



# MRF226

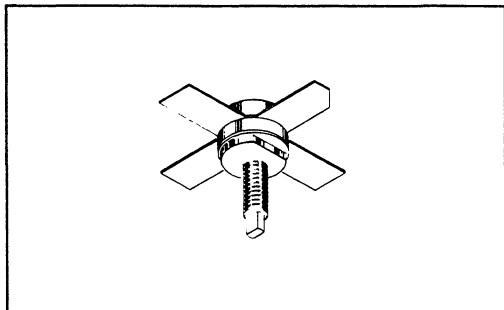
## The RF Line

13 W – 225 MHz  
RF POWER TRANSISTOR  
NPN SILICON

**NPN SILICON RF POWER TRANSISTOR**

... designed for 12.5 Volt large-signal power amplifier applications in communication equipment operating at 225 MHz. Ideally suited for Class E citizens band radio.

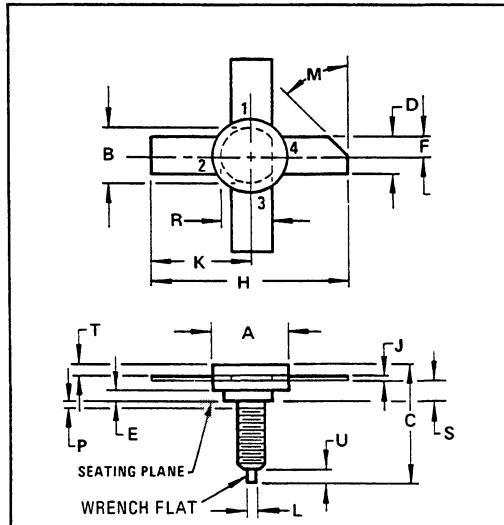
- Specified 12.5 Volt, 225 MHz Characteristics –  
Output Power = 13 Watts  
Minimum Gain = 9.0 dB  
Efficiency = 50%
- Characterized With Series Equivalent Large-Signal Impedance Parameters
- Designed to Withstand Load Mismatch at all Phase Angles with 20:1 VSWR



**MAXIMUM RATINGS**

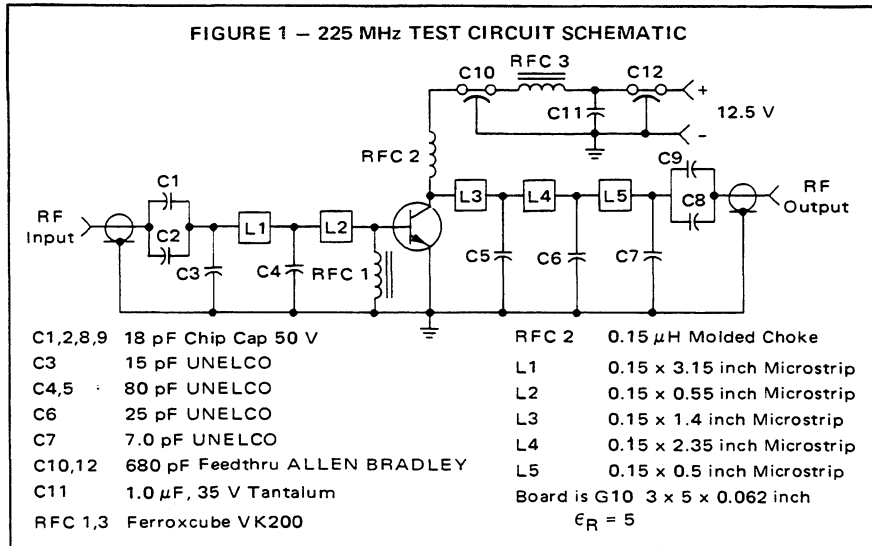
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	18	Vdc
Collector-Base Voltage	$V_{CBO}$	36	Vdc
Emitter-Base Voltage	$V_{EBO}$	4.0	Vdc
Collector Current – Continuous	$I_C$	2.5	Adc
Total Device Dissipation @ $T_C = 25^{\circ}C$ (1) Derate above $25^{\circ}C$	$P_D$	45 257	Watts mW/ $^{\circ}C$
Storage Temperature Range	$T_{stg}$	-65 to +200	$^{\circ}C$
Stud Torque (2)	–	6.5	In. Lb.

(1) These devices are designed for RF operation. The total device dissipation rating applies only when the devices are operated as Class C RF amplifiers.  
(2) For repeated assembly, use 5 In. Lb.



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	9.78	0.370	0.385
B	8.13	8.38	0.320	0.330
C	18.03	19.05	0.710	0.750
D	5.59	5.84	0.220	0.230
E	1.78	2.03	0.070	0.080
F	2.79	2.92	0.110	0.115
H	26.42	28.70	1.040	1.130
J	0.10	0.15	0.004	0.006
K	13.21	14.35	0.520	0.565
L	1.40	1.65	0.055	0.065
M	45° NOM		45° NOM	
P	–	1.27	–	0.050
R	7.59	7.80	0.299	0.307
S	4.01	4.52	0.158	0.178
T	2.16	2.41	0.085	0.095
U	2.54	3.30	0.100	0.130

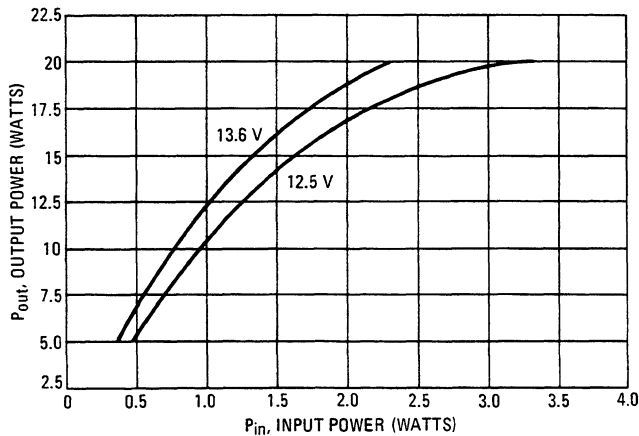
NOTE:  
CASE 145A-01 USE 8-32NC2A STUD  
CASE 145A-01



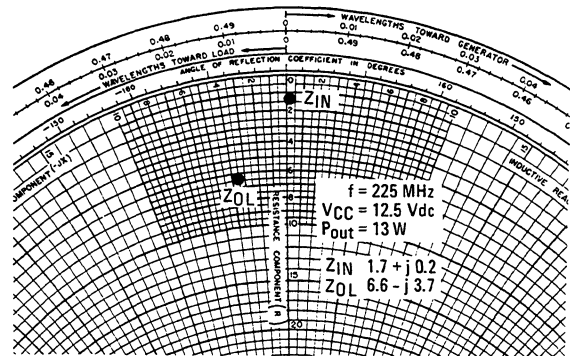
**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector Emitter Breakdown Voltage ( $I_C = 15 \text{ mAdc}, I_B = 0$ )	$BV_{CEO}$	18	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 5.0 \text{ mAdc}, I_E = 0$ )	$BV_{CBO}$	36	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 2.5 \text{ mAdc}, I_C = 0$ )	$BV_{EBO}$	4.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 15 \text{ Vdc}, I_E = 0$ )	$I_{CBO}$	—	0.25	mAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 250 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ )	$h_{FE}$	5.0	—	—
<b>FUNCTIONAL TEST</b> (Figure 1)				
Common-Emitter Amplifier Power Gain ( $P_{out} = 13 \text{ W}, V_{CC} = 12.5 \text{ Vdc}, f = 225 \text{ MHz}$ )	$G_{PE}$	9.0	—	dB
Collector Efficiency ( $P_{out} = 13 \text{ W}, V_{CC} = 12.5 \text{ Vdc}, f = 225 \text{ MHz}$ )	$\eta$	50	—	%

**FIGURE 2 – OUTPUT POWER versus INPUT POWER**




**FIGURE 3 – SERIES EQUIVALENT IMPEDANCE**



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