR,FS | |
| 2SA1179 | PNP | 200 | 150 | 55 | 50 | 5 | 200 | 400 | 6 | 1 | 0.5 | 50 | 5 | 180+ | M | |
| 2SA1235A | PNP | 200 | 200 | 60 | 50 | 6 | 150 | 600 | 6 | 1 | 0.3 | 100 | 10 | 180 | ME,MF | |
| 2SA812 | PNP | 200 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 180 | M4,M5,M6,M7 | |
| 2SB709A | PNP | 200 | 200 | 45 | 45 | 7 | 160 | 460 | 10 | 2 | 0.5 | 100 | 10 | 60 | BQ,BR,BS | |
| 2SC1623 | NPN | 200 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 250 | L4,L5,L6,L7 | |
| 2SC2712 | NPN | 150 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 | LO,LY,LG,LL | |
| 2SC3052 | NPN | 150 | 200 | 50 | 50 | 6 | 150 | 800 | 6 | 1 | 0.3 | 100 | 10 | 180 | LE,LF,LG | |
| 2SC5344 | NPN | 200 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.5 | 500 | 50 | 80 | FAO,FAY | |
| A1015LT1 | PNP | 200 | 150 | 50 | 50 | 5 | 130 | 400 | 6 | 2 | 0.3 | 100 | 10 | 80 | BA | |
| A733LT1 | PNP | 200 | 150 | 60 | 50 | 5 | 120 | 475 | 6 | 1 | 0.3 | 100 | 10 | 50 | CS | |
| BC807 | PNP | 300 | 500 | 50 | 45 | 5 | 100 | 600 | 1 | 100 | 0.7 | 500 | 50 | 100 | 5A1,,5B,5C | |
| BC808 | PNP | 200 | 500 | 30 | 25 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 100 | 6A,6B,6C | |
| BC817 | NPN | 200 | 500 | 30 | 25 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 100 | 6E,6F,6G | |
| BC846A,B,L | NPN | 225 | 100 | 80 | 65 | 6 | 110 | 450 | 5 | 2 | 0.5 | 100 | 5 | 100 | 1A,1B | |
| BC847A,B,C | NPN | 225 | 100 | 50 | 45 | 6 | 110 | 800 | 5 | 2 | 0.5 | 100 | 5 | 100 | 1E,1F,1G | |
| BC848A,B,C | NPN | 225 | 100 | 30 | 30 | 6 | 110 | 800 | 5 | 2 | 0.5 | 100 | 5 | 100 | 1J,1K,1L | |
| BC849* | NPN | 310 | 100 | 30 | 30 | 5 | 110 | 800 | 5 | 2 | 0.6 | 100 | 5 | 200 | 8DA,8DB,8DC | |
| BC850* | NPN | 310 | 100 | 50 | 45 | 5 | 110 | 800 | 5 | 2 | 0.6 | 100 | 5 | 200 | 8EA,8EB,8EC | |
| BC856A,BL1 | PNP | 225 | 100 | 80 | 65 | 5 | 125 | 475 | 5 | 2 | 0.5 | 100 | 5 | 100 | 3A,3B | |
| BC857A,B,C | PNP | 225 | 100 | 50 | 45 | 5 | 125 | 800 | 5 | 2 | 0.5 | 100 | 5 | 100 | 3E,3F,3G | |
| BC858A,B,C | PNP | 225 | 100 | 30 | 30 | 5 | 125 | 800 | 5 | 2 | 0.5 | 100 | 5 | 100 | 3J,3K,3L | |
| BCW30LT1 | PNP | 225 | 100 | 32 | 32 | 5 | 215 | 500 | 5 | 2 | 0.3 | 10 | 0.5 | | C2X | |
| BCW60C | NPN | 250 | 100 | 32 | 32 | 5 | 250 | 460 | 5 | 2 | 0.55 | 50 | 1.25 | 100 | AC | |
| BCW61B | PNP | 250 | 200 | 32 | 32 | 5 | 180 | 310 | 5 | 2 | 0.55 | 50 | 1.25 | 100 | BB | |
| BCW61C | PNP | 250 | 100 | 32 | 32 | 5 | 250 | 460 | 5 | 2 | 1.05 | 50 | 1.25 | 100 | BC | |
| BCW66H | NPN | 330 | 800 | 75 | 45 | 5 | 250 | 630 | 1 | 100 | 0.7 | 500 | 50 | 100 | EH | |
| BCW68 | PNP | 330 | 800 | 60 | 45 | 5 | 160 | 630 | 2 | 100 | 1 | 500 | 50 | 100 | DG,DH | |
| BCX19LT1 | NPN | 225 | 500 | 50 | 45 | 5 | 100 | 600 | 1 | 100 | 0.62 | 500 | 50 | | U1 | |
| BCX70J | NPN | 250 | 200 | 45 | 45 | 5 | 250 | 460 | 5 | 2 | 0.55 | 50 | 1.25 | 100 | AJ | |
| BCX70K | NPN | 250 | 200 | 45 | 45 | 5 | 380 | 630 | 5 | 2 | 0.55 | 50 | 1.25 | 100 | AK | |
| BFS20 | NPN | 250 | 25 | 30 | 20 | 4 | 40 | 120 | 10 | 7 | 0.3 | 10 | 1 | 275 | G11 | |
| C1815LT1 | NPN | 200 | 150 | 60 | 50 | 5 | 130 | 400 | 6 | 2 | 0.25 | 100 | 10 | 80 | HF | |
| C945LT1 | NPN | 200 | 150 | 60 | 50 | 5 | 130 | 400 | 6 | 1 | 0.3 | 100 | 10 | 150 | CR | |
| FMMT4124 | NPN | 330 | 200 | 30 | 25 | 5 | 120 | 360 | 1 | 2 | 0.3 | 50 | 5 | 300 | ZC | |
| FMMT458 | NPN | 500 | 1000 | 400 | 400 | 5 | 100 | 300 | 10 | 50 | 0.5 | 50 | 6 | 50 | 458 | |
| KSA1182 | PNP | 150 | 500 | 35 | 30 | 5 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 150 | F1O,F1Y | |
| KTA1298 | PNP | 200 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.4 | 500 | 20 | 80 | IO,IY | |
| KTA1504 | PNP | 150 | 150 | 50 | 50 | 5 | 70 | 400 | 6 | 2 | 0.3 | 100 | 10 | 80 | ASO,ASY,ASG | |

| | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARKING | |
| KTA1505 | PNP | 150 | 500 | 35 | 30 | 5 | 70 | 400 | 1 | 100 | 0.25 | 100 | 10 | 150 | AZO,AZY,AZG | |
| KTC3265 | NPN | 200 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.5 | 500 | 20 | 120 | EO,EY | |
| KTC3875 | NPN | 150 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 | ALO,ALY,ALG,ALL | |
| KTC3880S | NPN | 150 | 20 | 40 | 30 | 4 | 40 | 200 | 6 | 1 | | | | 500 | AQR,AQO,AQY | |
| KTC4075 | NPN | 100 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 | LO1,LY1,LG1,LL1 | |
| M28S | NPN | 200 | 1000 | 40 | 20 | 6 | 300 | 1000 | 1 | 100 | 0.55 | 600 | 20 | 100 | 28S | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M8050** | NPN | 200 | 1000 | 40 | 25 | 6 | 80 | 300 | 1 | 100 | 0.5 | 800 | 80 | 150 | Y11 | |
| **M8550** | PNP | 200 | 1000 | 40 | 25 | 6 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 150 | Y21 | |
| **MMBT2222A** | NPN | 300 | 600 | 75 | 40 | 6 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 300 | 1P | |
| **MMBT2222L** | NPN | 300 | 600 | 60 | 30 | 5 | 100 | 300 | 10 | 150 | 1 | 500 | 50 | 250 | M1B | |
| **MMBT2907A** | PNP | 300 | 600 | 60 | 60 | 5 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 200 | 2F | |
| **MMBT2907L** | PNP | 300 | 600 | 60 | 40 | 5 | 100 | 300 | 10 | 150 | 1 | 500 | 50 | 200 | M2B | |
| **MMBT3904L** | NPN | 200 | 200 | 60 | 40 | 6 | 100 | 300 | 10 | 1 | 0.3 | 50 | 5 | 250 | 1AM | |
| **MMBT3906L** | PNP | 200 | 200 | 40 | 40 | 5 | 100 | 300 | 10 | 1 | 0.3 | 50 | 5 | 250 | 2A | |
| **MMBT4401L** | NPN | 300 | 600 | 60 | 40 | 6 | 100 | 300 | 1 | 150 | 0.4 | 150 | 15 | 250 | 2X | |
| **MMBT4403L** | PNP | 300 | 600 | 40 | 40 | 5 | 100 | 300 | 2 | 150 | 0.4 | 150 | 15 | 200 | 2T | |
| **MMBT5401L** | PNP | 300 | 600 | 160 | 150 | 5 | 100 | 200 | 5 | 10 | 0.5 | 50 | 5 | 100 | 2L | |
| **MMBT5550L** | NPN | 225 | 600 | 160 | 140 | 6 | 60 | 250 | 5 | 10 | 0.25 | 50 | 5 | 100 | M1F | |
| **MMBT5551L** | NPN | 300 | 600 | 180 | 160 | 6 | 80 | 250 | 5 | 10 | 0.5 | 50 | 5 | 80 | G1 | |
| **MMBTA06L** | NPN | 300 | 500 | 80 | 80 | 4 | 100 | 200 | 1 | 100 | 0.25 | 100 | 10 | 100 | 1GM | |
| **MMBTA13** | NPN | 300 | 300 | 30 | 30 | 10 | 10000 | | 5 | 100 | 1.5 | 100 | 0.1 | 125 | K2D | |
| **MMBTA14** | NPN | 300 | 300 | 30 | 30 | 10 | 20000 | | 5 | 100 | 1.5 | 100 | 0.1 | 125 | K3D | |
| **MMBTA42L** | NPN | 300 | 300 | 300 | 300 | 5 | 100 | 200 | 10 | 10 | 0.2 | 20 | 2 | 50 | 1D | |
| **MMBTA43** | NPN | 225 | 500 | 200 | 200 | 6 | 40 | | 10 | 30 | 0.5 | 20 | 2 | | M1E | |
| **MMBTA55L** | PNP | 225 | 500 | 60 | 60 | 4 | 100 | | 1 | 10 | 0.25 | 100 | 10 | 50 | 2H | |
| **MMBTA56L** | PNP | 225 | 500 | 80 | 80 | 4 | 100 | | 1 | 10 | 0.25 | 100 | 10 | 50 | 2GM | |
| **MMBTA92L** | PNP | 300 | 300 | 300 | 300 | 5 | 100 | 200 | 10 | 10 | 0.2 | 20 | 2 | 50 | 2D | |
| **MMBTH10L** | NPN | 225 | 50 | 30 | 25 | 3 | 60 | | 10 | 4 | 0.5 | 4 | 0.4 | 650 | 3EM | |
| **S8050LT1** | NPN | 300 | 500 | 40 | 25 | 5 | 120 | 350 | 1 | 50 | 0.6 | 500 | 50 | 150 | J3Y | |
| **S8550LT1** | PNP | 300 | 500 | 40 | 25 | 5 | 120 | 350 | 1 | 50 | 0.6 | 500 | 50 | 150 | 2TY | |
| **S9011LT1** | NPN | 200 | 30 | 30 | 20 | 4 | 70 | 200 | 5 | 1 | 0.3 | 10 | 1 | 150 | 1T | |
| **S9012LT1** | PNP | 300 | 500 | 40 | 25 | 5 | 120 | 350 | 1 | 50 | 0.6 | 500 | 50 | 150 | 2T1 | |
| **S9013LT1** | NPN | 300 | 500 | 40 | 25 | 5 | 120 | 350 | 1 | 50 | 0.6 | 500 | 50 | 150 | J3 | |
| **S9014LT1** | NPN | 200 | 100 | 50 | 45 | 5 | 200 | 1000 | 5 | 1 | 0.3 | 100 | 5 | 150 | J6 | |
| **S9015LT1** | PNP | 200 | 100 | 50 | 45 | 5 | 200 | 1000 | 5 | 1 | 0.3 | 100 | 10 | 150 | M6 | |
| **S9016LT1** | NPN | 200 | 25 | 30 | 20 | 5 | 70 | 200 | 5 | 1 | 0.3 | 10 | 1 | 300 | Y6 | |
| **S9018LT1** | NPN | 200 | 50 | 25 | 18 | 4 | 70 | 190 | 5 | 1 | 0.5 | 10 | 1 | 600 | J8 | |
| **SS8050LT1** | NPN | 300 | 1500 | 40 | 25 | 5 | 120 | 350 | 1 | 100 | 0.5 | 800 | 80 | 100 | Y1 | |
| **SS8550LT1** | PNP | 300 | 1500 | 40 | 25 | 5 | 120 | 350 | 1 | 100 | 0.5 | 800 | 80 | 100 | Y2 | |

## TRANSISTOR IN SOT-223

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| **BCP54** | NPN | BCE | 1330 | 1000 | 45 | 45 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 130 |
| **TIP31** | NPN | BCE | 1300 | 3000 | 40 | 40 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| **TIP31A** | NPN | BCE | 1300 | 3000 | 60 | 60 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| **TIP31B** | NPN | BCE | 1300 | 3000 | 80 | 80 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| **TIP31C** | NPN | BCE | 1300 | 3000 | 100 | 100 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| | | | | | | | | | | | | | | | |

## TRANSISTOR SOT-23-3L

| | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARKING | | |
| **2SA1036K** | PNP | 200 | 500 | 40 | 32 | 5 | 82 | 390 | 3 | 10 | 0.4 | 100 | 10 | 200+ | HP,HQ,HR | | |
| **2SA1037** | PNP | 200 | 150 | 60 | 50 | 6 | 120 | 560 | 6 | 1 | 0.5 | 50 | 5 | 120 | FQ,FR,FS | | |
| **2SA1162** | PNP | 150 | 150 | 50 | 50 | 5 | 70 | 400 | 6 | 2 | 0.3 | 100 | 10 | 80 | SO,SY,SG | | |
| **2SA1235A** | PNP | 200 | 200 | 60 | 50 | 6 | 150 | 500 | 6 | 1 | 0.3 | 100 | 10 | 180 | MoE,MoF | | |
| **2SA1313** | PNP | 200 | 500 | 50 | 50 | 5 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 200+ | ACO,ACY | | |
| **2SA1464** | PNP | 200 | 500 | 60 | 40 | 5 | 75 | 300 | 2 | 150 | 0.75 | 500 | 50 | 150 | Y12,Y13,Y14 | | |
| **2SA812** | PNP | 200 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 180 | M4,M5,M6,M7 | | |
| **2SB1197K** | PNP | 200 | 800 | 40 | 32 | 5 | 82 | 390 | 3 | 100 | 0.5 | 500 | 50 | 50 | AHP,AHQ,AHR | | |
| **2SB624** | PNP | 200 | 700 | 30 | 25 | 5 | 110 | 400 | 1 | 100 | 0.6 | 700 | 70 | 140 | BV1,BV2,BV3,BV4,BV5 | | |
| **2SC1623** | NPN | 200 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 250+ | L4,L5,L6,L7 | | |
| **2SC2223** | NPN | 150 | 20 | 30 | 20 | 4 | 40 | 180 | 6 | 1 | 0.3 | 10 | 1 | 400 | F12,F13,F14 | | |
| **2SC2411K** | NPN | 200 | 500 | 40 | 32 | 5 | 82 | 390 | 3 | 100 | 0.4 | 500 | 50 | 250+ | CP,CQ,CR | | |
| **2SC2412K** | NPN | 200 | 150 | 60 | 50 | 7 | 120 | 560 | 6 | 1 | 0.4 | 50 | 5 | 150 | BQ,BR,BS | | |
| **2SC2734*** | NPN | 150 | 50 | 20 | 11 | 3 | 20 | 200 | 10 | 5 | 0.7 | 10 | 5 | 1400 | GC | | |
| **2SC2735*** | NPN | 150 | 50 | 30 | 20 | 3 | 40 | | 10 | 10 | 1 | 20 | 4 | 600 | JC | | |
| **2SC3052** | NPN | 150 | 200 | 50 | 50 | 6 | 150 | 800 | 6 | 1 | 0.3 | 100 | 10 | 180 | LE,LF,LG | | |
| **2SC3356*** | NPN | 200 | 100 | 20 | 12 | 3 | 50 | 300 | 10 | 20 | | | | 6000 | R23,R24,R25 | | |
| **2SC3739** | NPN | 200 | 500 | 60 | 40 | 5 | 75 | 300 | 1 | 150 | 0.75 | 500 | 50 | 200 | B12,B13,B14 | | |
| **2SC3838K*** | NPN | 150 | 50 | 20 | 11 | 3 | 27 | 270 | 10 | 5 | 0.5 | 10 | 5 | 1400 | AD | | |
| **2SD1781K** | NPN | 200 | 800 | 40 | 32 | 5 | 120 | 390 | 3 | 100 | 0.4 | 500 | 50 | 150+ | AFQ,AFR | | |
| **2SD596** | NPN | 200 | 700 | 30 | 25 | 5 | 110 | 400 | 1 | 100 | 0.6 | 700 | 70 | 140 | DV1,DV2,DV3,DV4,DV5 | | |
| **MMBTA44** | NPN | 350 | 300 | 500 | 400 | 6 | 50 | 240 | 10 | 10 | 0.75 | 50 | 5 | 50 | 3D | | |

## TRANSISTOR IN SOT-323

| | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARKING | |
| **2SA1576A** | PNP | 200 | 150 | 60 | 50 | 6 | 120 | 560 | 6 | 1 | 0.5 | 50 | 5 | 100+ | FQ,FR,FS | |
| **2SA1577** | PNP | 200 | 500 | 40 | 32 | 5 | 82 | 390 | 3 | 10 | 0.4 | 100 | 10 | 200+ | HP,HQ,HR | |
| **2SB1218A** | PNP | 150 | 100 | 45 | 45 | 7 | 160 | 460 | 10 | 2 | 0.5 | 100 | 10 | 80+ | BQ1,BR1,BS1 | |
| **2SC4081** | NPN | 200 | 150 | 60 | 50 | 7 | 120 | 560 | 6 | 1 | 0.4 | 50 | 5 | 180+ | BQ,BR,BS | |
| **2SC4097** | NPN | 200 | 500 | 40 | 32 | 5 | 82 | 390 | 3 | 10 | 0.4 | 100 | 10 | 250+ | CP,CQ,CR | |
| **2SC4177** | NPN | 150 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 250 | L4,L5,L6,L7 | |
| **KTC4076** | NPN | 100 | 500 | 35 | 30 | 5 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 300+ | WO,WY | |
| **MMST2222A** | NPN | 200 | 600 | 75 | 40 | 6 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 300 | K3P | |
| **MMST2907A** | PNP | 200 | 600 | 60 | 60 | 5 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 200 | K3F | |
| **MMST3904** | NPN | 200 | 200 | 60 | 40 | 5 | 100 | 300 | 1 | 10 | 0.3 | 50 | 5 | 250 | K2N | |
| **MMST3906** | PNP | 200 | 200 | 40 | 40 | 5 | 100 | 300 | 1 | 10 | 0.3 | 50 | 5 | 300 | K5N | |
| **MMST4401** | NPN | 200 | 600 | 60 | 40 | 6 | 100 | 300 | 1 | 150 | 0.75 | 500 | 50 | 250 | K3X | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MMST4403 | PNP | 200 | 600 | 40 | 40 | 5 | 100 | 300 | 2 | 150 | 0.4 | 150 | 15 | 200 | K3T | |
| MMST5401 | PNP | 200 | 600 | 160 | 150 | 5 | 60 | 240 | 5 | 10 | 0.5 | 50 | 5 | 100 | K4M | |
| MMST5551 | NPN | 200 | 600 | 180 | 160 | 6 | 80 | 250 | 5 | 10 | 0.5 | 50 | 5 | 100 | K4N | |
| MMSTA42 | NPN | 200 | 300 | 310 | 305 | 5 | 100 | 200 | 10 | 10 | 0.2 | 20 | 2 | 50 | K3M | |
| MMSTA92 | PNP | 200 | 300 | 310 | 305 | 5 | 100 | 200 | 10 | 10 | 0.2 | 20 | 2 | 50 | K3R | |
| SS8050LT1 | NPN | 200 | 1500 | 40 | 25 | 5 | 120 | 350 | 1 | 100 | 0.5 | 800 | 80 | 100 | Y1 | |
| SS8550LT1 | PNP | 200 | 1500 | 40 | 25 | 5 | 120 | 350 | 1 | 100 | 0.5 | 800 | 80 | 100 | Y2 | |

## TRANSISTOR SOT-363

| | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARKING |
| BC847BS | NPN | 300 | 100 | 50 | 45 | 5 | 200 | 450 | 5 | 2 | 0.1 | 10 | 0.5 | 100 | 1Ft |
| BC847PN | NPN | 200 | 100 | 50 | 45 | 6 | 200 | 450 | 5 | 2 | 0.6 | 100 | 5 | 100 | 7P |
| | PNP | 200 | 100 | 50 | 45 | 5 | 220 | 475 | 5 | 2 | 0.65 | 100 | 5 | 100 | |
| BC847S | NPN | 300 | 100 | 50 | 45 | 6 | 110 | 630 | 5 | 2 | 0.25 | 10 | 0.5 | 200+ | 1C |
| BC857S | PNP | 300 | 100 | 50 | 45 | 5 | 125 | 630 | 5 | 2 | 0.3 | 10 | 0.5 | 200+ | 3CS |
| MMDT2227 | NPN | 200 | 600 | 75 | 40 | 6 | 100 | 300 | 10 | 150 | 1 | 500 | 50 | 300 | K27 |
| | PNP | 200 | 600 | 60 | 60 | 5 | 100 | 300 | 10 | 150 | 1.6 | 500 | 50 | 200 | |
| MMDT5401 | NPN | 200 | 200 | 160 | 150 | 5 | 60 | 240 | 5 | 10 | 0.5 | 50 | 5 | 100 | K4M |
| MMDT5451 | NPN | 200 | 200 | 180 | 160 | 6 | 80 | 250 | 5 | 10 | 0.2 | 50 | 5 | 100 | KNM |
| | PNP | 200 | 200 | 160 | 150 | 5 | 60 | 240 | 5 | 10 | 0.5 | 50 | 5 | 100 | |
| MMDT5551 | NPN | 200 | 200 | 180 | 160 | 6 | 80 | 250 | 5 | 10 | 0.15 | 10 | 1 | 100 | K4N |
| UMZ1N | NPN | 150 | 150 | 60 | 50 | 7 | 120 | 560 | 6 | 1 | 0.4 | 50 | 5 | 140+ | Z1 |
| | PNP | 150 | 150 | 60 | 50 | 7 | 120 | 560 | 6 | 1 | 0.5 | 50 | 5 | 140+ | |

## TRANSISTOR IN SOT-89

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) | MARK |
| 2SA1201 | PNP | BCE | 500 | 800 | 120 | 120 | 5 | 80 | 240 | 5 | 100 | 1 | 500 | 50 | 120+ | DO,DY |
| 2SA1203 | PNP | BCE | 500 | 1500 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 120+ | HO1,HY1 |
| 2SA1213 | PNP | BCE | 500 | 2000 | 50 | 50 | 5 | 70 | 240 | 2 | 500 | 0.5 | 1000 | 50 | 100 | NO,NY |
| 2SA1740 | PNP | BCE | 500 | 200 | 400 | 400 | 5 | 60 | 200 | 10 | 50 | 0.8 | 50 | 5 | 70+ | AK |
| 2SB1119 | PNP | BCE | 500 | 1000 | 25 | 25 | 5 | 100 | 560 | 2 | 50 | 0.7 | 500 | 50 | 180+ | BB |
| 2SB1132 | PNP | BCE | 500 | 1000 | 40 | 32 | 5 | 82 | 390 | 3 | 100 | 0.5 | 500 | 50 | 150+ | BAP,BAQ,BAR |
| 2SB1188 | PNP | BCE | 500 | 2000 | 40 | 32 | 5 | 82 | 390 | 3 | 500 | 0.8 | 2000 | 200 | 80 | BCP,BCQ,BCR |
| 2SB1260 | PNP | BCE | 500 | 1000 | 80 | 80 | 5 | 82 | 390 | 3 | 100 | 0.4 | 500 | 50 | 80 | ZL |
| 2SB1308 | PNP | BCE | 500 | 3000 | 30 | 20 | 6 | 82 | 390 | 2 | 500 | 0.45 | 1500 | 150 | 50 | BFP,BFQ,BFR |
| 2SB766 | PNP | BCE | 500 | 1000 | 30 | 25 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 200+ | AQ,AR,AS |
| 2SB766A | PNP | BCE | 500 | 1000 | 60 | 50 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 200+ | BQ,BR,BS |
| 2SC2881 | NPN | BCE | 500 | 800 | 120 | 120 | 5 | 80 | 240 | 5 | 100 | 1 | 500 | 50 | 120+ | CO1,CY1 |
| 2SC2884 | NPN | BCE | 500 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.5 | 500 | 20 | 120+ | PO1,PY1 |
| 2SC4548 | NPN | BCE | 500 | 200 | 400 | 400 | 5 | 60 | 200 | 10 | 50 | 0.6 | 50 | 5 | 70+ | CN |
| 2SD2150 | NPN | BCE | 500 | 3000 | 40 | 20 | 6 | 180 | 560 | 2 | 100 | 0.5 | 2000 | 100 | 290+ | CFQ,CFR,CFS |
| 2SD874 | NPN | BCE | 500 | 1000 | 30 | 25 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 200+ | ZQ,ZR,ZS |
| 2SD874A | NPN | BCE | 500 | 1000 | 60 | 50 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 200+ | YQ,YR,YS |
| A42 | NPN | BCE | 500 | 500 | 310 | 305 | 5 | 80 | 250 | 10 | 10 | 0.2 | 20 | 2 | 50 | A42 |
| A92 | PNP | BCE | 500 | 500 | 310 | 305 | 5 | 80 | 250 | 10 | 10 | 0.2 | 20 | 2 | 50 | A92 |
| B772 | PNP | BCE | 500 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 | 772 |
| BC869 | PNP | BCE | 500 | 1000 | 32 | 20 | 5 | 100 | 375 | 1 | 500 | 0.5 | 1000 | 100 | 40 | CEC,CGC,CHC |
| BCX51 | PNP | BCE | 500 | 1000 | 45 | 45 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 50 | AA,AC,AD |
| BCX52 | PNP | BCE | 500 | 1000 | 60 | 60 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 50 | AE,AG,AM |
| BCX53 | PNP | BCE | 500 | 1000 | 100 | 80 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 50 | AH1,AK1,AL1 |
| BCX54 | NPN | BCE | 500 | 1000 | 45 | 45 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 130 | BA,BC,BD |
| BCX55 | NPN | BCE | 500 | 1000 | 60 | 60 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 130 | BE,BG,BM |
| BCX56 | NPN | BCE | 500 | 1000 | 100 | 80 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 130 | BH,BK,BL |
| D882 | NPN | BCE | 500 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 | 882 |
| FCX591 | PNP | BCE | 1000 | 1000 | 80 | 60 | 5 | 100 | 300 | 5 | 500 | 0.6 | 1000 | 100 | 150 | P1 |
| KTA1663 | PNP | BCE | 500 | 1500 | 35 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 80 | HO,HY |
| KTA1664 | PNP | BCE | 500 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.7 | 500 | 20 | 120+ | RO,RY |
| KTA1666 | PNP | BCE | 500 | 2000 | 50 | 50 | 5 | 70 | 240 | 2 | 500 | 0.5 | 1000 | 50 | 120+ | WO,WY |
| KTC4373 | NPN | BCE | 500 | 800 | 120 | 120 | 5 | 80 | 240 | 5 | 100 | 1 | 500 | 50 | 120+ | CO,CY |
| KTC4374 | NPN | BCE | 500 | 400 | 80 | 80 | 5 | 70 | 240 | 2 | 50 | 0.4 | 200 | 20 | 100+ | EO,EY |
| KTC4376 | NPN | BCE | 500 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.5 | 500 | 20 | 120+ | PO,PY |
| KTC4379 | NPN | BCE | 500 | 2000 | 50 | 50 | 5 | 70 | 240 | 2 | 500 | 0.5 | 1000 | 50 | 120+ | UO,UY |
| KTD1898 | NPN | BCE | 500 | 1000 | 100 | 80 | 5 | 70 | 400 | 3 | 500 | 0.4 | 500 | 20 | 100+ | ZO,ZY,ZG |

## TRANSISTOR IN TO-92S

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2SA1585S | PNP | ECB | 400 | 2000 | 20 | 20 | 6 | 120 | 390 | 2 | 100 | 0.5 | 2000 | 100 | 200 |
| 2SA608S | PNP | ECB | 300 | 100 | 40 | 30 | 5 | 60 | 560 | 6 | 1 | 0.5 | 50 | 5 | 180+ |
| 2SA821S | PNP | ECB | 250 | 30 | 210 | 210 | 5 | 56 | 270 | 3 | 5 | 0.6 | 2 | 0.2 | 30 |
| 2SA933AS | PNP | ECB | 300 | 150 | 60 | 50 | 6 | 120 | 560 | 6 | 1 | 0.5 | 50 | 5 | 120 |
| 2SC1740S | NPN | ECB | 300 | 150 | 60 | 50 | 7 | 120 | 560 | 6 | 1 | 0.4 | 50 | 5 | 100 |
| 2SC4115S | NPN | ECB | 300 | 3000 | 40 | 20 | 6 | 120 | 560 | 2 | 100 | 0.5 | 2000 | 100 | 200 |
| 2SC536S | NPN | ECB | 300 | 100 | 40 | 30 | 5 | 60 | 960 | 6 | 1 | 0.5 | 50 | 5 | 100+ |
| KTC3199 | NPN | ECB | 400 | 150 | 50 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 |

## TRANSISTOR IN TO-92

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2152 | NPN | ECB | 700 | 3000 | 22 | 22 | 6 | 180 | 950 | 2 | 100 | 0.4 | 2000 | 100 | |
| 2N3904 | NPN | EBC | 625 | 200 | 60 | 40 | 6 | 100 | 400 | 1 | 10 | 0.3 | 50 | 5 | 300 |
| 2N3906 | PNP | EBC | 625 | 200 | 40 | 40 | 5 | 100 | 400 | 1 | 10 | 0.3 | 50 | 5 | 250 |
| 2N4126 | PNP | EBC | 625 | 200 | 25 | 25 | 4 | 120 | 360 | 1 | 2 | 0.4 | 50 | 5 | 250 |
| 2N4400 | NPN | EBC | 625 | 600 | 60 | 40 | 6 | 50 | 150 | 2 | 150 | 0.75 | 500 | 50 | |
| 2N4401 | NPN | EBC | 625 | 600 | 60 | 40 | 6 | 100 | 300 | 1 | 150 | 0.4 | 150 | 15 | 250 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2N4402 | NPN | EBC | 625 | 600 | 40 | 40 | 5 | 50 | 150 | 2 | 150 | 0.75 | 500 | 50 | |
| 2N4403 | PNP | EBC | 625 | 600 | 40 | 40 | 5 | 100 | 300 | 1 | 150 | 0.4 | 150 | 15 | 200 |
| 2N5087 | PNP | EBC | 625 | 50 | 50 | 50 | 3 | 250 | 800 | 5 | 0.1 | 0.3 | 10 | 1 | 40 |
| 2N5172 | NPN | ECB | 625 | 500 | 25 | 25 | 5 | 100 | 500 | 10 | 10 | 0.25 | 10 | 1 | |
| 2N5400 | PNP | EBC | 625 | 600 | 130 | 120 | 5 | 40 | 180 | 5 | 10 | 0.5 | 50 | 5 | 100 |
| 2N5401 | PNP | EBC | 625 | 600 | 160 | 150 | 5 | 80 | 250 | 5 | 10 | 0.5 | 50 | 5 | 100 |
| 2N5550 | NPN | EBC | 625 | 600 | 160 | 140 | 6 | 60 | 250 | 5 | 10 | 0.25 | 50 | 5 | 100 |
| 2N5551 | NPN | EBC | 625 | 600 | 180 | 160 | 6 | 80 | 250 | 5 | 10 | 0.2 | 50 | 5 | 80 |
| 2N6517 | NPN | EBC | 625 | 500 | 350 | 350 | 6 | 30 | 200 | 10 | 30 | 1 | 50 | 5 | 40 |
| 2N6520 | PNP | EBC | 625 | 500 | 350 | 350 | 5 | 30 | 200 | 10 | 30 | 1 | 50 | 5 | 40 |
| 2N6727 | PNP | EBC | 1000 | 1500 | 50 | 40 | 5 | 50 | 250 | 1 | 1000 | 0.5 | 1000 | 100 | 50 |
| 2SA1296 | PNP | ECB | 750 | 2000 | 20 | 20 | 6 | 120 | 400 | 2 | 100 | 0.5 | 2000 | 100 | 100 |
| 2SA1300 | PNP | ECB | 750 | 2000 | 20 | 10 | 6 | 140 | 600 | 1 | 500 | 0.82 | 2000 | 100 | 100 |
| 2SA1318 | PNP | ECB | 500 | 200 | 60 | 50 | 6 | 100 | 560 | 6 | 1 | 0.3 | 100 | 10 | 200+ |
| 2SA1625 | PNP | ECB | 750 | 500 | 400 | 400 | 7 | 40 | 200 | 5 | 50 | 1 | 100 | 10 | 10+ |

## Transistors in TO-92

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2SA562 | PNP | ECB | 500 | 500 | 35 | 30 | 5 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 200 |
| 2SA608 | PNP | ECB | 400 | 100 | 40 | 30 | 5 | 60 | 560 | 6 | 1 | 0.5 | 50 | 5 | 180+ |
| 2SA608N | PNP | ECB | 500 | 150 | 60 | 50 | 6 | 160 | 560 | 6 | 1 | 0.3 | 100 | 10 | 150 |
| 2SA673 | PNP | ECB | 400 | 500 | 35 | 35 | 4 | 60 | 320 | 3 | 10 | 0.6 | 150 | 15 | |
| 2SA673A | PNP | ECB | 400 | 500 | 50 | 50 | 4 | 60 | 320 | 3 | 10 | 0.6 | 150 | 15 | |
| 2SA720 | PNP | ECB | 625 | 500 | 60 | 50 | 5 | 85 | 340 | 10 | 150 | 0.6 | 300 | 30 | 200+ |
| 2SA821 | PNP | ECB | 250 | 30 | 210 | 210 | 5 | 56 | 270 | 3 | 5 | 0.6 | 2 | 0.2 | 30 |
| 2SA836 | PNP | ECB | 200 | 100 | 55 | 55 | 5 | 160 | 500 | 12 | 2 | 0.5 | 10 | 1 | 150 |
| 2SA844 | PNP | ECB | 300 | 100 | 55 | 55 | 5 | 160 | 800 | 12 | 2 | 0.5 | 10 | 1 | 150 |
| 2SA950 | PNP | ECB | 600 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.7 | 500 | 20 | 120+ |
| 2SB562 | PNP | ECB | 900 | 1000 | 25 | 20 | 5 | 85 | 240 | 2 | 500 | 0.5 | 800 | 80 | 350+ |
| 2SC1008 | NPN | EBC | 800 | 700 | 80 | 60 | 8 | 40 | 400 | 2 | 50 | 0.4 | 500 | 50 | 30 |
| 2SC1213 | NPN | ECB | 400 | 500 | 35 | 35 | 4 | 60 | 320 | 3 | 10 | 0.6 | 150 | 15 | |
| 2SC1213A | NPN | ECB | 400 | 500 | 50 | 50 | 4 | 60 | 320 | 3 | 10 | 0.6 | 150 | 15 | |
| 2SC1318 | NPN | ECB | 625 | 500 | 60 | 50 | 6 | 85 | 340 | 10 | 150 | 0.6 | 300 | 30 | 200+ |
| 2SC1674 | NPN | ECB | 250 | 20 | 30 | 20 | 4 | 40 | 180 | 6 | 1 | 0.3 | 10 | 1 | 400 |
| 2SC1959 | NPN | ECB | 500 | 500 | 35 | 30 | 5 | 70 | 400 | 1 | 100 | 0.25 | 100 | 10 | 200 |
| 2SC2001 | NPN | ECB | 600 | 700 | 30 | 25 | 5 | 90 | 400 | 1 | 100 | 0.6 | 700 | 70 | 50 |
| 2SC2120 | NPN | ECB | 600 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.5 | 500 | 20 | 100 |
| 2SC2216 | NPN | BEC | 300 | 50 | 50 | 45 | 4 | 40 | 140 | 12.5 | 12.5 | 0.2 | 15 | 1.5 | 300 |
| 2SC3279 | NPN | ECB | 750 | 2000 | 30 | 10 | 6 | 140 | 600 | 1 | 500 | 0.82 | 2000 | 100 | 100 |
| 2SC380TM | NPN | ECB | 300 | 50 | 35 | 30 | 4 | 40 | 240 | 12 | 2 | 0.4 | 10 | 1 | 100 |
| 2SC536 | NPN | ECB | 400 | 100 | 40 | 30 | 5 | 60 | 960 | 6 | 1 | 0.5 | 50 | 5 | 100+ |
| 2SD1513 | NPN | ECB | 625 | 2000 | 20 | 16 | 6 | 135 | 650 | 2 | 100 | 0.4 | 1000 | 10 | 100 |
| 2SD1616* | NPN | ECB | 750 | 1000 | 60 | 50 | 6 | 135 | 600 | 2 | 100 | 0.3 | 1000 | 50 | 100 |
| 8050S | NPN | ECB | 625 | 500 | 40 | 25 | 5 | 85 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| 8050SS | NPN | ECB | 1000 | 1500 | 40 | 25 | 5 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 100 |
| 8550S | PNP | ECB | 625 | 500 | 40 | 25 | 5 | 85 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| 8550SS | PNP | ECB | 1000 | 1500 | 40 | 25 | 5 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 100 |
| A1015 | PNP | ECB | 400 | 150 | 50 | 50 | 5 | 70 | 400 | 6 | 2 | 0.3 | 100 | 10 | 80 |
| A42 | NPN | EBC | 625 | 500 | 300 | 300 | 5 | 80 | 250 | 10 | 10 | 0.2 | 20 | 2 | 50 |
| A44 | NPN | EBC | 625 | 200 | 400 | 400 | 5 | 80 | 300 | 10 | 10 | 0.2 | 10 | 1 | 50 |
| A733 | PNP | ECB | 250 | 100 | 60 | 50 | 5 | 90 | 600 | 6 | 1 | 0.3 | 100 | 10 | 100 |
| A92 | PNP | EBC | 625 | 500 | 300 | 300 | 5 | 80 | 250 | 10 | 10 | 0.2 | 20 | 2 | 50 |
| A94 | PNP | EBC | 625 | 200 | 400 | 400 | 5 | 80 | 300 | 10 | 10 | 0.2 | 10 | 1 | 50 |
| B772 | PNP | ECB | 625 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| BC184,B,C | NPN | CBE | 350 | 100 | 45 | 30 | 6 | 240 | 900 | 5 | 2 | 0.6 | 100 | 5 | 150 |
| BC212,B,C | PNP | EBC | 350 | 100 | 60 | 50 | 5 | 140 | 600 | 5 | 2 | 0.6 | 100 | 5 | 200 |
| BC237 | NPN | CBE | 350 | 100 | 50 | 45 | 6 | 120 | 800 | 5 | 2 | 0.6 | 100 | 5 | 100+ |

## Transistors in TO-92

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| BC327 | PNP | CBE | 625 | 800 | 50 | 45 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 260 |
| BC328 | PNP | CBE | 625 | 800 | 30 | 25 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 260 |
| BC337,16,25 | NPN | CBE | 625 | 800 | 50 | 45 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 210 |
| BC338,16,25 | NPN | CBE | 625 | 800 | 30 | 25 | 5 | 100 | 630 | 1 | 100 | 0.7 | 500 | 50 | 210 |
| BC347 | NPN | EBC | 300 | 100 | 50 | 45 | 5 | 40 | 450 | 5 | 2 | 0.3 | 10 | 1 | 125 |
| BC350 | PNP | EBC | 300 | 100 | 50 | 45 | 5 | 40 | 450 | 5 | 2 | 0.3 | 10 | 1 | 125 |
| BC368,-25 | NPN | ECB | 625 | 1000 | 25 | 20 | 5 | 85 | 375 | 1 | 0.5 | 0.5 | 1000 | 100 | 65 |
| BC369 | PNP | ECB | 625 | 1000 | 25 | 20 | 5 | 85 | 375 | 1 | 0.5 | 0.5 | 1000 | 100 | 65 |
| BC546,B | NPN | CBE | 625 | 100 | 80 | 65 | 6 | 110 | 450 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC547,A,B,C | NPN | CBE | 625 | 100 | 50 | 45 | 6 | 110 | 800 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC548,A,B,C | NPN | CBE | 625 | 100 | 30 | 30 | 6 | 110 | 800 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC549,B,C* | NPN | CBE | 625 | 100 | 30 | 30 | 5 | 200 | 800 | 5 | 2 | 0.6 | 100 | 5 | 250 |
| BC550,B,C* | NPN | CBE | 625 | 100 | 50 | 40 | 4.5 | 100 | 800 | 5 | 2 | 0.6 | 100 | 5 | 250 |
| BC556,B | PNP | CBE | 625 | 100 | 80 | 65 | 6 | 120 | 500 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC557,A,B,C | PNP | CBE | 625 | 100 | 50 | 45 | 6 | 120 | 800 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC558,B,C | PNP | CBE | 625 | 100 | 30 | 30 | 6 | 120 | 800 | 5 | 2 | 0.3 | 100 | 5 | 150 |
| BC559* | PNP | CBE | 625 | 100 | 30 | 30 | 5 | 110 | 800 | 5 | 2 | 0.6 | 100 | 5 | 300+ |
| BC635 | NPN | ECB | 830 | 1000 | 45 | 45 | 5 | 40 | 250 | 2 | 150 | 0.5 | 500 | 50 | 100+ |
| BC637 | NPN | ECB | 830 | 1000 | 60 | 60 | 5 | 40 | 150 | 2 | 150 | 0.5 | 500 | 50 | 100+ |
| BC638 | PNP | ECB | 830 | 1000 | 60 | 60 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 100 |
| BC639 | NPN | ECB | 830 | 1000 | 100 | 80 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 100 |
| BC640 | PNP | ECB | 830 | 1000 | 100 | 80 | 5 | 63 | 250 | 2 | 150 | 0.5 | 500 | 50 | 100+ |
| BF240 | NPN | CEB | 300 | 25 | 40 | 40 | 4 | 67 | 220 | 10 | 1 | 0.3 | 10 | 1 | 150 |
| BF370 | NPN | CBE | 500 | 100 | 40 | 15 | 4.5 | 40 | 200 | 1 | 10 | 0.2 | 15 | 1.5 | 500 |
| BF420 | NPN | ECB | 830 | 100 | 300 | 300 | 5 | 50 | | 20 | 25 | 0.6 | 30 | 5 | 60 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BF421** | PNP | ECB | 830 | 100 | 300 | 300 | 5 | 50 | | 20 | 25 | 0.6 | 30 | 5 | 60 |
| **BF422** | NPN | ECB | 830 | 100 | 250 | 250 | 5 | 50 | | 20 | 25 | 0.6 | 30 | 5 | 60 |
| **BF423** | PNP | ECB | 830 | 100 | 250 | 250 | 5 | 50 | | 20 | 25 | 0.6 | 30 | 5 | 60 |
| **C1815** | NPN | ECB | 400 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 |
| **C2611** | NPN | BCE | 750 | 200 | 600 | 400 | 7 | 10 | 40 | 20 | 20 | 0.5 | 50 | 10 | 8 |
| **C945** | NPN | ECB | 400 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 1 | 0.3 | 100 | 10 | 200 |
| **D882** | NPN | ECB | 750 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| **D965** | NPN | ECB | 750 | 5000 | 42 | 22 | 6 | 340 | 950 | 2 | 500 | 0.35 | 3000 | 100 | |
| **KSA539** | PNP | EBC | 400 | 200 | 60 | 45 | 5 | 40 | 240 | 1 | 50 | 0.5 | 150 | 15 | |
| **KSA642** | PNP | EBC | 400 | 300 | 30 | 25 | 5 | 70 | 400 | 1 | 50 | 0.6 | 300 | 30 | |
| **KSB564A** | PNP | EBC | 800 | 1000 | 30 | 25 | 5 | 70 | 400 | 1 | 100 | 0.5 | 1000 | 100 | 80 |
| **KSC815** | NPN | EBC | 400 | 200 | 60 | 45 | 5 | 40 | 400 | 1 | 50 | 0.4 | 150 | 15 | 100 |
| **KSD471A** | NPN | EBC | 800 | 1000 | 40 | 30 | 5 | 70 | 400 | 1 | 100 | 0.5 | 1000 | 100 | 100 |
| **KTA1270** | PNP | ECB | 625 | 500 | 35 | 30 | 5 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 150 |

## Transistors in TO-92

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| **KTA1271** | PNP | ECB | 625 | 800 | 35 | 30 | 5 | 100 | 320 | 1 | 100 | 0.7 | 500 | 20 | 120 |
| **KTC3192** | NPN | ECB | 625 | 50 | 35 | 30 | 4 | 40 | 240 | 12 | 2 | 0.4 | 10 | 1 | 100 |
| **KTC3194** | NPN | ECB | 625 | 20 | 40 | 30 | 4 | 40 | 200 | 6 | 1 | | | | 450 |
| **KTC3197** | NPN | ECB | 625 | 50 | 30 | 25 | 4 | 20 | 200 | 12.5 | 12.5 | 0.2 | 15 | 1.5 | 300 |
| **KTC3198** | NPN | ECB | 625 | 150 | 60 | 50 | 5 | 70 | 700 | 6 | 2 | 0.25 | 100 | 10 | 80 |
| **KTC3200** | NPN | ECB | 625 | 100 | 120 | 120 | 5 | 200 | 700 | 6 | 2 | 0.3 | 10 | 1 | 100+ |
| **KTC3202/03** | NPN | ECB | 625 | | 35 | 30 | 5 | | | 1 | 100 | | | 10 | 200+ |
| **KTD1146** | NPN | ECB | 625 | 5000 | 40 | 20 | 7 | 120 | 700 | 2 | 500 | 0.4 | 3000 | 60 | 20 |
| **M28S** | NPN | ECB | 625 | 1000 | 40 | 20 | 6 | 300 | 1000 | 1 | 100 | 0.55 | 600 | 20 | 100 |
| **M8050** | NPN | EBC | 625 | 1000 | 40 | 25 | 6 | 80 | 300 | 1 | 100 | 0.5 | 800 | 80 | 150 |
| **M8550** | PNP | EBC | 625 | 1000 | 40 | 25 | 6 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 150 |
| **MPS2222** | NPN | EBC | 625 | 600 | 60 | 30 | 5 | 100 | 300 | 10 | 150 | 1 | 500 | 50 | 300 |
| **MPS2222A** | NPN | EBC | 625 | 600 | 75 | 40 | 6 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 300 |
| **MPS2907** | PNP | EBC | 625 | 600 | 60 | 40 | 5 | 100 | 300 | 10 | 150 | 1 | 500 | 50 | 200 |
| **MPS2907A** | PNP | EBC | 625 | 600 | 60 | 60 | 5 | 100 | 300 | 10 | 150 | 0.6 | 500 | 50 | 200 |
| **MPS3702** | PNP | EBC | 625 | 800 | 40 | 25 | 5 | 60 | 300 | 5 | 50 | 0.25 | 50 | 5 | 100 |
| **MPSA05** | NPN | EBC | 625 | 500 | 60 | 60 | 4 | 100 | | 1 | 100 | 0.25 | 100 | 10 | 100 |
| **MPSA06** | NPN | EBC | 625 | 500 | 80 | 80 | 4 | 100 | | 1 | 100 | 0.25 | 100 | 10 | 100 |
| **MPSA13** | NPN | EBC | 625 | 500 | 30 | 30 | 10 | 10000 | | 5 | 100 | 1.5 | 100 | 0.1 | 125 |
| **MPSA14** | NPN | EBC | 625 | 500 | 30 | 30 | 10 | 20000 | | 5 | 100 | 1.5 | 100 | 0.1 | 125 |
| **MPSA43** | NPN | EBC | 625 | 500 | 200 | 200 | 6 | 40 | | 10 | 10 | 0.4 | 20 | 2 | 50 |
| **MPSA55** | PNP | EBC | 625 | 500 | 60 | 60 | 4 | 100 | | 1 | 100 | 0.25 | 100 | 10 | 50 |
| **MPSA56** | PNP | EBC | 625 | 500 | 80 | 80 | 4 | 100 | | 1 | 10 | 0.25 | 100 | 10 | 50 |
| **MPSA93** | PNP | EBC | 625 | 500 | 200 | 200 | 5 | 40 | | 10 | 10 | 0.4 | 20 | 2 | 50 |
| **MPSH10/11** | NPN | BEC | 350 | 50 | 30 | 25 | 3 | 60 | 200 | 10 | 4 | 0.5 | 4 | 0.4 | 650 |
| **MPSW56** | PNP | EBC | 1000 | 500 | 80 | 80 | 4 | 100 | | 1 | 50 | 0.5 | 250 | 10 | 50+ |
| **S8050** | NPN | EBC | 625 | 500 | 40 | 25 | 5 | 85 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| **S8550** | PNP | EBC | 625 | 500 | 40 | 25 | 5 | 85 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| **S9011** | NPN | EBC | 310 | 30 | 30 | 20 | 4 | 28 | 270 | 5 | 1 | 0.3 | 10 | 1 | 150 |
| **S9012** | PNP | EBC | 625 | 500 | 40 | 25 | 5 | 64 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| **S9013** | NPN | EBC | 625 | 500 | 40 | 25 | 5 | 64 | 300 | 1 | 50 | 0.6 | 500 | 50 | 150 |
| **S9014** | NPN | EBC | 400 | 100 | 50 | 45 | 5 | 60 | 1000 | 5 | 1 | 0.3 | 100 | 5 | 150 |
| **S9015** | PNP | EBC | 450 | 100 | 50 | 45 | 5 | 60 | 1000 | 5 | 1 | 0.3 | 100 | 10 | 150 |
| **S9016** | NPN | EBC | 300 | 25 | 30 | 20 | 5 | 28 | 270 | 5 | 1 | 0.3 | 10 | 1 | 300 |
| **S9018** | NPN | EBC | 400 | 50 | 25 | 18 | 4 | 28 | 270 | 5 | 1 | 0.5 | 10 | 1 | 600 |
| **SS8050** | NPN | EBC | 1000 | 1500 | 40 | 25 | 5 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 100 |
| **SS8550** | PNP | EBC | 1000 | 1500 | 40 | 25 | 5 | 85 | 300 | 1 | 100 | 0.5 | 800 | 80 | 100 |
| **STA124** | PNP | ECB | 625 | 1000 | 15 | 12 | 6.5 | 200 | 450 | 1 | 100 | 0.4 | 500 | 50 | 120+ |
| **STC128** | NPN | ECB | 625 | 1000 | 20 | 15 | 6.5 | 150 | | 1 | 100 | 0.3 | 500 | 50 | 120+ |

## Transistors in TO-92MOD

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| **2SA1013** | PNP | ECB | 900 | 1000 | 160 | 160 | 6 | 65 | 310 | 5 | 200 | 1.5 | 500 | 50 | 15 |
| **2SA1020** | PNP | ECB | 900 | 2000 | 50 | 50 | 5 | 70 | 240 | 2 | 500 | 0.5 | 1000 | 50 | 100+ |
| **2SA1160** | PNP | ECB | 900 | 2000 | 20 | 10 | 6 | 140 | 600 | 1 | 500 | 0.5 | 2000 | 50 | 140+ |
| **2SA1283** | PNP | ECB | 900 | 1000 | 60 | 60 | 6 | 55 | 300 | 4 | 100 | 0.3 | 500 | 25 | 50 |
| **2SA1371** | PNP | ECB | 1000 | 100 | 300 | 300 | 5 | 40 | 320 | 10 | 10 | 0.6 | 20 | 2 | 100 |
| **2SA966** | PNP | ECB | 900 | 1500 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 15 |
| **2SB560** | PNP | ECB | 900 | 700 | 100 | 80 | 5 | 60 | 560 | 5 | 50 | 0.8 | 500 | 50 | 100+ |
| **2SB647** | PNP | ECB | 900 | 1000 | 120 | 80 | 5 | 60 | 320 | 5 | 150 | 1 | 500 | 50 | 140 |
| **2SB647A** | PNP | ECB | 900 | 1000 | 120 | 100 | 5 | 60 | 200 | 5 | 150 | 1 | 500 | 50 | 140 |
| **2SB740** | PNP | ECB | 900 | 1000 | 70 | 50 | 6 | 100 | 320 | 2 | 100 | 0.6 | 1000 | 100 | 100 |
| **2SB764** | PNP | ECB | 900 | 1000 | 60 | 50 | 5 | 60 | 320 | 2 | 50 | 0.7 | 500 | 50 | 150+ |
| **2SB892** | PNP | ECB | 1000 | 2000 | 60 | 50 | 6 | 100 | 560 | 2 | 100 | 0.4 | 1000 | 50 | 150 |
| **2SB985** | PNP | ECB | 1000 | 3000 | 60 | 50 | 6 | 100 | 560 | 2 | 100 | 0.7 | 2000 | 100 | 100 |
| **2SC1383** | NPN | ECB | 1000 | 1000 | 30 | 25 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 100 |
| **2SC1384** | NPN | ECB | 1000 | 1000 | 50 | 50 | 5 | 85 | 340 | 10 | 500 | 0.4 | 500 | 50 | 100 |
| **2SC1627A** | NPN | ECB | 800 | 400 | 80 | 80 | 5 | 70 | 240 | 2 | 50 | 0.4 | 200 | 20 | 80 |
| **2SC2060** | NPN | ECB | 750 | 1000 | 40 | 32 | 5 | 80 | 400 | 3 | 100 | 0.4 | 500 | 50 | |
| **2SC2229*** | NPN | ECB | 800 | 50 | 200 | 150 | 5 | 70 | 240 | 5 | 10 | 0.5 | 10 | 1 | 80 |
| **2SC2230*** | NPN | ECB | 800 | 100 | 200 | 160 | 5 | 120 | 400 | 10 | 10 | 0.5 | 50 | 5 | 50 |
| **2SC2235** | NPN | ECB | 900 | 800 | 120 | 120 | 5 | 80 | 240 | 5 | 100 | 1 | 500 | 50 | 120+ |
| **2SC2236** | NPN | ECB | 900 | 1500 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 100 |
| **2SC2383** | NPN | ECB | 900 | 1000 | 160 | 160 | 6 | 60 | 320 | 5 | 200 | 1 | 500 | 50 | 20 |
| **2SC2482*** | NPN | ECB | 900 | 100 | 300 | 300 | 7 | 30 | 150 | 10 | 20 | 1 | 10 | 1 | 50 |
| **2SC2655** | NPN | ECB | 900 | 2000 | 50 | 50 | 5 | 70 | 240 | 2 | 500 | 0.5 | 1000 | 50 | 100+ |
| **2SC3243** | NPN | ECB | 900 | 1000 | 60 | 60 | 6 | 55 | 300 | 4 | 100 | 0.3 | 500 | 25 | 80 |
| **2SD468** | NPN | ECB | 900 | 1000 | 25 | 20 | 5 | 85 | 240 | 2 | 500 | 0.5 | 800 | 80 | 190+ |
| **2SD667** | NPN | ECB | 900 | 1000 | 120 | 80 | 5 | 60 | 320 | 5 | 150 | 1 | 500 | 50 | 140+ |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2SD667A | NPN | ECB | 900 | 1000 | 120 | 100 | 5 | 60 | 200 | 5 | 150 | 1 | 500 | 50 | 140+ |
| 2SD789 | NPN | ECB | 900 | 1000 | 100 | 50 | 6 | 100 | 800 | 2 | 100 | 0.3 | 1000 | 100 | 80 |
| KSA910 | PNP | ECB | 800 | 50 | 150 | 150 | 5 | 40 | 240 | 5 | 10 | 0.8 | 10 | 1 | 80 |
| KSA928A | PNP | ECB | 1000 | 2000 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 100 |
| KSC2328A | NPN | ECB | 1000 | 2000 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 80 |
| KSC2330 | NPN | ECB | 1000 | 100 | 300 | 300 | 7 | 40 | 240 | 10 | 20 | 0.5 | 10 | 1 | 50 |
| KSC2331 | NPN | ECB | 1000 | 700 | 80 | 60 | 8 | 120 | 240 | 2 | 50 | 0.7 | 500 | 50 | 50 |

## Transistors in TO-92L

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| KSA928A | PNP | ECB | 1000 | 2000 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 100 |
| KTA1273* | PNP | ECB | 1000 | 2000 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 80+ |
| KTA1274* | PNP | ECB | 1000 | 400 | 80 | 80 | 5 | 70 | 240 | 2 | 50 | 0.4 | 200 | 20 | 80+ |
| KTC1027 | NPN | ECB | 1000 | 800 | 120 | 120 | 5 | 80 | 240 | 5 | 100 | 1 | 500 | 50 | 120+ |
| KTC3205* | NPN | ECB | 1000 | 2000 | 30 | 30 | 5 | 100 | 320 | 2 | 500 | 2 | 1500 | 30 | 80+ |
| KTC3207* | NPN | ECB | 1000 | 100 | 300 | 300 | 7 | 30 | 150 | 10 | 20 | 1 | 10 | 1 | 50 |
| KTC3227* | NPN | ECB | 1000 | 400 | 80 | 80 | 5 | 70 | 240 | 2 | 50 | 0.4 | 200 | 20 | 80+ |

## Transistors in TO-220

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2SB834 | PNP | BCE | 1500 | 3000 | 60 | 60 | 7 | 60 | 200 | 5 | 500 | 1 | 3000 | 300 | 9 |
| 2SD2137* | NPN | BCE | 2000 | 3000 | 60 | 60 | 6 | 70 | 320 | 4 | 1000 | 1.2 | 3000 | 375 | 30 |
| 2SD880 | NPN | BCE | 1500 | 3000 | 60 | 60 | 7 | 60 | 300 | 5 | 500 | 1 | 3000 | 300 | 3 |
| KTD1351 | NPN | BCE | 2000 | 3000 | 60 | 60 | 7 | 60 | 300 | 5 | 500 | 1 | 2000 | 200 | 2 |
| TIP110 | NPN | BCE | 2000 | 2000 | 60 | 60 | 5 | 1000 | | 4 | 1000 | 2.5 | 2000 | 8 | |
| TIP111 | NPN | BCE | 2000 | 2000 | 80 | 80 | 5 | 1000 | | 4 | 1000 | 2.5 | 2000 | 8 | |
| TIP112 | NPN | BCE | 2000 | 2000 | 100 | 100 | 5 | 1000 | | 4 | 1000 | 2.5 | 2000 | 8 | |
| TIP120 | NPN | BCE | 2000 | 5000 | 60 | 60 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP121 | NPN | BCE | 2000 | 5000 | 80 | 80 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP122 | NPN | BCE | 2000 | 5000 | 100 | 100 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP125* | PNP | BCE | 2000 | 5000 | 60 | 60 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP126* | PNP | BCE | 2000 | 5000 | 80 | 80 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP127* | PNP | BCE | 2000 | 5000 | 100 | 100 | 5 | 1000 | | 3 | 500 | 4 | 5000 | 20 | |
| TIP31 | NPN | BCE | 2000 | 3000 | 40 | 40 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP31A | NPN | BCE | 2000 | 3000 | 60 | 60 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP31B | NPN | BCE | 2000 | 3000 | 80 | 80 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP31C | NPN | BCE | 2000 | 3000 | 100 | 100 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP32 | PNP | BCE | 2000 | 3000 | 40 | 40 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP32A | PNP | BCE | 2000 | 3000 | 60 | 60 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP32B | PNP | BCE | 2000 | 3000 | 80 | 80 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP32C | PNP | BCE | 2000 | 3000 | 100 | 100 | 5 | 10 | 50 | 4 | 3000 | 1.2 | 3000 | 375 | 3 |
| TIP41A | NPN | BCE | 2000 | 6000 | 60 | 60 | 5 | 15 | 75 | 4 | 3000 | 1.5 | 6000 | 600 | 3 |
| TIP41B | NPN | BCE | 2000 | 6000 | 80 | 80 | 5 | 15 | 75 | 4 | 3000 | 1.5 | 6000 | 600 | 3 |
| TIP41C | NPN | BCE | 2000 | 6000 | 100 | 100 | 5 | 15 | 75 | 4 | 3000 | 1.5 | 6000 | 600 | 3 |
| TIP42A | PNP | BCE | 2000 | 6000 | 60 | 60 | 5 | 15 | 75 | 4 | 3000 | 1.5 | 6000 | 600 | 3 |
| TIP42B/C | PNP | BCE | 2000 | 6000 | 80 | 80 | 5 | 15 | 75 | 4 | 3000 | 1.5 | 6000 | 600 | 3 |

## Transistor TO-126

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRA | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2SD2136* | NPN | ECB | 1250 | 3000 | 60 | 60 | 6 | 40 | 250 | 4 | 1000 | 1.2 | 3000 | 375 | 30+ |
| 3CA8772 | PNP | ECB | 1250 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| B772 | PNP | ECB | 1250 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| BD139 | NPN | ECB | 1250 | 1500 | 80 | 80 | 5 | 40 | 160 | 2 | 150 | 0.5 | 500 | 50 | 190+ |
| BD140 | PNP | ECB | 1250 | 1500 | 80 | 80 | 5 | 40 | 250 | 2 | 150 | 0.5 | 500 | 50 | 160 |
| BD233 | NPN | ECB | 1250 | 2000 | 45 | 45 | 5 | 40 | | 2 | 150 | 0.6 | 1000 | 100 | 3 |
| BD235 | NPN | ECB | 1250 | 2000 | 60 | 60 | 5 | 40 | | 2 | 150 | 0.6 | 1000 | 100 | 3 |
| BD237 | NPN | ECB | 1250 | 2000 | 100 | 80 | 5 | 40 | | 2 | 150 | 0.6 | 1000 | 100 | 3 |
| BD433 | NPN | ECB | 1250 | 4000 | 22 | 22 | 5 | 40 | 130 | 5 | 10 | 0.5 | 2000 | 200 | 3 |
| BD435 | NPN | ECB | 1250 | 4000 | 32 | 32 | 5 | 40 | 130 | 5 | 10 | 0.5 | 2000 | 200 | 3 |
| BD437 | NPN | ECB | 1250 | 4000 | 45 | 45 | 5 | 30 | 130 | 5 | 10 | 0.6 | 2000 | 200 | 3 |
| D882 | NPN | ECB | 1250 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |

## Transistors in TO-251/252

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLARITY | PIN ARRA | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 2SA1700 | PNP | BCE | 1000 | 200 | 400 | 400 | 5 | 60 | 200 | 10 | 50 | 0.6 | 50 | 5 | 70+ |
| 2SB1261-Z | PNP | BCE | 2000 | 3000 | 60 | 60 | 7 | 100 | 400 | 2 | 600 | 0.3 | 1500 | 150 | 120+ |
| 2SC4003 | NPN | BCE | 1000 | 200 | 400 | 400 | 5 | 60 | 200 | 10 | 50 | 0.6 | 50 | 5 | 70+ |
| 2SD1758 | NPN | BCE | 2000 | 2000 | 40 | 32 | 5 | 82 | 390 | 3 | 500 | 0.8 | 2000 | 200 | 80 |
| 2SD1899-Z | NPN | BCE | 2000 | 3000 | 60 | 60 | 7 | 100 | 400 | 2 | 600 | 0.25 | 1500 | 150 | 120+ |
| B772 | PNP | BCE | 1250 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| D882 | NPN | BCE | 1250 | 3000 | 40 | 30 | 6 | 60 | 400 | 2 | 1000 | 0.5 | 2000 | 200 | 50 |
| TIP29 | NPN | BCE | 1000 | 1000 | 40 | 40 | 5 | 15 | 75 | 4 | 1000 | 0.7 | 1000 | 125 | 3 |
| TIP29A | NPN | BCE | 1000 | 1000 | 60 | 60 | 5 | 15 | 75 | 4 | 1000 | 0.7 | 1000 | 125 | 3 |
| TIP29B | NPN | BCE | 1000 | 1000 | 80 | 80 | 5 | 15 | 75 | 4 | 1000 | 0.7 | 1000 | 125 | 3 |
| TIP29C | NPN | BCE | 1000 | 1000 | 100 | 100 | 5 | 15 | 75 | 4 | 1000 | 0.7 | 1000 | 125 | 3 |

## IC Regulator

| | PD | IO | VI | VO | Iq | | |
|---|---|---|---|---|---|---|---|
| | (mW) | (mA) | (V) | (V) | (mA) | PACKAGIN | PIN ARRAY |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CJ431 | 350 | 10 | | VREF 2.44 | | SOT-23-3L | RCA |
| CJ431 | 500 | 10 | | VREF 2.44 | | SOT-89 | RAC |
| CJ431 | 770 | 10 | | VREF 2.44 | | TO-92 | RAC |
| CJ7805 | 2000 | 1500 | 35 | 4.8~5.2 | | TO-220 | IGO |
| CJ7806 | 2000 | 1500 | 35 | 5.75~6.25 | | TO-220 | IGO |
| CJ7808 | 2000 | 1500 | 35 | 7.7~8.3 | | TO-220 | IGO |
| CJ7809 | 2000 | 1500 | 35 | 8.65~9.35 | | TO-220 | IGO |
| CJ7812 | 2000 | 1500 | 40 | 11.5~12.5 | 8 | TO-220 | IGO |
| CJ7815 | 2000 | 1500 | 35 | 14.4~15.6 | 8 | TO-220 | IGO |
| CJ78L05 | 350 | 100 | 30 | 4.8~5.2 | 6 | SOT-23-3L | OIG |
| CJ78L05 | 500 | 100 | 30 | 4.8~5.2 | 6 | SOT-89 | OGI |
| CJ78L05 | 625 | 100 | 30 | 4.8~5.2 | 6 | TO-92 | OGI |
| CJ78L06 | 350 | 100 | 30 | 5.75~6.25 | 6 | SOT-23-3L | OIG |
| CJ78L06 | 500 | 100 | 30 | 5.75~6.25 | 6 | SOT-89 | OGI |
| CJ78L06 | 625 | 100 | 30 | 5.75~6.25 | 6 | TO-92 | OGI |
| CJ78L08 | 350 | 100 | 30 | 7.7~8.3 | 6 | SOT-23-3L | OIG |
| CJ78L08 | 500 | 100 | 30 | 7.7~8.3 | 6 | SOT-89 | OGI |
| CJ78L08 | 625 | 100 | 30 | 7.7~8.3 | 6 | TO-92 | OGI |
| CJ78L09 | 350 | 100 | 30 | 8.64~9.36 | 6 | SOT-23-3L | OIG |
| CJ78L09 | 500 | 100 | 30 | 8.64~9.36 | 6 | SOT-89 | OGI |
| CJ78L09 | 625 | 100 | 30 | 8.64~9.36 | 6 | TO-92 | OGI |
| CJ78L12 | 350 | 100 | 35 | 11.5~12.5 | 6.5 | SOT-23-3L | OIG |
| CJ78L12 | 500 | 100 | 35 | 11.5~12.5 | 6.5 | SOT-89 | OGI |
| CJ78L12 | 625 | 100 | 35 | 11.5~12.5 | 6.5 | TO-92 | OGI |
| CJ78L15 | 500 | 100 | 30 | 14.4~15.6 | 6.5 | SOT-89 | OGI |
| CJ78L15 | 625 | 100 | 30 | 14.4~15.6 | 6.5 | TO-92 | OGI |
| CJ78L18 | 500 | 100 | 30 | 17.3~18.7 | 6.5 | SOT-89 | OGI |
| CJ78L18 | 625 | 100 | 30 | 17.3~18.7 | 6.5 | TO-92 | OGI |
| CJ78M05 | 2000 | 500 | 25 | 4.8~5.2 | 6 | TO-220 | IGO |
| CJ78M05 | 1250 | 500 | 25 | 4.8~5.2 | 6 | TO-252 | IGO |
| CJ7915 | 2000 | 1500 | -35 | -14.4~-15.6 | 3 | TO-220 | GIO |
| CJ79L05 | 350 | 100 | -30 | -4.8~-5.2 | 6 | SOT-23-3L | GOI |
| CJ79L05 | 500 | 100 | -30 | -4.8~-5.2 | 6 | SOT-89 | GIO |
| CJ79L05 | 625 | 100 | -30 | -4.8~-5.2 | 6 | TO-92 | GIO |
| CJ79L06 | 350 | 100 | -30 | -5.75~-6.25 | 6 | SOT-23-3L | GOI |
| CJ79L06 | 500 | 100 | -30 | -5.75~-6.25 | 6 | SOT-89 | GIO |
| CJ79L06 | 625 | 100 | -30 | -5.75~-6.25 | 6 | TO-92 | GIO |
| CJ79L08 | 350 | 100 | -30 | -7.7~-8.3 | 6 | SOT-23-3L | GOI |
| CJ79L08 | 500 | 100 | -30 | -7.7~-8.3 | 6 | SOT-89 | GIO |

## IC Regulator

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CJ79L08 | 625 | 100 | -30 | -7.7~-8.3 | 6 | TO-92 | GIO |
| CJ79L09 | 350 | 100 | -30 | -8.64~-9.36 | 6 | SOT-23-3L | GOI |
| CJ79L09 | 500 | 100 | -30 | -8.64~-9.36 | 6 | SOT-89 | GIO |
| CJ79L09 | 625 | 100 | -30 | -8.64~-9.36 | 6 | TO-92 | GIO |
| CJ79L12 | 350 | 100 | -35 | -11.5~-12.5 | 6.5 | SOT-23-3L | GOI |
| CJ79L12 | 500 | 100 | -35 | -11.5~-12.5 | 6.5 | SOT-89 | GIO |
| CJ79L12 | 625 | 100 | -35 | -11.5~-12.5 | 6.5 | TO-92 | GIO |
| CJ79L15 | 500 | 100 | -35 | -14.4~-15.6 | 6.5 | SOT-89 | GIO |
| CJ79L15 | 625 | 100 | -35 | -14.4~-15.6 | 6.5 | TO-92 | GIO |

## SCR

| | VDRM | VRRM | IT(AV) | VGT | IGT | VTM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (V) | (V) | (A) | (V) | VAK(V) | MIN(μA) | MAX(μA) | (V) | PACKAGING TYPE | |
| MAC97A6* | 400 | 400 | 1 | 1.5 | 12 | | 15000 | 1.9 | TO-92 | |
| PCR0.6A | 400 | | 0.6 | 0.8 | 7 | 5 | 120 | 1.7 | SOT-223 | |
| PCR0.6A | 400 | | 0.6 | 0.8 | 7 | 5 | 120 | 1.7 | TO-92 | |
| PCR100-6* | 400 | 400 | 0.8 | 0.8 | 7 | 5 | 200 | 1.7 | TO-92 | |
| PCR100-8* | 600 | 600 | 0.8 | 0.8 | 7 | 5 | 200 | 1.7 | TO-92 | |

## JUNCTION FIELD EFFECT TRANSISTOR

| | PD | ID | BVGDO | IDSS | VGS(OFF) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (mW) | (mA) | (V) | (μA) | VDS(V) | VGS(V) | (V) | VDS(V) | ID(μA) | Ciss | CRSS | VDS(V) | PACKAGIN | PIN ARRAY |
| K596-A | 100 | 1 | -20 | 100~170 | 5 | 0 | 1.5 | 5 | 1 | 3.5 | 0.65 | 5 | TO-92S | SGD |
| K596-B | 100 | 1 | -20 | 150~240 | 5 | 0 | 1.5 | 5 | 1 | 3.5 | 0.65 | 5 | TO-92S | SGD |
| K596-C | 100 | 1 | -20 | 210~350 | 5 | 0 | 1.5 | 5 | 1 | 3.5 | 0.65 | 5 | TO-92S | SGD |
| K596-D | 100 | 1 | -20 | 320~480 | 5 | 0 | 1.5 | 5 | 1 | 3.5 | 0.65 | 5 | TO-92S | SGD |
| K596-E | 100 | 1 | -20 | 400~800 | 5 | 0 | 1.5 | 5 | 1 | 3.5 | 0.65 | 5 | TO-92S | SGD |

## FIELD EFFECT TRANSISTOR

| | PD | ID | V(BR)DSS | RDS(on)(max) | VGS(th) | gfs(min) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (W) | (A) | (V) | (Ω) | ID(A) | VGS(V) | (V) | ID(μA) | (S) | VDS(V) | ID(A) | PACKAGIN | PIN ARRAY |
| 2N7000 | 0.35 | 0.2 | 60 | 5 | 0.5 | 10 | 0.8~3 | 1000 | 100μs | 10 | 0.2 | TO-92 | SGD |
| 2N7002 | 0.2 | 0.25 | 60 | 3 | 0.25 | 10 | 1~2.5 | 250 | 0.3+ | 15 | 0.2 | SOT-23 | GSD |
| 2N7002W | 0.2 | 0.115 | 60 | 13.5 | 0.5 | 10 | 1~2 | 250 | 0.08 | 10 | 0.2 | SOT-323 | GSD |
| CJP02N60 | 2 | 2 | 600 | 3.8 | 1 | 10 | 2~4 | 250 | 1 | 50 | 1 | TO-220 | GDS |
| CJP03N50* | 2 | 3 | 500 | 3 | 1.5 | 10 | 2~4 | 250 | 1 | 15 | 1.5 | TO-220 | GDS |
| CJP03N60* | 2 | 3 | 600 | 2.2 | 1.5 | 10 | 2~4 | 250 | 1.5 | 15 | 1.5 | TO-220 | GDS |
| CJP04N20* | 2 | 4 | 200 | 1.2 | 2 | 10 | 2~4 | 250 | 1.5 | 15 | 2 | TO-220 | GDS |
| CJP04N40* | 2 | 4 | 400 | 1.8 | 2 | 10 | 2~4 | 250 | 1.8 | 15 | 2 | TO-220 | GDS |
| CJP04N50* | 2 | 4 | 500 | 1.5 | 2 | 10 | 2~4 | 250 | 1.5 | 15 | 2 | TO-220 | GDS |
| CJP04N60* | 2 | 4 | 600 | 2.2 | 2 | 10 | 2~4 | 250 | 2.8+ | 40 | 2 | TO-220 | GDS |
| CJP05N40* | 2 | 5 | 400 | 1 | 2.5 | 10 | 2~4 | 250 | 2 | 15 | 2.5 | TO-220 | GDS |
| CJP06N60* | 2 | 6 | 600 | 1.2 | 3 | 10 | 2~4 | 250 | 2 | 15 | 3 | TO-220 | GDS |
| CJP07N20* | 2 | 7 | 200 | 0.7 | 3.5 | 10 | 2~4 | 250 | 1.5 | 14 | 3.5 | TO-220 | GDS |
| CJP07N80* | 2 | 7 | 800 | 2 | 6 | 10 | 2~4 | 250 | 3 | 50 | 6 | TO-220 | GDS |
| CJP08N20* | 2 | 8 | 200 | 0.18 | 10 | 10 | 2~4 | 250 | 3.8 | 50 | 5.4 | TO-220 | GDS |
| CJP08N50* | 2 | 8 | 500 | 0.8 | 4 | 10 | 2~4 | 250 | 4 | 15 | 4 | TO-220 | GDS |
| CJP09N60* | 2 | 9 | 600 | 1.2 | 6 | 10 | 2~4 | 250 | 3 | 50 | 6 | TO-220 | GDS |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CJP10N10* | 2 | 10 | 100 | 0.22 | 5 | 5 | 1~2 | 250 | 5 | 8 | 5 | TO-220 | GDS |
| CJP10N40* | 2 | 10 | 400 | 0.55 | 5 | 10 | 2~4 | 250 | 4+ | 15 | 5 | TO-220 | GDS |
| CJP10N45* | 2 | 10 | 450 | 0.7 | 6 | 10 | 2~4 | 250 | 3 | 50 | 6 | TO-220 | GDS |
| CJP10N60* | 2 | 10 | 600 | 0.75 | 5 | 10 | 2~4 | 250 | 3 | 15 | 5 | TO-220 | GDS |
| CJP12N10* | 2 | 12 | 100 | 0.16 | 6 | 10 | 2~4 | 250 | 4 | 15 | 6 | TO-220 | GDS |
| CJP16N25* | 2 | 16 | 250 | 0.25 | 8 | 10 | 2~4 | 250 | 3 | 15 | 8 | TO-220 | GDS |
| CJP18N20* | 2 | 18 | 200 | 0.18 | 10 | 10 | 2~4 | 250 | 6 | 3.2 | 10 | TO-220 | GDS |
| CJP20N15* | 2 | 20 | 150 | 0.13 | 10 | 10 | 2~4 | 250 | 8 | 13 | 10 | TO-220 | GDS |
| CJP20N20* | 2 | 20 | 200 | 0.16 | 10 | 10 | 2~4 | 250 | 8 | 13 | 10 | TO-220 | GDS |
| CJT01N10 | 0.8 | 1 | 100 | 0.25 | 0.5 | 10 | 2~4.5 | 1000 | 2.2+ | 10 | 0.5 | SOT-223 | GDS |
| CJU03N25* | 1.25 | 3 | 250 | 2 | 1.5 | 10 | 2~4 | 250 | 2.3+ | 15 | 1.5 | TO-252 | GDS |
| CJU05N25* | 1.25 | 5 | 250 | 1 | 2.5 | 10 | 2~4 | 250 | 1.5 | 15 | 2.5 | TO-252 | GDS |
| CJU06N10* | 1.25 | 6 | 100 | 0.4 | 3 | 10 | 2~4 | 250 | 1.5 | 15 | 2.5 | TO-252 | GDS |
| IRF630 | 2 | 9 | 200 | 0.4 | 5 | 10 | 2~4 | 250 | 3 | 3.6 | 5 | TO-220 | GDS |
| IRF640 | 2 | 18 | 200 | 0.18 | 11 | 10 | 2~4 | 250 | 6.7 | 50 | 11 | TO-220 | GDS |
| IRF820 | 2 | 2.5 | 500 | 3 | 1.5 | 10 | 2~4 | 250 | 1.5 | 10 | 2 | TO-220 | GDS |
| IRF830* | 2 | 4.5 | 500 | 1.5 | 2.7 | 10 | 2~4 | 250 | 2.5 | 50 | 2.7 | TO-220 | GDS |
| IRF840* | 2 | 8 | 500 | 0.85 | 4.8 | 10 | 2~4 | 250 | 4.9 | 50 | 4.8 | TO-220 | GDS |

## DIGITAL TRANSISTOR

| | | | | PD | IO | VCC | Gi | VO(on) | R1 | R2 | fT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PACKAGING | POLARITY | PIN ARRAY | (mW) | (mA) | (V) | | (V) | (Ω) | (Ω) | (MHz) | MARKING |
| DTA114ECA | SOT-23 | PNP | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 14 |
| DTA114EKA | SOT-23-3L | PNP | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 14 |
| DTA114ESA | TO-92S | PNP | GOI | 300 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | |
| DTA114EUA | SOT-323 | PNP | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 14 |
| DTA114TCA | SOT-23 | PNP | GIO | 200 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | 94 |
| DTA114TKA | SOT-23-3L | PNP | GIO | 200 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | 94 |
| DTA114TSA | TO-92S | PNP | GOI | 300 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | |
| DTA114TUA | SOT-323 | PNP | GIO | 200 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | 94 |
| DTA143ZKA | SOT-23-3L | PNP | GIO | 200 | 100 | 50 | 80 | 0.3 | 4.7K | 47K | 250+ | E13 |
| DTA143ZSA | TO-92S | PNP | GOI | 300 | 100 | 50 | 80 | 0.3 | 4.7K | 47K | 250+ | |
| DTA143ZUA | SOT-323 | PNP | GIO | 200 | 100 | 50 | 80 | 0.3 | 4.7K | 47K | 250+ | 113 |
| DTC114ECA | SOT-23 | NPN | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 24 |
| DTC114EKA | SOT-23-3L | NPN | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 24 |
| DTC114ESA | TO-92S | NPN | GOI | 300 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | |
| DTC114EUA | SOT-323 | NPN | GIO | 200 | 50 | 50 | 30 | 0.3 | 10K | 10K | 250+ | 24 |
| DTC114TKA | SOT-23-3L | NPN | GIO | 200 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | 4 |
| DTC114TSA | TO-92S | NPN | GOI | 300 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | |
| DTC114TUA | SOT-323 | NPN | GIO | 200 | 100 | 50 | 100 | 0.3 | 10K | 0 | 250+ | 4 |
| DTC114YKA | SOT-23-3L | NPN | GIO | 200 | 70 | 50 | 68 | 0.3 | 10K | 47K | 250+ | 64 |
| DTC114YSA | TO-92S | NPN | GOI | 300 | 70 | 50 | 68 | 0.3 | 10K | 47K | 250+ | |
| DTC114YUA | SOT-323 | NPN | GIO | 200 | 70 | 50 | 68 | 0.3 | 10K | 47K | 250+ | 64 |
| DTC143XCA | SOT-23 | NPN | GIO | 200 | 100 | 50 | 30 | 0.3 | 4.7K | 10K | 250+ | 43 |
| DTC143XKA | SOT-23-3L | NPN | GIO | 200 | 100 | 50 | 30 | 0.3 | 4.7K | 10K | 250+ | 43 |
| DTC143XSA | TO-92S | NPN | GOI | 300 | 100 | 50 | 30 | 0.3 | 4.7K | 10K | 250+ | |
| DTC143XUA | SOT-323 | NPN | GIO | 200 | 100 | 50 | 30 | 0.3 | 4.7K | 10K | 250+ | 43 |
| DTC144ECA | SOT-23 | NPN | GIO | 200 | 100 | 50 | 68 | 0.3 | 47K | 47K | 250+ | 26 |
| DTC144EKA | SOT-23-3L | NPN | GIO | 200 | 100 | 50 | 68 | 0.3 | 47K | 47K | 250+ | 26 |
| DTC144ESA | TO-92S | NPN | GOI | 300 | 100 | 50 | 68 | 0.3 | 47K | 47K | 250+ | |
| DTC144EUA | SOT-323 | NPN | GIO | 200 | 100 | 50 | 68 | 0.3 | 47K | 47K | 250+ | 26 |

## ZENER VOLTAGE DIODES

| | PD | VZ(V) | ZzT(Ω) | ZzK(Ω) | VF | | |
|---|---|---|---|---|---|---|---|
| | (mW) | | | | (V) | IF(mA) | |
| BZT52CS | 200 | 2.0~39 | 10~130 | 80~600 | 0.9 | 10 | SOD-323 |
| BZT52C | 500 | 2.4~51 | 10~100 | 80~750 | 0.9 | 10 | SOD-123 |
| BZX84CW | 200 | 2.4~39 | 15~130 | 80~600 | 0.9 | 10 | SOT-323 |
| BZX84C | 350 | 2.4~51 | 10~180 | 80~600 | 0.9 | 10 | SOT-23 |
| MMBZ5221B | 350 | 2.4~39 | 5~80 | 500~2000 | 0.9 | 10 | SOT-23 |
| MMBZ5221B | 200 | 2.4~39 | 5~80 | 500~2000 | 0.9 | 10 | SOT-323 |
| MMSZ5221B | 500 | 2.4~39 | 3.2~20 | 500~2000 | 0.9 | 10 | SOD-123 |
| MMSZ5221B | 200 | 2.4~39 | 5~80 | 500~2000 | 0.9 | 10 | SOD-323 |

## SWITCHING TRANSISTOR FOR POWER-SAVING LAMP AND RECTIFIER

| | | | PD | IC | BVCBO | BVCEO | BVEBO | hFE | VCE(sat) | fT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PACKAGIN | PIN ARRA | (mW) | (mA) | (V) | (V) | (V) | MIN | MAX | VCE(V) | IC(mA) | (V) | IC(mA) | IB(mA) | (MHz) |
| 3DD13001 | TO-252 | BCE | 1200 | 200 | 600 | 400 | 7 | 10 | 40 | 20 | 20 | 0.5 | 50 | 10 | 5 |
| 3DD13001 | TO-92 | BCE | 750 | 200 | 600 | 400 | 7 | 10 | 70 | 20 | 20 | 0.5 | 50 | 10 | 5 |
| 3DD13002 | TO-126 | BCE | 1250 | 1000 | 600 | 400 | 6 | 9 | 40 | 10 | 200 | 0.8 | 200 | 40 | 5 |
| 3DD13002 | TO-251 | BCE | 1250 | 1000 | 600 | 400 | 6 | 9 | 40 | 10 | 200 | 0.8 | 200 | 40 | 5 |
| 3DD13002,B | TO-92 | ECB | 750 | 1000 | 600 | 400 | 6 | 9 | 40 | 10 | 200 | 0.8 | 200 | 40 | 5 |
| 3DD13003 | TO-126 | BCE | 1250 | 1500 | 700 | 400 | 9 | 8 | 40 | 2 | 500 | 1 | 1000 | 250 | 5 |
| 3DD13003 | TO-220 | BCE | 2000 | 1500 | 700 | 400 | 9 | 8 | 40 | 2 | 500 | 1 | 1000 | 250 | 5 |
| 3DD13005 | TO-220 | BCE | 2000 | 4000 | 700 | 400 | 9 | 10 | 40 | 5 | 1000 | 0.6 | 2000 | 500 | 5 |
| 3DD13007 | TO-220 | BCE | 2000 | 8000 | 700 | 400 | 9 | 8 | 40 | 5 | 2000 | 1.5 | 5000 | 1000 | 4 |
| C2611 | TO-251 | ECB | 1000 | 200 | 600 | 400 | 7 | 10 | 40 | 20 | 20 | 0.5 | 50 | 5 | 5 |