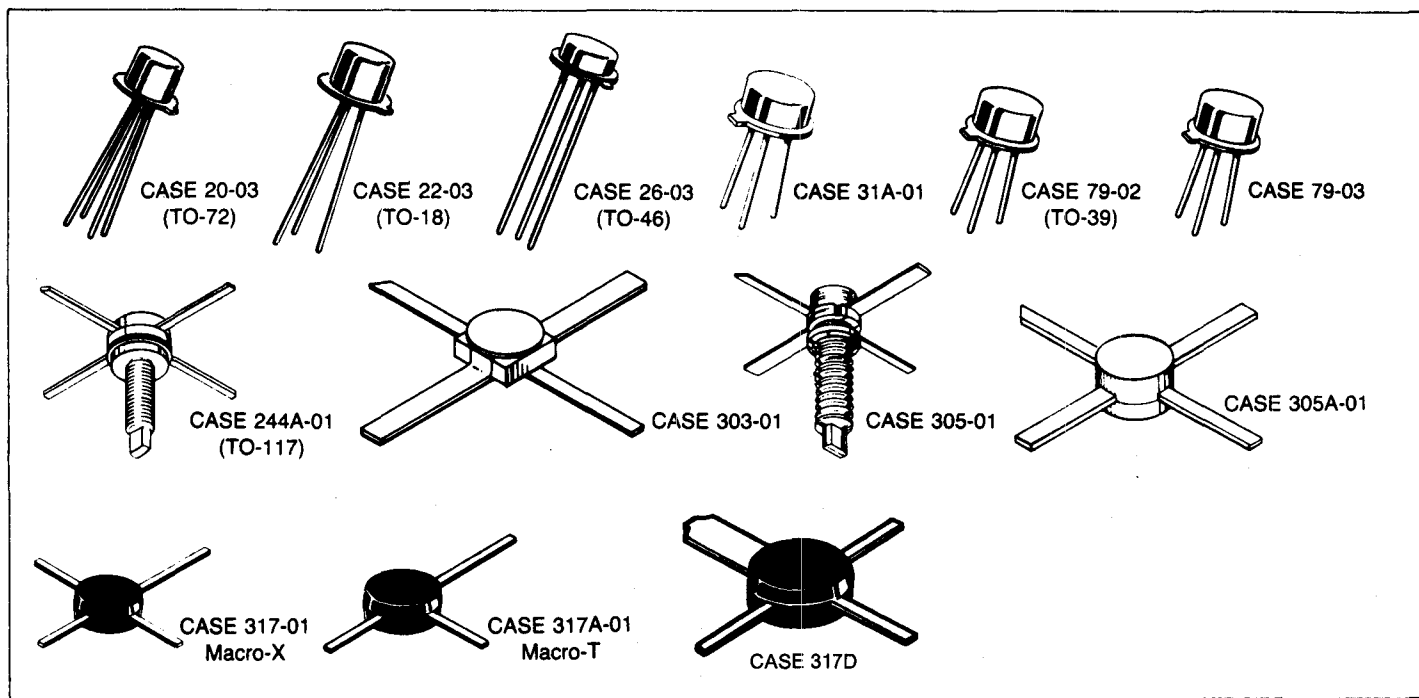


RF Small-Signal Transistors

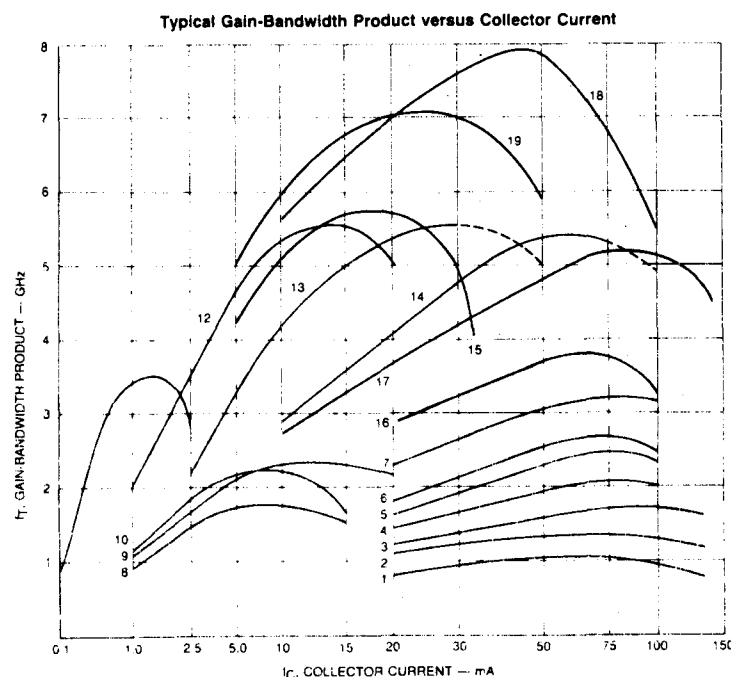
3



Motorola's small-signal, low power RF transistor product range includes transistors with gain-bandwidths of 1.0 GHz to 8.0 GHz operating at currents of 0.25 mA to over 140 mA.

These devices are available in a wide variety of package types; metal can, plastic Macro-X and Macro-T, hermetic ceramic and microminiature. Most of these transistors are fully

characterized with y or s parameters; and in addition, there are non-saturated switching characteristics, low power driver specifications, and noise figure limits. QPL types with JAN, JTX and JTXV processing levels are available as well as Hi Rel processing to meet unique customer requirements.



RF Small-Signal Transistors

Motorola small-signal and medium power RF transistors with gain-bandwidth products from 1.0 GHz to 8.0 GHz operate with currents from 0.25 mA to over 140 mA. The following chart, combined with the tables of package options, enables the circuit designer to select the optimum device from Motorola's wide range of transistor/package combinations.

- | | |
|--|-----------------------------------|
| 1 2N3866, 2N3866A | 10 2N4957, 2N4958, 2N4959, PNP |
| 2 2N5160, MM4018, PNP | 12 2N6603, BFR90, MRF901, MRF904 |
| 3 2N3948, 2N4427, MRF207 | 13 2N6604, BFR91, MRF911, MRF914 |
| 4 2N5109, 2N5943 | 14 BFR96, MRF961, MRF962, MRF965 |
| 5 2N5583, PNP | 15 BFW92A |
| 6 2N5836, 2N5837 | 16 MRF559 |
| 7 MRF511, MRF517, MRF525 | 17 MRF580, MRF581, MRF586, MRF587 |
| 8 2N2857, 2N3939, 2N5179, MRF501, MRF502 | 18 MRF571, MRF572 |
| 9 BFX89, BFY90 | 19 MRF536, MRF534, MM4049, PNP |

RF SMALL-SIGNAL TRANSISTORS (continued)

Class C Amplifiers

The transistors listed in these tables are specified for operation in Class C RF power amplifier circuits. The tables are arranged by increasing frequency of operation first, then by increasing output power.

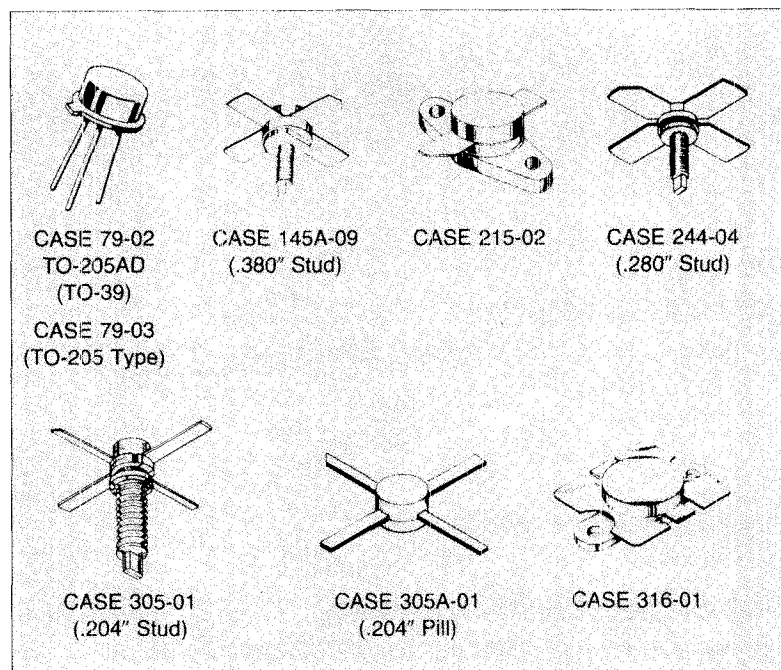
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Class C Amplifiers

Device Type	Frequency (MHz)	P _{in} (w)	P _{out} (w)	G _{pe} dB	Voltage (V)	Case Outline
MRF229	90	0.15	1.5	10.0	12.5	TO-39
MRF604	175	0.1	1.0	10.0	12.5	TO-46
2N4427	175	0.1	1.0	10.0	12.5	TO-39
MRF553	175	0.1	1.5	11.5	12.5	317D-01
MRF607	175	0.12	1.75	11.5	12.5	TO-39
2N6255	175	0.5	3.0	7.8	12.5	TO-39
2N3553	175	0.25	2.5	10.0	28.0	TO-39
MRF237*	175	0.25	4.0	12.0	12.5	TO-39
MRF207	220	0.15	1.0	8.2	12.5	TO-39
MRF227*	225	0.13	3.0	13.5	12.5	TO-39
MRF525*	400	0.001	0.02	13.0	26.0	TO-39
2N3866	400	0.1	1.0	10.0	28.0	TO-39
2N5160†	400	0.16	1.0	8.0	28.0	TO-39
MRF313	400	0.03	1.0	15.0	28.0	305A-1
2N3948	400	0.25	1.0	6.0	13.6	TO-39
MRF515	470	0.12	0.75	8.0	12.5	TO-39
MRF581	470	0.05	1.2	13.8	12.5	317-1
MRF629*	470	0.32	2.0	8.0	12.5	TO-39
MRF627	470	0.05	0.5	10.0	12.5	305A-1
MRF628	470	0.05	0.5	10.0	12.5	249-5
MRF630	470	0.25	3.0	10.8	12.5	TO-39
MRF559	870	0.063	0.5	9.0	12.5	317-1
MRF837	870	0.125	0.75	8.0	12.5	317-01
MRF581	870	0.12	1.0	9.2	12.5	317-1
MRF557	870	0.25	1.5	8.0	12.5	317D-01

*Grounded Emitter TO-39

†PNP



For UHF Applications

225–400 MHz, AM Transistors

Stringent requirements of the UHF Military band are met by MRF313, 321, 331, 325, 326, 327, 329 and 2N6439 types, with all-gold metal systems, ruggedness, and "CQ" programmed wirebond construction, to assure consistent input impedances.

Device	P _{out} Output Power Watts	P _{in} Input Power Watts	G _{pE} Power Gain dB Min	V _{CC} Supply Voltage Volts	Package
MRF525*	0.02	0.001	13	26	79-03
2N4428	25	.075	10	28	TO-205AD
2N5160†	1.0	0.16	8.0	28	TO-205AD
2N3866	1.0	0.1	10	28	TO-205AD
MRF313	1.0	0.03	15	28	305A-01
MRF5174	2.0	0.125	12	28	244-04
MRF321**	10	0.62	12	28	244-04
MRF323**	20	2.0	10	28	244-04
MRF5177	30	7.5	6.0	28	215-02
MRF325**	30	4.3	8.5	28	316-01
MRF326**	40	8.0	9.0	28	316-01
MRF309	50	10	7.0	28	316-01
2N6439	60	10	7.8	28	316-01
MRF390***	60	6.8	9.5#	28	744-02
MRF327**	80	14.9	7.3	28	316-01
MRF329**	100	20	7.0	28	333-03
MRF392***	125	11	9.7#	28	744A-01

*Grounded Emitter CASE 79-03 (TO-205 Type)

**Internal Impedance Matched

***Internal Impedance Matched Push-Pull Transistors

†PNP

#Typical