

High Frequency, Low Voltage Amplifier Transistors/ Modules

The transistors listed in this table are specified for operation in RF Power amplifiers and are listed by specific application at a given test frequency. Arrangement within each application group is in the order of increasing output power. Modulation type is given in each application heading.

Device Type	P_{out} Output Power Watts	G_{PE} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
2-30 MHz, SSB TRANSISTORS				
2N6367	9.0 PEP	14	12.5	211-07
MRF432*	12.5 PEP	20	12.5	211-07
MRF433*	12.5 PEP	20	12.5	211-07
MRF406	20 PEP	12	12.5	211-07
MRF425	30 PEP	12	12.5	145A-08
2N6368	40 PEP	10	12.5	211-10
MRF420	75 PEP	10	12.5	211-10
MRF421	100 PEP	10	12.5	211-04
*PNP/NPN Complements for Complementary Symmetry Driver, See EB-32. For Matched Pairs Order MK433.				
Chain 1 — 12.5 V, 2-30 MHz Off-road vehicles/Oil tankers/Fishing fleets				
14-30 MHz, CB/AMATEUR TRANSISTORS				
MRF8004	3.5	10	12.5	TO-39
MRF449	30	10	13.6	211-07
MRF449A	30	10	13.6	145A-07
MRF450	50	11	13.6	211-07
MRF450A	50	11	13.6	145A-07
MRF453	60	11	13.6	211-10
MRF453A	60	11	13.6	145A-04
MRF454	80	11	13.6	211-10
MRF454A	80	11	13.6	145-04
27-50 MHz, LOW-BAND FM TRANSISTORS				
MRF402	1.0	10	12.5	TO-39
2N5847	8.0	10	12.5	145A-07
2N5848	20	8.0	12.5	145A-07
2N5849	40	7.5	12.5	145A-08

Device Type	P_{out} Output Power Watts	G_{pe} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
40-100 MHz, MIDBAND FM TRANSISTORS				
MRF230	1.5	10	12.5	TO-39
MRF231	3.5	10	12.5	145A-07
MRF232	7.5	9.0	12.5	145A-07
MRF233	15	9.5	12.5	145A-07
MRF234	25	10	12.5	145A-07
MRF235	50	8.0	12.5	145A-07

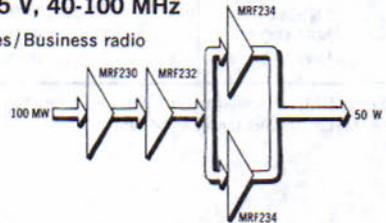
Chain 2 — 12.5 V, 40-100 MHz

European taxis/Off-shore oil rigs



Chain 3 — 12.5 V, 40-100 MHz

European buses/Business radio



156-162 MHz, VHF MARINE RADIO FM TRANSISTORS

MRF237**	4.0	12	12.5	TO-39
MRF238	30	9.0	12.5	145A-07

**Grounded emitter TO-39 package. See EB-29

Chain 4 — 13.6 V, 160 MHz

Marine radio/Pleasure craft/Fishing boats/2 meter "ham band"



130-175 MHz, HIGH BAND/VHF FM TRANSISTORS

MRF604	1.0	10	12.5	TO-46
2N4427	1.0	10	12	TO-39
MRF607	1.75	12.5	12.5	TO-39
2N6255	3.0	7.8	12.5	TO-39
2N5589	3.0	8.2	13.6	144B-06
MRF237**	4.0	12	12.5	TO-39
2N6080	4.0	12	12.5	145A-07
2N5590	10	5.2	13.6	145A-07
MRF212	10	9.0	12.5	145A-07

**Grounded emitter TO-39 package. See EB-29

RF TRANSISTORS AND MODULES (continued)

Device Type	P_{out} Output Power Watts	G_{FE} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
130-175 MHz, HIGH BAND/VHF FM TRANSISTORS				
2N6081	15	6.3	12.5	145A-07
MRF221	15	6.3	12.5	211-07
MRF215*	20	8.2	12.5	278-06
2N5591	25	4.4	13.6	145A-07
2N6082	25	6.2	12.5	145A-07
MRF222	25	6.2	12.5	211-07
2N6083	30	5.7	12.5	145A-07
MRF223	30	5.7	12.5	211-07
2N6084	40	4.5	12.5	145A-07
MRF224	40	4.5	12.5	211-07
MRF216*	40	6.7	12.5	278-06
MRF243*	60	7.0	12.5	278-06
MRF244*	70	6.6	12.5	278-06
MRF245*	80	6.4	12.5	278-06

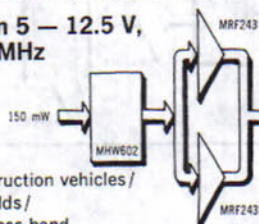
*Controlled "Q" transistor. See EB-19

146-175 MHz, HIGH BAND/VHF FM MODULES				
MHW601	13	21	12.5	297-01
MHW602	20	21	12.5	297-01

See EB-23 for applications information

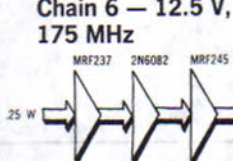
Chain 5 — 12.5 V, 175 MHz

Construction vehicles/
Oil fields/
Business band



Chain 6 — 12.5 V, 175 MHz

Business band / Truck dispatch



Chain 7 — 12.5 V, 175 MHz

Police / Fire / Ambulance



220 MHz, CITIZENS BAND FM TRANSISTORS

MRF207	1.0	8.2	12.5	TO-39
MRF225	1.5	9.0	12.5	TO-39
MRF227*	3.0	13.5	12.5	TO-39
MRF208	10	10	12.5	145A-07
MRF226	13	9.0	12.5	145A-07
MRF209	25	4.4	12.5	145A-07

*Grounded emitter TO-39 package. See EB-29

Chain 8 — 12.5 V, 225 MHz

1¼ meter "ham band" / 225 MHz class E / Communicator class



407-512 MHz, UHF FM TRANSISTORS

2N6256	0.5	10	12.5	249.05
MRF626	0.5	10	12.5	305-01
MRF627	0.5	10	12.5	305A-01
MRF628	0.5	10	12.5	249-05
MRF515	0.75	8.0	12.5	TO-39
2N3948	1.0	6.0	13.6	TO-39
2N5644	1.0	7.0	12.5	145A-07
MRF629**	2.0	8.0	12.5	TO-39
2N5944	2.0	9.0	12.5	244-04
2N5945	4.0	8.0	12.5	244-04
2N5946	10	6.0	12.5	244-04
MRF618*	15	6.0	12.5	278-06
MRF644*	25	6.2	12.5	278-06
MRF646*	40	4.9	12.5	278-06

*Controlled "Q" transistor. See EB-19.

**Grounded emitter TO-39 package.

AMPLIFIER MODULES

MODULE	P_{out} Output Power Watts	f MHz	G_{PE} Power Gain dB Min	V_{DC} Supply Voltage	Package
407-512 MHz, UHF FM MODULES					
MHW401-1	1.5	400-440	15	7.5	301-01
MHW401-2	1.5	440-470	15	7.5	301-01
MHW401-3	1.5	470-512	15	7.5	301-01
MHW709-1	7.5	400-440	18.8	12.5	700-01
MHW709-2	7.5	440-470	18.8	12.5	700-01
MHW709-3	7.5	470-512	18.8	12.5	700-01
MHW710-1	13	400-440	19.4	12.5	700-01
MHW710-2	13	440-470	19.4	12.5	700-01
MHW710-3	13	470-512	19.4	12.5	700-01

See EB-8 for applications information

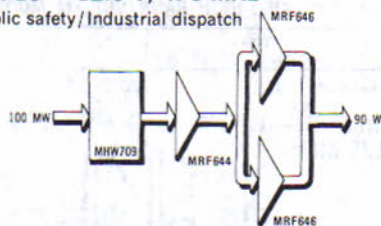
Chain 9 – 12.5 V, 512 MHz

Agricultural communications/Base stations/Repeaters



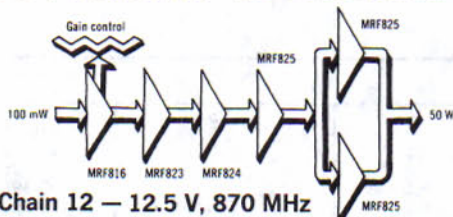
Chain 10 – 12.5 V, 470 MHz

Public safety/Industrial dispatch



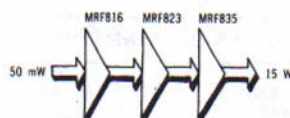
Device Type	P_{out} Output Power Watts	G_{PE} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
806-947 MHz, UHF FM TRANSISTORS				
MRF816	0.75	10	12.5	249-05
MRF817	2.5	6.2	13.6	244-04
MRF823*	5.0	8.0	12.5	278-05
MRF818	8.0	5.05	13.6	244-04
MRF824*	12	4.8	12.5	278-05
MRF835**	15	7 (G_{PB})	12.5	278-05
MRF825*	25	4.5	12.5	278-05

*Controlled "Q" transistor. See EB-19 **Gold metallization, controlled "Q" transistor. See EB-26, EB-19



Chain 12 – 12.5 V, 870 MHz

Base station/Industrial dispatch



Chain 11 – 12.5 V, 850 MHz

Cellular radio telephone

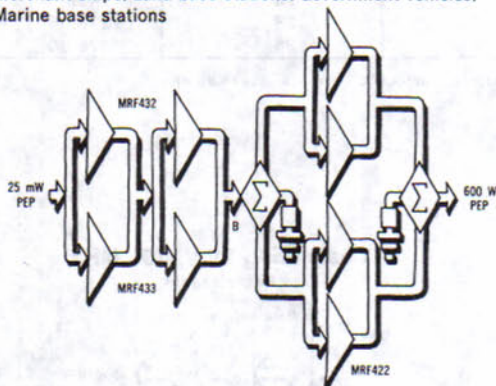
High Frequency, High Voltage, Power Amplifier Transistors

The transistors listed in this table are specified for operation in RF Power amplifiers and are listed by specific application at a given test frequency. Arrangement within each application group is in the order of increasing output power. Modulation type is given in each application heading.

Device Type	P_{out} Output Power Watts	G_{PE} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
2-30 MHz, SSB TRANSISTORS				
2N6370	10 PEP	12	28	211-07
MRF432	12.5 PEP	20	12.5	211-07
MRF433	12.5 PEP	20	12.5	211-07
2N5070	25 PEP	13	28	TO-60
MRF401	25 PEP	13	28	145A-07
MRF427	25 PEP	12	50	145A-08
2N5941	40 PEP	13	28	211-07
2N5942	80 PEP	10	28	211-04
MRF422	150 PEP	10	28	211-04
MRF428	150 PEP	13	50	307-01

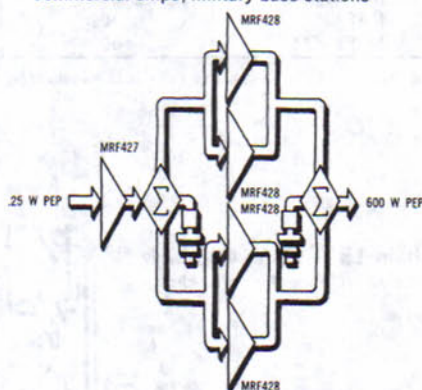
Chain 13 — 28 V, 2-30 MHz

Merchant ships/Land-base stations/Government vehicles/
Marine base stations



Chain 14 — 50 V, 2-30 MHz

Commercial ships/Military base stations

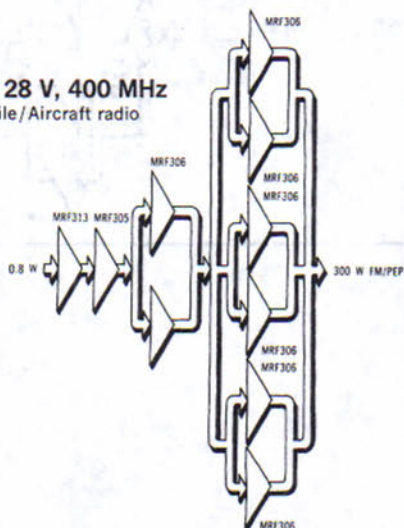


RF TRANSISTORS AND MODULES (continued)

Device Type	P_{out} Output Power Watts	G_{FE} Power Gain dB Min	V_{CC} Supply Voltage Volts	Package
106-175 MHz, VHF AM TRANSISTORS				
2N3866	1.0	10	28	TO-39
2N3553	2.5	10	28	TO-39
2N5641	7.0	8.4	28	144B-04
2N5642	20	8.2	28	145A-07
2N5643	40	7.6	28	145A-07
2N6166	100	6.0	28	211-10
225-400 MHz, UHF AM TRANSISTORS				
MRF509	1.0	10	28	207A-01
2N3866	1.0	10	28	TO-39
MRF313	1.0	16 (Typ)	28	305-01
MRF313A	1.0	16 (Typ)	28	305A-01
MRF5174	2.0	12	28	244-04
2N5635	2.5	6.2	28	144B-04
MRF5175	5.0	11	28	244-04
2N5636	7.5	5.7	28	144B-04
MRF304*	10	9.0	28	278-06
MRF5176	15	10	28	244-04
2N5637	20	4.6	28	145A-07
MRF5177	30	6.0	28	215-01
MRF5177A	30	6.0	28	145A-07
MRF305*	30	8.0	28	278-06
MRF306**	60	8.0	28	278-06

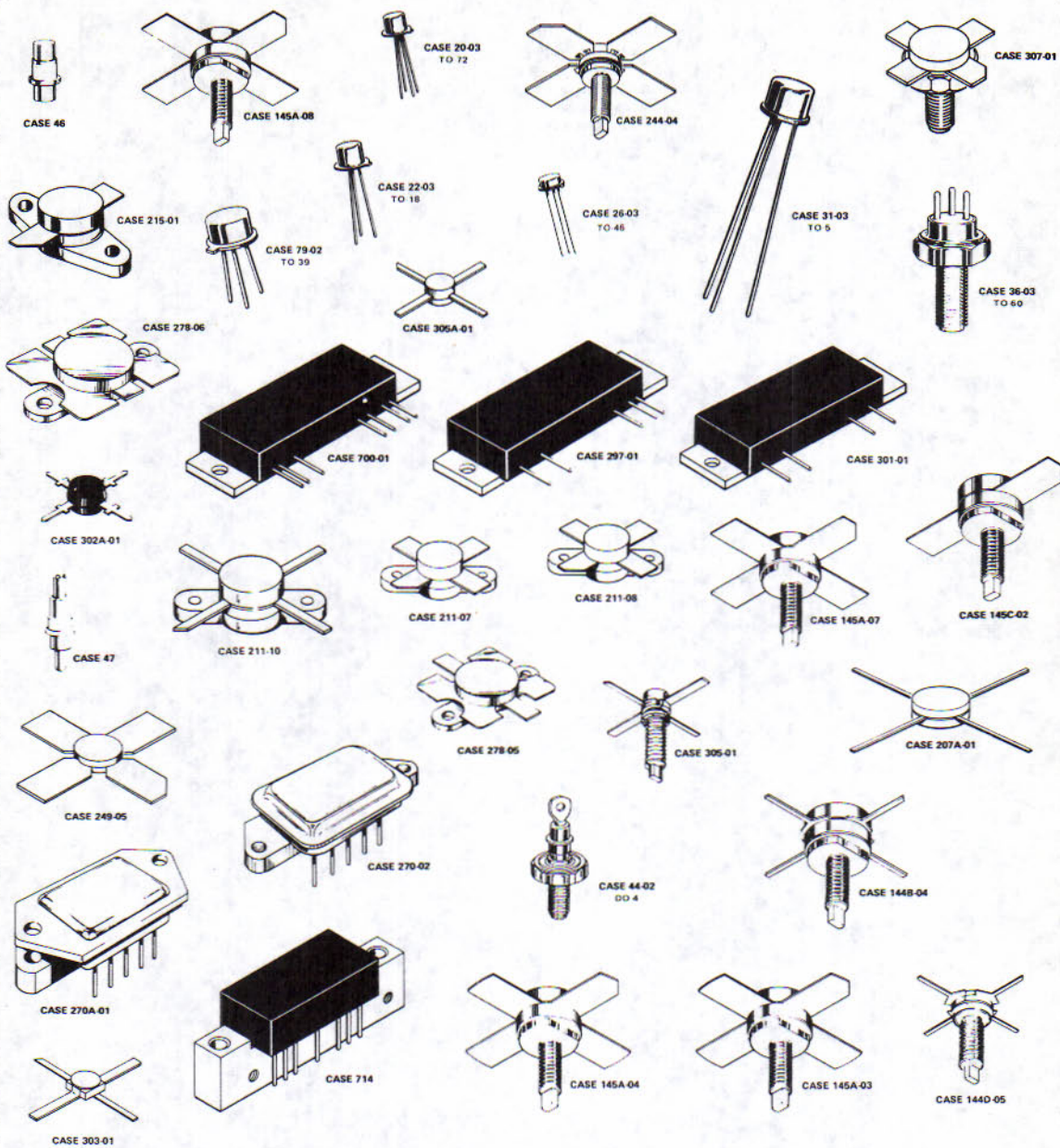
*Controlled "Q" transistor. See EB-19 **Gold metallization, double matched controlled "Q" transistor. See EB-26, EB-19

Chain 15 — 28 V, 400 MHz
Fixed/Mobile/Aircraft radio



Chain 16 — 28 V, 400 MHz
Aircraft radio





PACKAGE INFORMATION

Silicon High Frequency products are available in a variety of packages for many applications. Information on devices in non-standard packaging may be obtained through your local Motorola Sales Office or Motorola distributor.