

MRF207

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

HIGH FREQUENCY TRANSISTOR

NPN SILICON



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CE0}	18	Vdc
Collector-Base Voltage	V_{CBO}	36	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Collector Current — Continuous	I_C	0.4	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ (1) Derate above 25°C	P_D	3.5 20	Watts $\text{mW}/^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +200	$^\circ\text{C}$

(1) This device is designed for RF operation. The total device dissipation rating applies only when the device is operated as an RF amplifier.

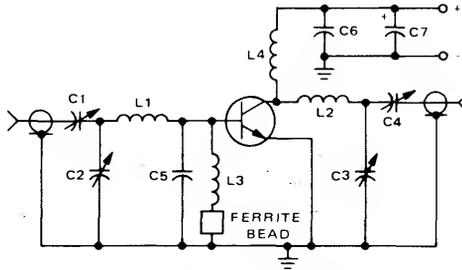
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 5.0 \text{ mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	18	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 2.0 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CBO}$	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}	—	—	0.1	mAdc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 100 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$)	h_{FE}	5.0	—	—	—
FUNCTIONAL TEST					
Common-Emitter Amplifier Power Gain ($V_{CC} = 12.5 \text{ Vdc}$, $P_{out} = 1.0 \text{ W}$, $f = 220 \text{ MHz}$)	G_{PE}	8.2	12.5	—	dB
Input Impedance ($P_{out} = 1.0 \text{ W}$, $f = 220 \text{ MHz}$)	Z_{in}	—	$10 - j11.5$	—	Ohms
Output Impedance ($P_{out} = 1.0 \text{ W}$, $f = 220 \text{ MHz}$)	Z_{out}	—	$32 - j41$	—	Ohms

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220 MHz TEST CIRCUIT

FIGURE 1 - MRF207

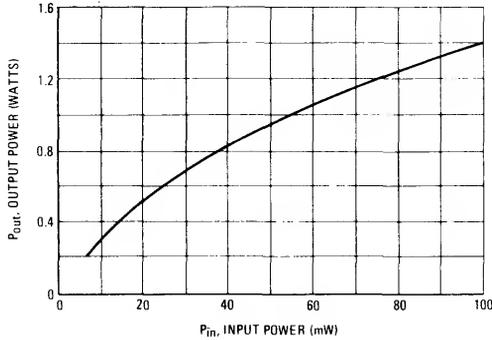


C1	2.0	50 pF	ARCO 461
C2, C4	5.0	80 pF	ARCO 462
C3	1.5	15 pF	ARCO 460
C5		40 pF	
C6		1000 pF	
C7	5.0	μF	TANTALUM
L1	1	Turn, #20 AWG, 1/4" ID	
L2	4	Turns, #20 AWG, 1/4" ID	
L3, L4		15 μH	RFC

OUTPUT POWER versus INPUT POWER

($V_{CC} = 12.5$ Vdc, $f = 220$ MHz)

FIGURE 2 - MRF207



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