

T-91-60

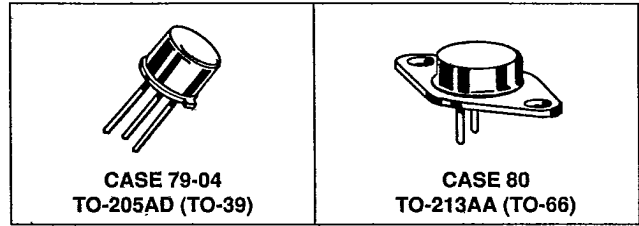
MIL-QUALIFIED PRODUCTS

Motorola MIL qualified components are ordered by adding suffix JAN, JTX, JTXV or JANS to the part numbers indicated in the following tables. Although Motorola will continue to supply components to the JAN specification where desired, this classification has been declared "inactive for new designs" per MIL-STD-19500. The higher level, JTX, is the recommended replacement.

Power Transistors

All listed power transistors are available with JAN, JTX and JTXV classifications except * = JAN and JTX only.

Bipolar



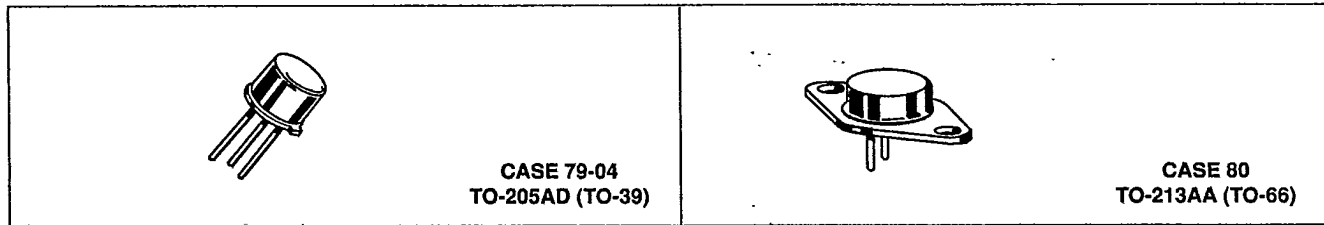
| I _C Cont Amps Max | V _{CEO(sus)} Volts Min | Device Type | | hFE @ I _C Amp | t _{on} /t _{off} μs Max | V _{CE(sat)} Max Vdc | I _C /I _B Amp | P _D (Case) Watts @ 25°C | | |
|------------------------------------|---------------------------------------|-------------|---------|--------------------------------|--|------------------------------------|---------------------------------------|--|---------|-----|
| | | NPN | PNP | | | | | | | |
| TO-204AA/AE (Formerly TO-3) | | | | | | | | | | |
| 8 | 250 | 2N6306* | | 15/75 | 3 | 0.6/3 | 0.8 | 3/0.6 | 125 | |
| | 300 | 2N6671 | | 29-Sep | 5 | 0.5*/0.4* | 1 | 5/1 | 150 | |
| | 350 | 2N6308* | | Oct-52 | 3 | 0.6/3 | 1.5 | 3/0.6 | 125 | |
| | 400 | 2N6673 | | Aug-32 | 5 | 0.5*/0.4* | 1 | 5/1 | 150 | |
| 10 | 40 | 2N6383# | 2N6648 | 1k/20k | 5 | 2.5/10 | 2 | 5/0.01 | 100** | |
| | 60 | 2N3715 | 2N3791 | 50/150 | 1 | -/2 | 1 | 5/0.5 | 150 | |
| | | 2N6384# | 2N6649 | 1k/20k | 5 | 2.5/10 | 2 | 5/0.01 | 100** | |
| | 80 | 2N3716 | 2N3792 | 50/150 | 1 | -/2 | 1 | 5/0.5 | 150 | |
| 12 | 80 | 2N6058# | 2N6051# | 1k/18k | 6 | 2/10 | 2 | 6/0.024 | 150 | |
| | 100 | 2N6059# | 2N6052# | 1k/18k | 6 | 2/10 | 2 | 6/0.024 | 150 | |
| 15 | 300 | 2N6546 | | 6/- | 10 | 1/4.7 | 5 | 15/3 | 175 | |
| | 400 | 2N6547 | | 6/- | 10 | 1/4.7 | 5 | 15/3 | 175 | |
| 20 | 75 | 2N5039 | | 20/- | 10 | 0.5/2 | 1 | 10/1 | 140 | |
| | 80 | 2N5303 | | 15/60 | 10 | 0.9*/1* | 1 | 10/1 | 200 | |
| | | | | 2N5745 | 15/60 | 10 | 1.5*/1* | 1 | 10/1 | 200 |
| | | | 2N6283# | 2N6286# | 1250/18k | 10 | 2/10 | 2 | 10/0.04 | 175 |
| | 90 | 2N5038 | | 20/- | 12 | 0.5/2 | 1 | 12/1.2 | 140 | |
| 25 | 100 | | 2N6437 | 30/120 | 10 | 0.5/1.25 | 1 | 10/1 | 200 | |
| | 120 | | 2N6438 | 30/120 | 10 | 0.5/1.25 | 1 | 10/1 | 200 | |
| 30 | 60 | 2N5302 | | 15/60 | 15 | 2*/1* | 1 | 15/1.5 | 200 | |
| | | | 2N4399 | 15/60 | 15 | -/2.1 | 1 | 15/1.5 | 200 | |
| 50 | 60 | 2N5685 | 2N5683• | 15/60 | 25 | 1.5/3 | 1 | 25/2.5 | 300 | |
| | 80 | 2N5686• | 2N5684• | 15/60 | 25 | 1.5/3 | 1 | 25/2.5 | 300 | |
| | 100 | | 2N6378• | 30/120 | 20 | 0.5/1.05 | 1 | 20/2 | 250 | |
| | 100 | 2N6274• | | 30/120 | 20 | 0.5/1.05 | 1 | 20/2 | 250 | |
| | 120 | | 2N6379• | 30/120 | 20 | 0.5/1.05 | 1 | 20/2 | 250 | |
| | 150 | 2N6277• | | 30/120 | 20 | 0.5/1.05 | 1 | 20/2 | 250 | |

Darlington, • TO-204AE; all others TO-204AA

** P_D = 85 for devices 2N6648, 2N6649 and 2N6650.

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Power Transistors, Bipolar (Continued)



| I _C Cont Amps Max | V _{CEO(sus)} Volts Min | Device Type | | Resistive Switching | | | V _{CE(sat)} @ Max Vdc | I _C /I _B A/mA | P _D (Case) Watts @ 25°C |
|------------------------------------|---------------------------------------|-------------|---------|------------------------------|-----------------------|--|--------------------------------------|--|--|
| | | NPN | PNP | h _{FE} @ Min/Max | I _C Amp | t _{on} /t _{off} μs Max | | | |
| TO-205AA (Formerly TO-5) | | | | | | | | | |
| 3 | 40 | | 2N3867S | 40/200 | 1.5 | 65*/100* | 0.75 | 1.5/150 | 10 |
| | 60 | | 2N3868S | 30/150 | 1.5 | 65*/100* | 0.75 | 1.5/150 | 10 |
| TO-205AD (Formerly TO-39) | | | | | | | | | |
| 5 | 100 | 2N5339 | 2N6193 | 60/240 | 2 | 100*/200* | 0.7 | 2/200 | 1 |
| TO-213AA (Formerly TO-66) | | | | | | | | | |
| 1 | 300 | 2N3739 | | 40/200 | 0.1 | 1.5/3.5 | 0.75 | 0.1/10 | 20 |
| 4 | 60 | | 2N3740 | 30/120 | 0.25 | 0.4/1 | 0.4 | 0.25/25 | 25 |
| | | 2N3766 | | 40/160 | 0.5 | 0.25/2.5 | 1 | 0.5/50 | 25 |
| | 80 | | 2N3741 | 30/120 | 0.25 | 0.4/1 | 0.4 | 0.25/250 | 25 |
| 2N3767 | | | 40/160 | 0.5 | 0.25/2.5 | 1 | 0.5/50 | 25 | |
| 8 | 60 | 2N6300# | 2N6298# | 750/18k | 4 | 2/8 | 4 | 4/16 | 75+ |
| | 80 | 2N6301# | 2N6299# | 750/18k | 4 | 2/8 | 4 | 4/16 | 75+ |

Darlington; + T_C = 0°C for devices 2N6300, 2N6301

*μs

MOSFETs (TMOS)

| N-Channel — Case 1-06 TO-204AA (TO-3) | | | | | | | |
|--|--------------------------------------|---|--------------------------|--------|---------------------------------|-------------------------------|------------------------------------|
| V _{(BR)DSS} (Volts) Min | r _{DS(on)} (Ohms) Max | @ | I _D (Amps) | Device | I _D (Amps) Max | C _{iss} pF Max | P _D * (Watts) Max |
| 500 | 1.5 | | 3 | 2N6762 | 4.5 | 800 | 75 |
| | 0.4 | | 7.75 | 2N6770 | 12 | 3000 | 150 |
| 400 | 1 | | 3.5 | 2N6760 | 5.5 | 800 | 75 |
| | 0.3 | | 9 | 2N6768 | 14 | 3000 | 150 |
| 200 | 0.4 | | 6 | 2N6758 | 9 | 800 | 75 |
| | 0.085 | | 19 | 2N6766 | 30 | 3000 | 150 |
| 100 | 0.18 | | 9 | 2N6756 | 14 | 800 | 75 |
| | 0.055 | | 24 | 2N6764 | 38 | 3000 | 150 |

* @ 25°C

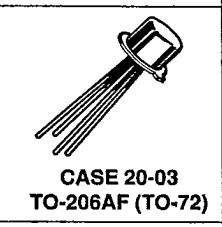
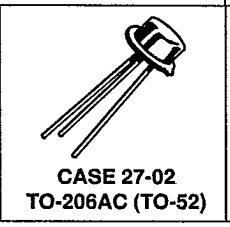
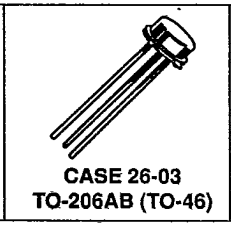
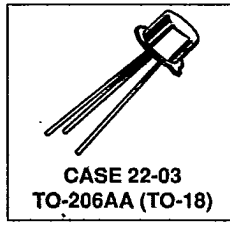
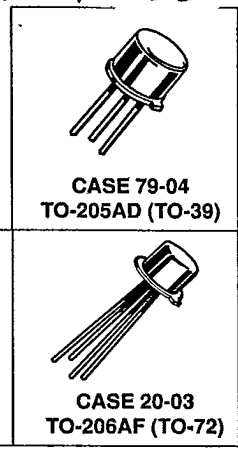
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MIL-Qualified Products (Continued)

Small-Signal Transistors, Bipolar

All devices in the following tables are qualified to JAN, JTX and JTXV levels, except:

- = JAN only
- * = JAN/JTX only
- ** = JAN/JTX/JTXV/JANS

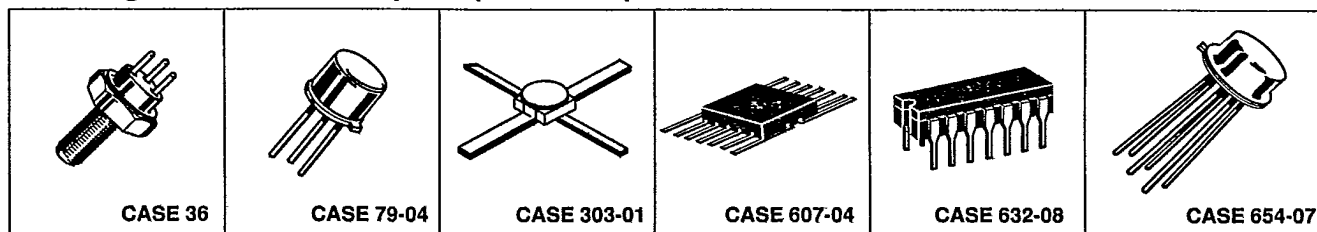


General Purpose

| Package | Device Number | V(BR)CEO Volts Min | Ic mA Max | hFE | | Ic mA | VCE(sat) Volts Max | Ic/Ib mA |
|---------------------|---------------|--------------------------|-----------------|-----|-----|----------|--------------------------|-------------|
| | | | | Min | Max | | | |
| NPN | | | | | | | | |
| TO-206AA (TO-18) | 2N3700** | 80 | 1000 | 50 | 200 | 500 | 0.5 | 500/50 |
| | 2N2484 | 60 | 50 | 200 | 500 | 0.01 | 0.3 | 1.0/0.1 |
| | 2N2221A | 50 | 800 | 35 | 150 | 1 | 1.2 | 150/15 |
| | 2N2222A | 50 | 800 | 75 | 325 | 1 | 1.2 | 150/15 |
| | 2N930* | 45 | 30 | 100 | 300 | 0.01 | 1 | 10/0.5 |
| | 2N718A | 30 | 500 | 40 | 120 | 150 | 1.5 | 150/15 |
| | 2N2221 | 30 | 800 | 25 | 150 | 1 | 1.3 | 150/15 |
| | 2N2222 | 30 | 800 | 50 | 325 | 1 | 1.3 | 150/15 |
| | 2N916• | 25 | 50 | 50 | 200 | 10 | 0.5 | 10/1.0 |
| TO-205AD (TO-39) | 2N3019S** | 80 | 1000 | 100 | 300 | 150 | 0.2 | 150/15 |
| | 2N2219A** | 50 | 800 | 100 | 300 | 150 | 0.3 | 150/15 |
| | 2N2218A | 50 | 800 | 40 | 120 | 150 | 0.3 | 150/15 |
| | 2N1613 | 30 | 500 | 40 | 120 | 150 | 1.5 | 150/15 |
| | 2N2218 | 30 | 800 | 40 | 120 | 150 | 0.4 | 150/15 |
| TO-206AB (TO-46) | 2N5581* | 50 | 800 | 40 | 120 | 150 | 0.3 | 150/15 |
| | 2N5582* | 50 | 800 | 100 | 300 | 150 | 0.3 | 150/15 |
| PNP | | | | | | | | |
| TO-206AA (TO-18) | 2N2906A | 60 | 600 | 40 | 120 | 150 | 0.4 | 150/15 |
| | 2N2907A** | 60 | 600 | 100 | 300 | 150 | 0.4 | 150/15 |
| | 2N3250A | 60 | 200 | 50 | 150 | 10 | 0.25 | 10/1.0 |
| | 2N3251A | 60 | 200 | 100 | 300 | 10 | 0.25 | 10/1.0 |
| | 2N2906 | 40 | 600 | 40 | 120 | 150 | 0.4 | 150/15 |
| | 2N2907 | 40 | 600 | 100 | 300 | 150 | 0.4 | 150/15 |
| TO-205AD (TO-39) | 2N3057A | 80 | 1000 | 50 | 200 | 500 | 0.5 | 500/50 |
| | 2N4033 | 80 | 1000 | 100 | 300 | 100 | 0.15 | 150/15 |
| | 2N4405* | 80 | 500 | 100 | 300 | 150 | 0.2 | 150/15 |
| | 2N2905A** | 60 | 600 | 100 | 300 | 1 | 0.4 | 150/15 |
| | 2N2904A | 60 | 600 | 40 | 120 | 1 | 0.4 | 150/15 |
| | 2N2904 | 40 | 600 | 40 | 120 | 1 | 0.4 | 150/15 |
| | 2N2905 | 40 | 600 | 100 | 300 | 1 | 0.4 | 150/15 |
| | 2N1132• | 40 | 600 | 30 | 90 | 150 | 1.5 | 150/15 |
| TO-206AB (TO-46) | 2N3485A* | 60 | 600 | 40 | 120 | 150 | 0.4 | 150/15 |
| | 2N3486A* | 60 | 600 | 100 | 300 | 150 | 0.4 | 150/15 |
| | 2N2605** | 60 | 30 | 100 | 400 | 10 | 0.3 | 10/0.5 |

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Small-Signal Transistors, Bipolar (Continued)



High-Frequency Amplifiers/Oscillators

The transistors shown are designed for use as both oscillators and amplifiers at UHF and VHF frequencies.

| Package | Device Number | V _{(BR)CEO} Volts Min | hFE Min | @ I _C mA | G _p dB Min | NF dB Max | @ f MHz | h _{fe} Min | @ f MHz | C _{obo} pF Max |
|------------|---------------|--------------------------------|---------|---------------------|-----------------------|-----------|---------|-----------------------|---------|-------------------------|
| NPN | | | | | | | | | | |
| TO-206AF | 2N918** | 15 | 20 | 3 | 15 | 6 | 60 | 6 | 100 | 1.7 |
| PNP | | | | | | | | | | |
| TO-206AF | 2N4261 | 15 | 30 | 10 | — | — | — | 15 | 100 | 2.5 |

Switching Transistors

The following devices are intended primarily for use in general-purpose switching, but can be used in amplifier and driver applications. Within each package group shown, the devices are listed in order of decreasing turn-on time (t_{on}).

| Package | Device Number | t _{on} ns Max | t _{off} ns Max | @ I _C mA | V _{(BR)CEO} Volts Min | I _C mA Max | hFE Min | @ I _C mA | V _{CE(sat)} Volts Max | @ I _C & I _B mA | |
|------------|---------------|------------------------|-------------------------|---------------------|--------------------------------|-----------------------|---------|---------------------|--------------------------------|--------------------------------------|----------|
| NPN | | | | | | | | | | | |
| TO-206AA | 2N914* | 40 | 40 | 200 | 15 | 150 | 30 | 120 | 10 | 0.3 | 10 1 |
| | 2N708 | 40 | 75 | 10 | 15 | — | 40 | 120 | 10 | 0.4 | 10 1 |
| | 2N2481 | 40 | 55 | 100 | 15 | — | 40 | 120 | 10 | 0.25 | 10 1 |
| | 2N2369A** | 12 | 18 | 10 | 15 | 200 | 40 | 120 | 10 | 0.2 | 10 1 |
| | 2N3227 | 12 | 18 | 10 | 20 | 200 | 100 | 300 | 10 | 0.2 | 10 1 |
| TO-205AD | 2N3444S* | 35• | 30• | 500 | 50 | 1000 | 20 | 60 | 500 | 0.6 | 500 50 |
| | 2N3253S* | 35• | 30• | 500 | 40 | 1000 | 25 | 75 | 500 | 0.6 | 500 50 |
| | 2N3735** | — | 60 | 1000 | 50 | 1500 | 20 | 80 | 1000 | 0.9 | 1000 100 |
| | 2N3506 | 30• | 35• | 1500 | 40 | 3000 | 40 | 200 | 1500 | 1 | 1500 150 |
| | 2N3507 | 30• | 35• | 1500 | 50 | 3000 | 30 | 150 | 1500 | 1 | 1500 150 |
| TO-206AC | 2N3013 | 15 | 25 | 300 | 20 | 300 | 35 | 120 | 30 | 0.18 | 30 3 |
| | 2N4449 | 12 | 18 | 10 | 15 | 200 | 40 | 120 | 10 | 0.2 | 10 1 |
| PNP | | | | | | | | | | | |
| TO-206AA | 2N869A* | 50 | 80 | 30 | 18 | 200 | 40 | 120 | 10 | 0.15 | 10 1 |
| TO-205AD | 2N3634** | 400 | 600 | 50 | 140 | 1000 | 50 | 150 | 50 | 0.6 | 50 5 |
| | 2N3635** | 400 | 600 | 50 | 140 | 1000 | 100 | 300 | 50 | 0.6 | 50 5 |
| | 2N3636** | 400 | 600 | 50 | 175 | 1000 | 50 | 150 | 50 | 0.6 | 50 5 |
| | 2N3637 | 400 | 600 | 50 | 175 | 1000 | 100 | 300 | 50 | 0.6 | 50 5 |
| | 2N4033 | 25• | 35• | 500 | 80 | 1000 | 100 | 300 | 100 | 0.15 | 150 15 |
| | 2N3467 | 30• | 30• | 500 | 40 | 1000 | 40 | 120 | 500 | 0.6 | 500 50 |
| | 2N3468 | 30• | 30• | 500 | 50 | 1000 | 25 | 75 | 500 | 0.6 | 500 50 |
| | 2N3762 | 35• | 35• | 1000 | 40 | 1500 | 30 | 120 | 1000 | 0.9 | 1000 100 |
| | 2N3763 | 35• | 35• | 1000 | 60 | 1500 | 20 | 80 | 1000 | 0.9 | 1000 100 |
| | 2N4405 | 25• | 50• | 500 | 80 | 500 | 100 | 300 | 150 | 0.2 | 150 15 |
| TO-206AC | 2N4453 | 50 | 80 | | 18 | 200 | 40 | 120 | 30 | 0.15 | 10 1 |
| TO-206AB | 2N3764 | 35• | 35• | 1 | 40 | 1500 | 30 | 120 | 1000 | 0.9 | 1000 100 |
| | 2N3765 | 35• | 35• | 1 | 60 | 1500 | 20 | 80 | 1000 | 0.9 | 1000 100 |

* = JAN/JTX

t_r•t_f

** = JAN/JTX/JTXV/JANS. All others, JAN/JTX/JTXV.

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High-Voltage/High-Current Transistors

This following table lists Motorola standard devices that have high Collector-Emitter Breakdown Voltage. Devices are listed in decreasing order of $V_{(BR)CEO}$ within each package type.

| Package | Device Number | $V_{(BR)CEO}$ Volts Min | I_C mA Max | h_{FE} Min/Max | @ I_C mA | $V_{CE(sat)}$ Volts Max | @ I_C mA | & I_B mA |
|------------|---------------|-------------------------------|--------------------|---------------------|------------------|-------------------------------|------------------|------------------|
| NPN | | | | | | | | |
| TO-205AD | 2N3439 | 350 | 1000 | 40/160 | 20 | 0.5 | 50 | 4 |
| | 2N3440 | 250 | 1000 | 40/160 | 20 | 0.5 | 50 | 4 |
| | 2N3500** | 150 | 300 | 40/120 | 150 | 0.4 | 150 | 15 |
| | 2N3501** | 150 | 300 | 100/300 | 150 | 0.4 | 150 | 15 |
| | 2N3498** | 100 | 500 | 40/120 | 150 | 0.6 | 300 | 30 |
| | 2N3499** | 100 | 500 | 100/300 | 150 | 0.6 | 300 | 30 |
| PNP | | | | | | | | |
| TO-205AD | 2N5416S | 350 | 1000 | 30/120 | 50 | 2 | 50 | 5 |
| | 2N3743 | 300 | 50 | 50/200 | 30 | 1.2 | 30 | 3 |
| | 2N4931 | 250 | 50 | 50/200 | 30 | 1.2 | 30 | 3 |
| | 2N5415S | 200 | 1000 | 30/120 | 50 | 2 | 50 | 5 |
| | 2N4930 | 200 | 50 | 50/200 | 30 | 1.2 | 30 | 3 |
| | 2N3637** | 175 | 1000 | 100/300 | 50 | 0.6 | 50 | 5 |
| | 2N3636** | 175 | 1000 | 50/150 | 50 | 0.6 | 50 | 5 |
| | 2N3635** | 140 | 1000 | 100/300 | 50 | 0.6 | 50 | 5 |
| | 2N3634** | 140 | 1000 | 50/150 | 50 | 0.6 | 50 | 5 |

Multiple Transistors

These multiple small-signal transistors include devices intended for amplifier and switching applications.

| Device Number | Maximum Ratings | | | Electrical Characteristics | | | | | |
|----------------------------------|-----------------|-------------|-------------------|-----------------------------|---------------------|------------------|-------------------------------|------------------|------------------|
| | V_{CEO} V | I_C mA | $P_D(Total)$ W | I_{CBO} μA Max | h_{FE} Min/Max | @ I_C mA | $V_{CE(sat)}$ Volts Min | @ I_C mA | & I_B mA |
| QUAD — NPN Case 632-02 | | | | | | | | | |
| 2N6989 | 50 | 800 | 1.5 | 0.01 | 100/300 | 150 | 0.3 | 150 | 15 |
| Case 607-04 | | | | | | | | | |
| 2N6990 | 50 | 800 | 0.4 | 0.01 | 100/300 | 150 | 0.3 | 150 | 15 |
| QUAD — PNP Case 632-02 | | | | | | | | | |
| 2N6987 | 60 | 600 | 1.5 | 0.01 | 100/300 | 150 | 0.4 | 150 | 15 |
| Case 607-04 | | | | | | | | | |
| 2N6988 | 60 | 600 | 0.4 | 0.01 | 100/300 | 150 | 0.4 | 150 | 15 |
| DUAL — NPN Case 654-07 | | | | | | | | | |
| 2N2060** | 60 | 500 | 0.5 | 0.002 | 30/90 | 0.1 | 0.3 | 0.5 | 5 |
| 2N3819** | 60 | 30 | 0.5 | 0.002 | 300/1000 | 0.1 | 0.3 | 1 | 0.1 |
| 2N3820** | 60 | 30 | 0.5 | 0.002 | 150/600 | 0.1 | 0.3 | 1 | 0.1 |
| 2N3810** | 60 | 50 | 0.6 | 0.01 | 150/450 | 0.1 | 0.2 | 0.1 | 0.1 |
| 2N3811** | 60 | 50 | 0.6 | 0.01 | 300/900 | 0.1 | 0.2 | 0.1 | 0.1 |
| 2N4854 | 40 | 600 | 0.6 | 0.01 | 100/300 | 150 | 0.4 | 150 | 15 |
| 2N5793 | 40 | 600 | 0.6 | 0.01 | 40/120 | 150 | 0.6 | 150 | 15 |
| 2N5794 | 40 | 600 | 0.6 | 0.01 | 100/300 | 150 | 0.6 | 150 | 15 |
| 2N5795 | 60 | 600 | 0.6 | 0.02 | 40/150 | 150 | 0.4 | 150 | 15 |
| 2N5796 | 60 | 600 | 0.6 | 0.02 | 100/300 | 150 | 0.4 | 150 | 15 |

** = JAN/JTX/JTXV/JANS. All others, JAN/JTX/JTXV.

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Small-Signal Transistors, JFETs

Amplifiers, TO-206AF

All are low-frequency amplifiers except 2N3823 and 2N4416A which are suitable for VHF/UHF amplification.

| Device | Y _{fsl} (μmho) @ f | | Y _{osl} (μmho) @ f | | C _{iss} (pF) Max | C _{rss} (pF) Max | NF (dB) @ R _G =1 MΩ | | V _(BR) (V) Min | V _{GS(off)} (V) | | I _{DSS} (mA) | |
|------------------|-------------------------------|-------|-------------------------------|-------|---------------------------|---------------------------|--------------------------------|------|---------------------------|--------------------------|-----|-----------------------|-----|
| | Min | (kHz) | Min | (kHz) | | | Max | Max | | f (kHz) | Min | Max | Min |
| P-Channel | | | | | | | | | | | | | |
| 2N3330* | 1500 | 1 | 40 | 1 | 20 | — | 3 | 1 | 20 | — | 6 | 2 | 6 |
| 2N3331* | 2000 | 1 | 100 | 1 | 20 | — | 4 | 1 | 20 | — | 8 | 5 | 15 |
| N-Channel | | | | | | | | | | | | | |
| 2N3821 | 1500 | 1 | 10 | 1 | 6 | 3 | 2.5 | 0.01 | 50 | — | 4 | 0.5 | 2.5 |
| 2N3822 | 3000 | 1 | 20 | 1 | 6 | 3 | 2.5 | 0.01 | 50 | — | 6 | 2 | 10 |
| 2N3823 | 3500 | 1 | 35 | 1 | 6 | 2 | 2.5 | 1 | 30 | — | 8 | 4 | 20 |
| 2N4416A | 4500 | 1 | 50 | 1 | 4 | 0.8 | 4 | 400 | 35 | 2.5 | 6 | 5 | 15 |

Switches and Choppers, TO-206AA — N-Channel

| Device | r _{ds(on)} (Ω) @ I _D | | V _{GS(off)} (V) | | I _{DSS} (mA) | | V _(BR) (V) Min | C _{iss} (pF) Max | C _{rss} (pF) Max | t _{on} (ns) Max | t _{off} (ns) Max |
|---------|--|----|--------------------------|-----|-----------------------|-----|---------------------------|---------------------------|---------------------------|--------------------------|---------------------------|
| | Max | mA | Min | Max | Min | Max | | | | | |
| 2N4856* | 25 | 0 | 4 | 10 | 50 | — | 40 | 18 | 8 | 6 | 25 |
| 2N4857 | 40 | 0 | 2 | 6 | 20 | 100 | 40 | 18 | 8 | 6 | 50 |
| 2N4858 | 60 | 0 | 0.8 | 4 | 8 | 80 | 40 | 18 | 8 | 10 | 100 |

RF Transistors, Bipolar NPN

Power, V_{CC} = 28 Vdc

| Device Number | Frequency MHz, Max | P _{out} W | @ P _{in} W (Max) | η _{G_{pe}} dB (min) | Package |
|---------------|--------------------|--------------------|---------------------------|--------------------------------------|----------------|
| 2N3553 | 175 | 2.5 | 0.25 | 65 | 79-04 (TO-39) |
| 2N3375 | 400 | 3 | 1 | 65 | 36-03 (TO-60) |
| 2N3866,A** | 400 | 1 | 0.15 | 45 | 79-034 (TO-39) |

Small-Signal

| Device Number | Maximum Ratings | | | Electrical Characteristics | | | | | |
|----------------------|--------------------|-------------------|-------------------|----------------------------------|-----------|------------------------|---------|---------|---------|
| | V _{CEO} V | I _C mA | P _T mW | h _{FE} @ I _C | nF dB @ f | G _{pe} dB @ f | Min/Max | Min/Max | Min/Max |
| Case 303-1 | | | | | | | | | |
| 2N6603 | 15 | 30 | 300 | 30/200 | 15 | 1.0/2.5 | 1 | 15/21 | 1 |
| 2N6604 | 15 | 50 | 350 | 30/200 | 30 | 1.5/3.0 | 1 | 15/21 | 1 |
| Case TO-206AF | | | | | | | | | |
| 2N2857** | 15 | 40 | 300 | 30/150 | 3 | —/4.5 | 0.45 | 12.5/21 | 0.45 |
| 2N4957 | 30 | 30 | 200 | 30/165 | 5 | —/3.0 | 0.45 | 17/25 | 0.45 |
| Case TO-205AD | | | | | | | | | |
| 2N5109 | 20 | 400 | 1000 | 40/150 | 50 | —/3.5 | 0.2 | 11/— | 0.2 |
| Case TO-18 | | | | | | | | | |
| 2N3960 | 12 | — | 400 | 60/300 | 10 | — | — | — | — |

Designed for high-speed current-mode logic switching — |h_{fe}| = 13 @ 100 MHz, V_{CE(sat)} = 0.2 V, C_{obo} = C_{ib} = 2.5 pF Max

* = JAN/JTX, ** = JAN/JTX/JTXV/JANS. All others, JAN/JTX/JTXV