

# MRF629

CASE 79-03, STYLE 5

HIGH FREQUENCY TRANSISTOR

NPN SILICON



## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CE0}$	16	Vdc
Collector-Base Voltage	$V_{CBO}$	36	Vdc
Emitter-Base Voltage	$V_{EBO}$	4.0	Vdc
Collector Current — Continuous	$I_C$	400	mAdc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	5.0 50	Watts mW/ $^\circ\text{C}$
Storage Temperature	$T_{stg}$	-65 to +200	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage ( $I_C = 50\text{ mAdc}$ , $I_B = 0$ )	$V_{(BR)CEO}$	16	—	Vdc
Collector-Emitter Breakdown Voltage ( $I_C = 50\text{ mAdc}$ , $V_{BE} = 0$ )	$V_{(BR)CES}$	36	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 1.0\text{ mAdc}$ , $I_C = 0$ )	$V_{(BR)EBO}$	4.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 15\text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	—	1.0	mAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 100\text{ mAdc}$ , $V_{CE} = 5.0\text{ Vdc}$ )	$h_{FE}$	20	200	—
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Output Capacitance ( $V_{CB} = 12.5\text{ Vdc}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{obo}$	—	15	pF
<b>FUNCTIONAL TEST (FIGURE 1)</b>				
Common-Emitter Amplifier Power Gain ( $V_{CC} = 12.5\text{ Vdc}$ , $P_{out} = 2.0\text{ W}$ , $f = 470\text{ MHz}$ )	$G_{PE}$	8.0	—	dB
Collector Efficiency ( $V_{CC} = 12.5\text{ Vdc}$ , $P_{out} = 2.0\text{ W}$ , $f = 470\text{ MHz}$ )	$\eta$	50	—	%

FIGURE 1 - 470 MHz TEST CIRCUIT SCHEMATIC

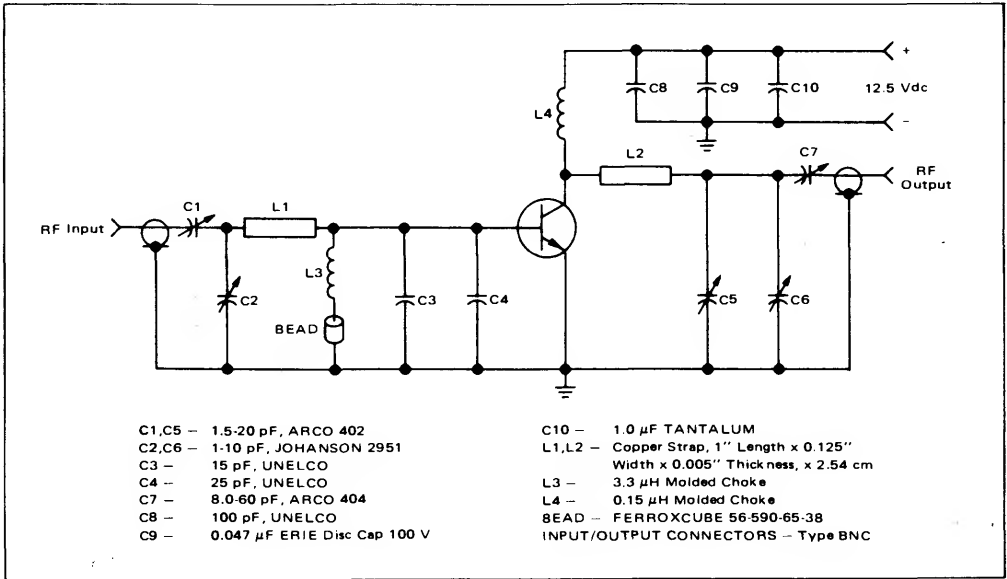


FIGURE 2 - OUTPUT POWER versus INPUT POWER

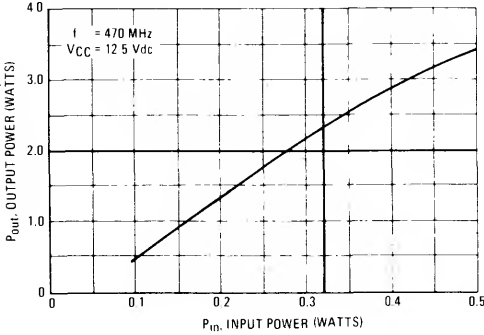


FIGURE 3 - OUTPUT POWER versus FREQUENCY

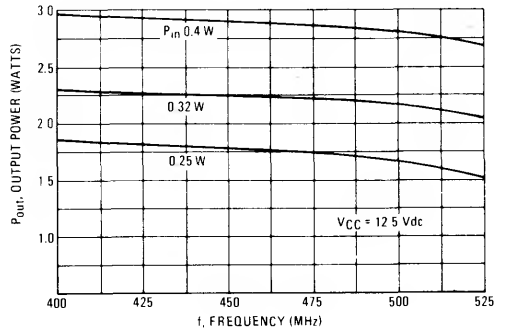


FIGURE 4 - OUTPUT POWER versus SUPPLY VOLTAGE

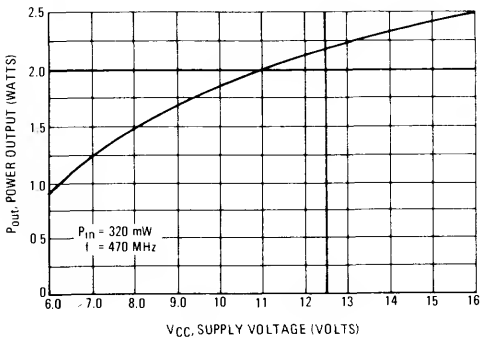


FIGURE 5 - SERIES EQUIVALENT IMPEDANCE

