



MOTOROLA

MRF464
MRF464A

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The RF Line

NPN SILICON RF POWER TRANSISTORS

... designed primarily for applications as a high-power linear amplifier from 2.0 to 30 MHz, in single sideband mobile, marine and base station equipment.

- Specified 28 Volt, 30 MHz Characteristics –
 - Output Power = 80 W (PEP)
 - Minimum Gain = 15 dB
 - Efficiency = 40%
 - Intermodulation Distortion = -32 dB (Max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	35	Vdc
Collector-Base Voltage	V _{CBO}	65	Vdc
Emitter-Base Voltage	V _{EBO}	4.0	Vdc
Collector Current – Continuous	I _C	10	Adc
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	250 1.4	Watts W/°C
Storage Temperature Range	T _{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	0.7	°C/W
Stud Torque (1)	–	8.5	In. Lb

(1) Case 145A For Repeated Assembly Use 11 In. Lb.

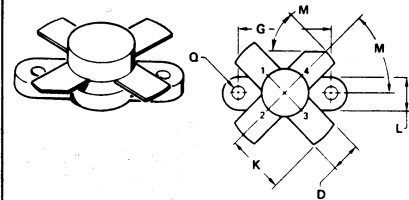
MATCHING PROCEDURE

In the push-pull circuit configuration it is preferred that the transistors are used as matched pairs to obtain optimum performance.

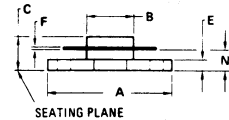
The matching procedure used by Motorola consists of measuring h_{FE} at the data sheet conditions and color coding the device to predetermined h_{FE} ranges within the normal h_{FE} limits. A color dot is added to the marking on top of the cap. Any two devices with the same color dot can be paired together to form a matched set of units.

80 W (PEP) – 30 MHz

RF POWER TRANSISTOR
NPN SILICON

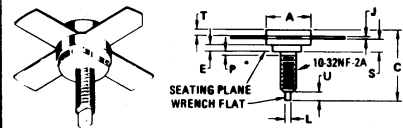


STYLE 1:
PIN 1. EMITTER
2. BASE
3. EMITTER
4. COLLECTOR



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.64	24.89	0.970	0.980
B	11.81	12.95	0.465	0.510
C	5.82	6.98	0.229	0.275
D	5.46	5.97	0.216	0.235
E	2.13	2.79	0.084	0.110
F	0.08	0.18	0.003	0.007
G	18.29	18.54	0.720	0.730
K	11.05	–	0.435	–
L	6.22	6.48	0.246	0.255
M	45° NOM	–	45° NOM	–
N	3.66	4.52	0.144	0.178
Q	2.92	3.30	0.115	0.130

MRF464 CASE 211-11



STYLE 1:
PIN 1. EMITTER
2. BASE
3. EMITTER
4. COLLECTOR

DIM	MILLIMETERS		INCHES	
	NOM	MAX	MIN	MAX
A	12.45	12.95	0.490	0.510
B	10.54	10.80	0.415	0.425
C	19.88	22.73	0.775	0.895
D	5.46	5.97	0.215	0.235
E	1.83	–	0.072	–
J	0.08	0.18	0.003	0.007
K	12.45	–	0.490	–
L	1.65	1.90	0.065	0.075
M	45° NOM	–	45° NOM	–
P	–	1.27	–	0.050
R	9.73	10.06	0.383	0.396
S	3.84	4.50	0.151	0.177
T	2.11	2.54	0.083	0.100
U	2.49	3.35	0.098	0.132

MRF464A CASE 145A-10



FIGURE 2 – OUTPUT POWER versus INPUT POWER

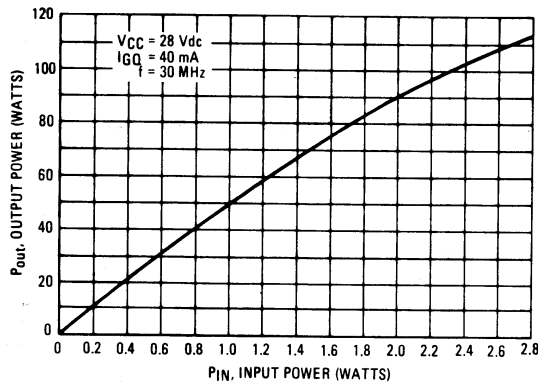


FIGURE 3 – POWER GAIN versus FREQUENCY

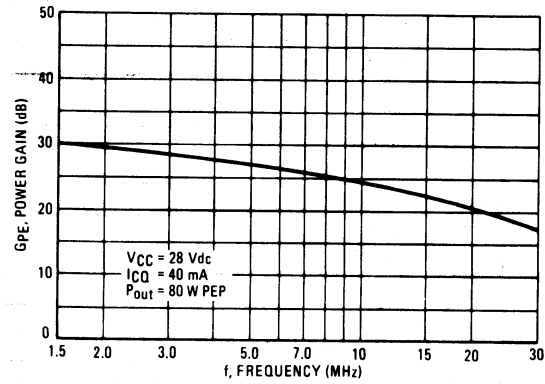


FIGURE 4 – OUTPUT POWER versus SUPPLY VOLTAGE

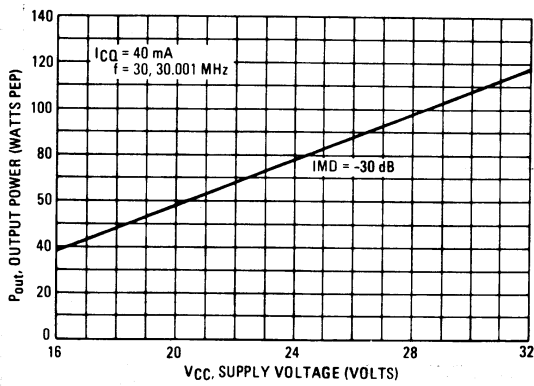


FIGURE 5 – INTERMODULATION DISTORTION versus OUTPUT POWER

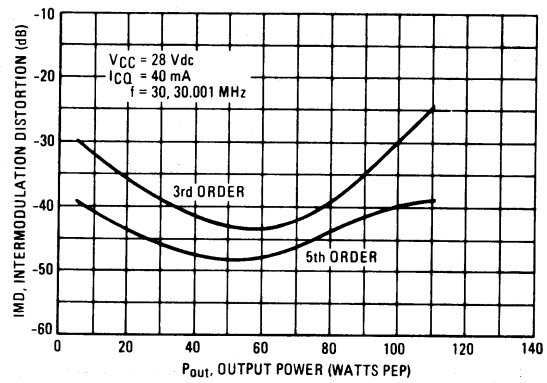


FIGURE 6 – OUTPUT CAPACITANCE versus FREQUENCY

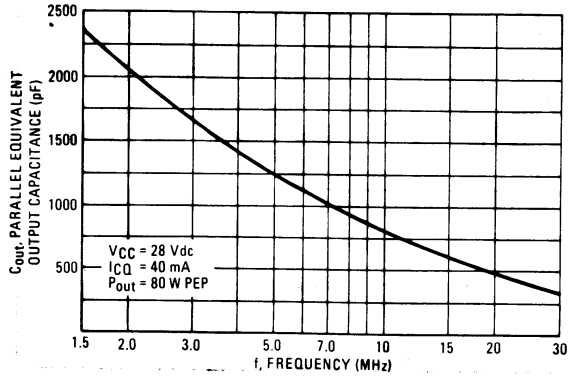


FIGURE 7 – OUTPUT RESISTANCE versus FREQUENCY

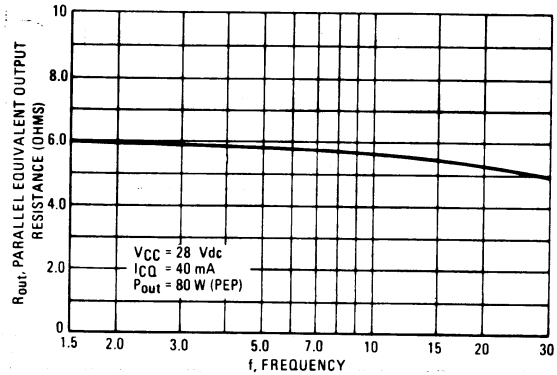
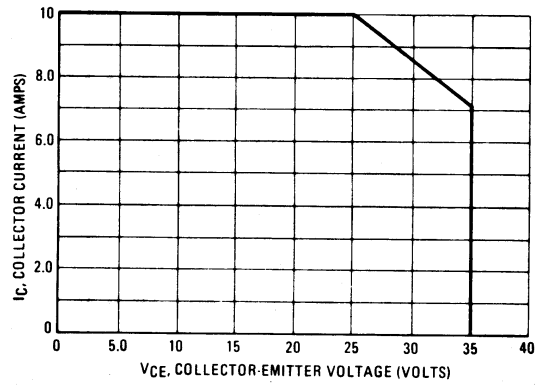


FIGURE 8 – DC SAFE OPERATING AREA



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FIGURE 9 – SERIES INPUT IMPEDANCE

