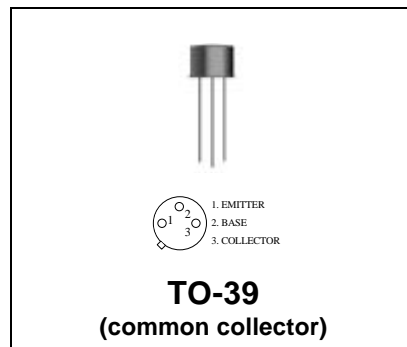


**MRF607**

**RF & MICROWAVE DISCRETE  
 LOW POWER TRANSISTORS**

Features

- 12.5V Silicon NPN, To-39 packaged VHF & UHF Transistor
- 1.75 Watt Minimum Power Output @ 12.5V, 175 MHz
- 11.5 minimum Gain @ 12.5V, 175 MHz
- 50% Efficiency @ 12.5V, 175 MHz



DESCRIPTION:

Silicon NPN transistor, designed for VHF and UHF equipment. Applications include amplifier; pre-driver, driver, and output stages.

ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	16	Vdc
V <sub>CBO</sub>	Collector-Base Voltage	36	Vdc
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	Vdc
I <sub>C</sub>	Collector Current	330	mA

Thermal Data

P <sub>D</sub>	Total Device Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	3.5 28	Watts mW/ °C
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ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

STATIC  
 (off)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV <sub>CES</sub>	Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 25 mA <sub>dc</sub> , V <sub>BE</sub> = 0 V <sub>dc</sub> )	36	-	-	V <sub>dc</sub>
BV <sub>CEO</sub>	Collector-Emitter Sustaining Voltage (I <sub>C</sub> =25 mA <sub>dc</sub> , I <sub>B</sub> =0)	16	-	-	V <sub>dc</sub>
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>E</sub> = .5 mA, I <sub>C</sub> = 0)	4.0	-	-	V <sub>dc</sub>
I <sub>CEO</sub>	Collector Cutoff Current (V <sub>CE</sub> = 10 V <sub>dc</sub> , I <sub>B</sub> = 0)	-	-	.3	mA

(on)

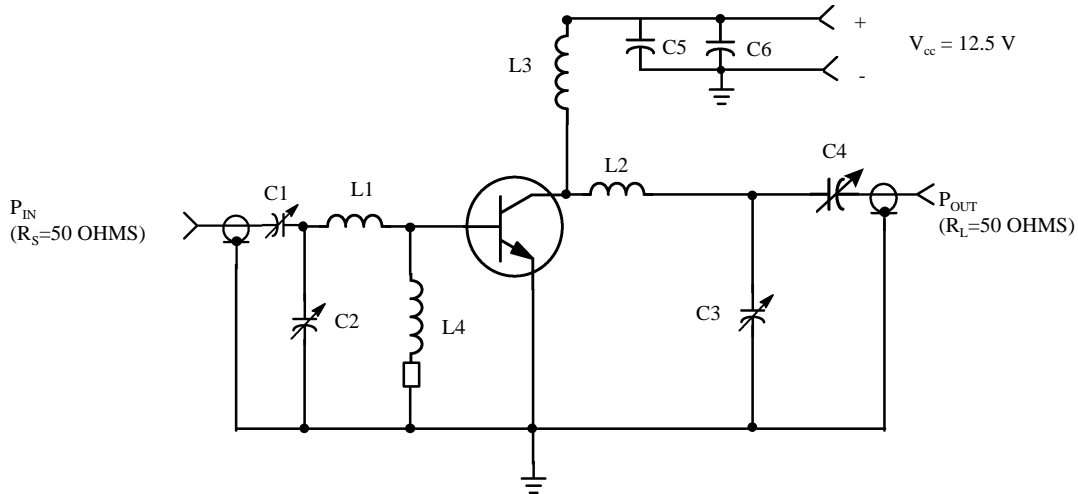
HFE	DC Current Gain (I <sub>C</sub> = 50 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )	20	-	150	-
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DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
COB	Output Capacitance (V <sub>CB</sub> = 12 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 1.0 MHz)	-	-	15	pF

FUNCTIONAL

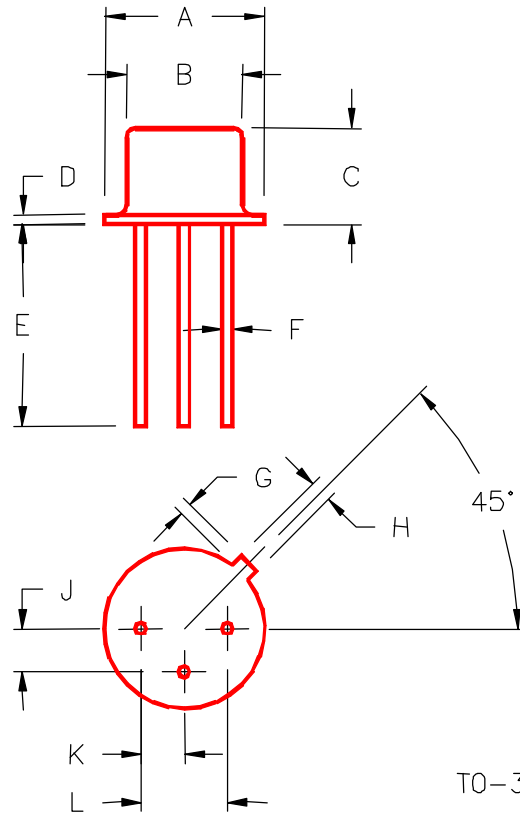
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
G <sub>PE</sub>	Power Gain	Test Circuit-Figure 1 P <sub>out</sub> = 1.75W, V <sub>CE</sub> = 12.5V <sub>dc</sub> f = 175 MHz	11.5	-	-	dB
η <sub>c</sub>	Collector Efficiency	Test Circuit-Figure 1 P <sub>out</sub> = 1.75W, V <sub>CE</sub> = 12.5V <sub>dc</sub> f = 175 MHz	50	-	-	%



**Figure 1 - 175 MHz RF AMPLIFIER CIRCUIT FOR  $G_{PE}$ ,  
 AND EFFICIENCY SPECIFICATIONS.**

- |        |                      |    |   |
|--------|----------------------|----|---|
| C1     | 2.7-15 pF, ARCO 461  | L1 | 1 TURN #20 AWG, 3/8" I.D.   |
| C2     | 9.0-180 pF, ARCO 463 | L2 | 3 TURNS #20 AWG, 3/8" I.D.  |
| C3, C4 | 5.0-80 pF ARCO 462   | L3 | 0.22 $\mu$ H MOLDED CHOKE   |
| C5     | 1000 pF UNELCO       | L4 | 0.15 $\mu$ H MOLDED CHOKE WITH<br>TANTALUM FERROXCUBE 56-590-65-3B<br>BEAD ON GROUND LEAD |
| C6     | 5 $\mu$ F, 25 Vdc,   |    |   |

PACKAGE STYLE M246



T0-39

	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.350/8,89	.370/9,40	J	.095/2,41	.105/2,67
B	.315/8,00	.335/8,51	K	.095/2,41	.105/2,67
C	.240/6,10	.260/6,60	L	.190/4,83	.210/5,33
D	.015/0,38	.045/1,14			
E	.500/12,70				
F	.016/0,41	.019/0,48			
G	.029/0,74	.040/1,02			
H	.028/0,71	.034/0,86			