

MRF225

CASE 79-02, STYLE 1
TO-39 (TO-205AD)

HIGH FREQUENCY TRANSISTOR

NPN SILICON



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	0.25	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ (1) Derate above 25°C	P_D	3.5 0.02	Watts mW/ $^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +200	$^\circ\text{C}$

(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.

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 20\text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	18	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 20\text{ mAdc}$, $V_{BE} = 0$)	$V_{(BR)CES}$	36	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 1.0\text{ mAdc}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 15\text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	100	μAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 100\text{ mAdc}$, $V_{CE} = 5.0\text{ Vdc}$)	h_{FE}	15	150	—
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SMALL SIGNAL CHARACTERISTICS

Output Capacitance ($V_{CB} = 12\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	8.0	pF
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FUNCTIONAL TEST (FIGURE 1)

Common-Emitter Amplifier Power Gain ($P_{out} = 1.5\text{ W}$, $V_{CC} = 12.5\text{ Vdc}$, $f = 225\text{ MHz}$)	G_{PE}	9.0	—	dB
Collector Efficiency ($P_{out} = 1.5\text{ W}$, $V_{CC} = 12.5\text{ Vdc}$, $f = 225\text{ MHz}$)	η	50	—	%

FIGURE 1 – 225 MHz TEST CIRCUIT SCHEMATIC

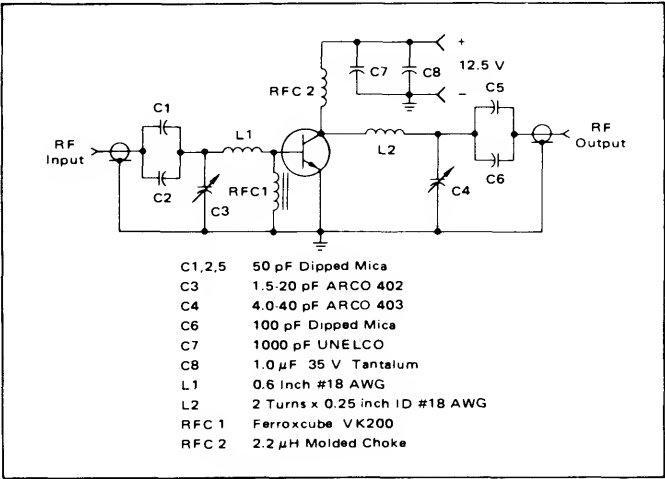


FIGURE 2 – OUTPUT POWER versus INPUT POWER

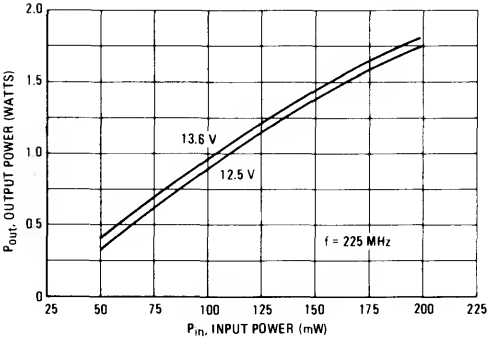


FIGURE 3 – SERIES EQUIVALENT IMPEDANCE

