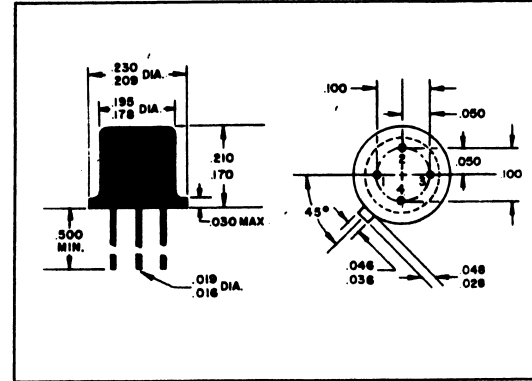


**PNP SILICON PLANEX\*  
TRANSISTOR**

**2N4080**

2N4080 is a silicon PNP PLANEX\* transistor, designed for applications in VHF-UHF oscillators and amplifiers, or in very high speed non-saturating switches. It is manufactured in accordance with Raytheon's MARK XII Reliability Program.†



**MECHANICAL DATA**

<b>CASE:</b>	<b>TERMINAL CONNECTIONS:</b>		
JEDEC TO-18	Lead 1 Emitter	Lead 3 Collector	
with four leads	Lead 2 Base	Lead 4 Connected to case	

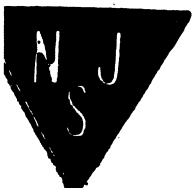
**ELECTRICAL DATA**

**ABSOLUTE MAXIMUM RATINGS:**

Collector to Base Voltage $V_{CBO}$	.....	-20 volts
Collector to Emitter Voltage $V_{CEO}$	.....	-15 volts
Emitter to Base Voltage $V_{EBO}$	.....	-3.0 volts
Total Device Dissipation		
@ Case Temperature 25° C	.....	0.30 watts
@ Case Temperature 100° C	.....	0.17 watts
@ Free Air Temperature 25° C	.....	0.20 watts
Junction Temperature (Operating)	.....	-65° C to +200° C
Storage Temperature	.....	-65° C to +200° C

**ELECTRICAL CHARACTERISTICS: @25° C (unless otherwise noted)**

	SYM.	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Collector to Base Breakdown Voltage	$BV_{CBO}$	$I_C=1.0 \mu A$	-20	.....	.....	volts
Collector to Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=3.0 mA$	-15	.....	.....	volts
Emitter to Base Breakdown Voltage	$BV_{EBO}$	$I_E=10 \mu A$	-3.0	.....	.....	volts
Collector Cutoff Current	$I_{CBO1}$	$V_{CB}=-15 V$	.....	.....	10	nA
Collector Cutoff Current	$I_{CBO2}$	$V_{CB}=-15 V, T_A=+150^\circ C$	.....	.....	1.0	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=-1.0 V, I_C=3.0 mA$	20	.....	.....	.....
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10 mA, I_B=1.0 mA$	.....	.....	-0.4	volts
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10 mA, I_B=1.0 mA$	.....	.....	-1.0	volts
High Frequency Small Signal Current Gain	$h_{fe}$	$V_{CE}=-15 V, I_C=4.0 mA,$ $f=200 mc$	5.0	7.0	.....	.....
Collector Capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0 mA,$ $f=140 kc$	.....	.....	1.7	pf
Collector Capacitance	$C_{ob}$	$V_{CB}=0 V, I_E=0 mA,$ $f=140 kc$	.....	.....	3.0	pf
Input Capacitance	$C_{ib}$	$V_{EB}=-0.5 V, I_C=0 mA$	.....	.....	2.0	pf
Amplifier Power Gain	$G_{PE}$	Zero Signal $V_{CC}=-5 V$ Zero Signal $I_C=1.0 mA$ $R_G=50\Omega, R_L=50\Omega, f=200 mc$ Lead 4 connected to ground. (See Fig. 1)	15	.....	.....	db
Oscillator Power Output	$P_o$	$V_{CC}=-12 V, I_C=10 mA,$ $f=500 mc$ (See Fig. 2)	30	.....	.....	Mw
Collector Efficiency		$V_{CB}=-12 V, I_C=10 mA,$ $f=500 mc$	25	.....	.....	%
Noise Figure	NF	$V_{CE}=-5.0 V, I_C=1.0 mA,$ $R_G=50\Omega, f=200 mc$	.....	.....	6.0	db



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

# PNP SILICON PLANEX\* TRANSISTOR 2N4080

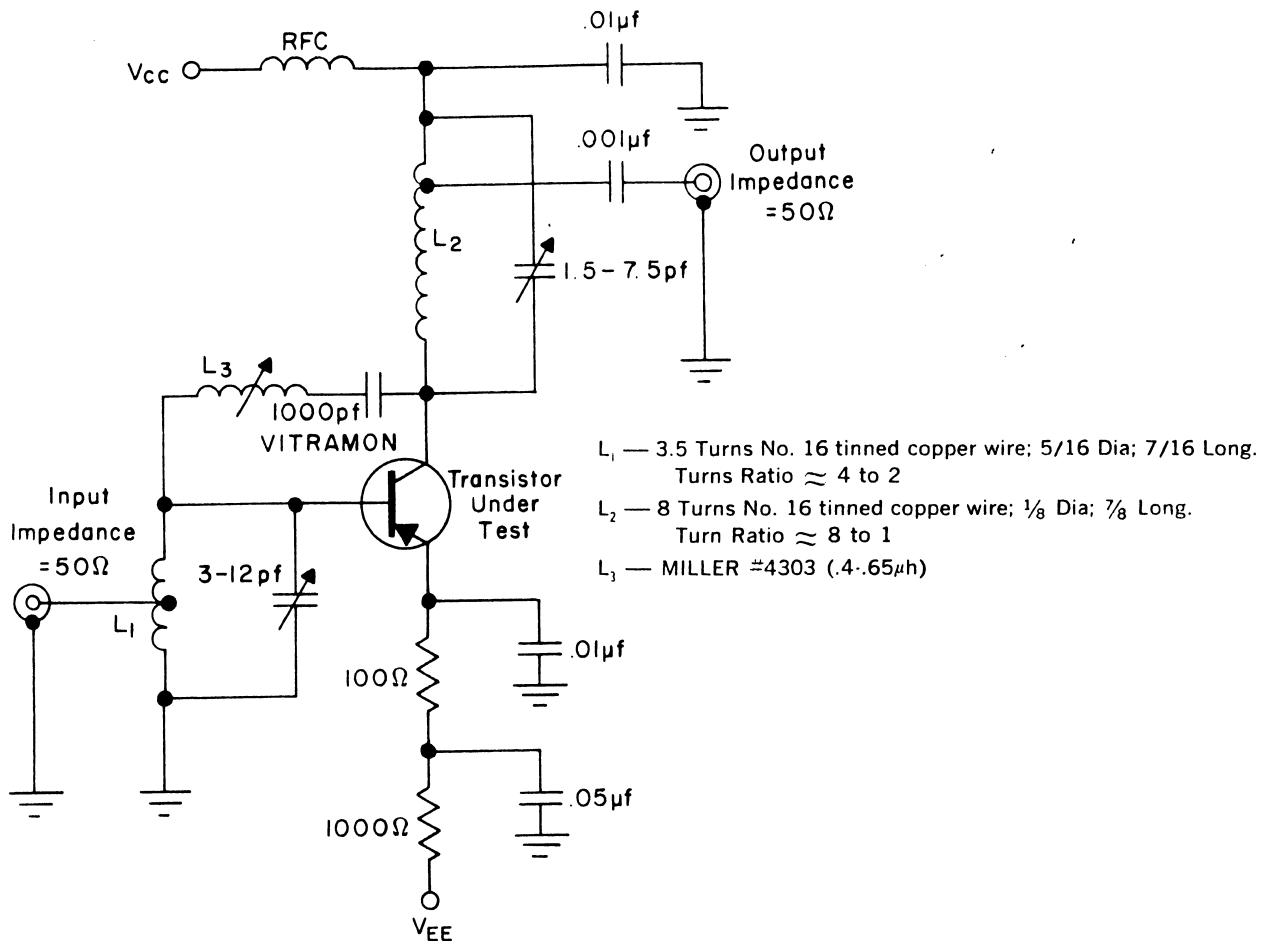


FIGURE 1

## NEUTRALIZED 200 MC POWER GAIN AMPLIFIER TEST CIRCUIT

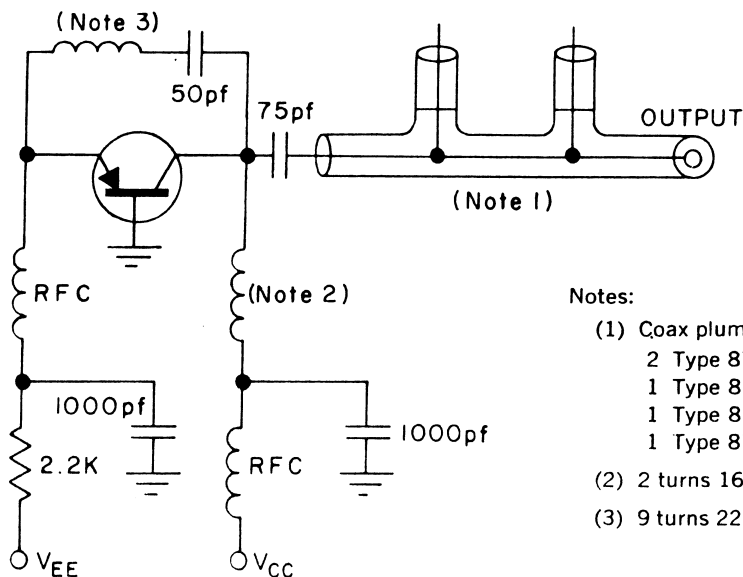


FIGURE 2