

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_{CEO}	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 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 ($I_C = 5.0 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	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

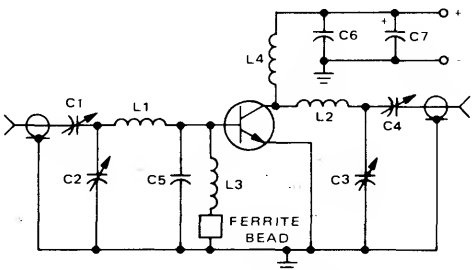
DC Current Gain ($I_C = 100 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$)	h_{FE}	5.0	—	—	—
--	----------	-----	---	---	---

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

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 μ F	TANTALUM
L1		1 Turn, #20 AWG, 1/4" ID	
L2		4 Turns, #20 AWG, 1/4" ID	
L3, L4		15 μ H RFC	

OUTPUT POWER versus INPUT POWER

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

FIGURE 2 - MRF207

