

FOR PHASE LOCKED LOOP FREQUENCY
SYNTHESIZER.

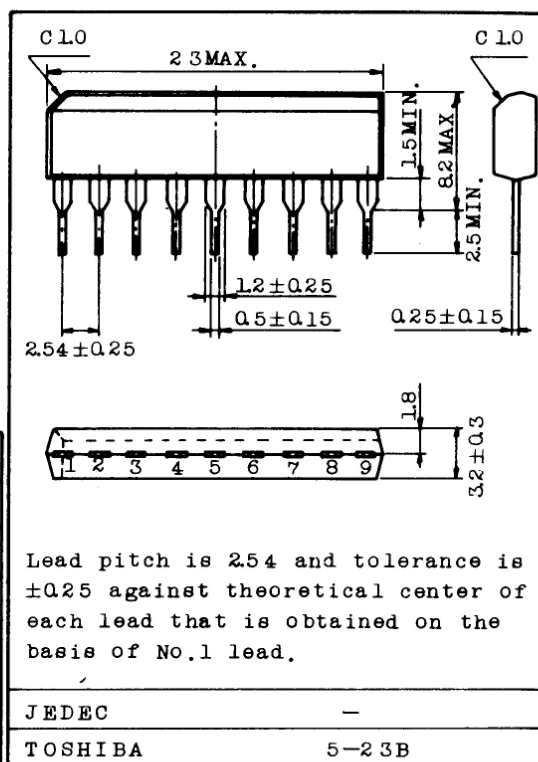
- . Doubly Balanced Mixer
- . Emitter Follower Circuit
- . Differential Amplifier
- . Wide Operating Supply Voltage Range : $V_{CC}=6 \sim 10V$

MAXIMUM RATINGS ($T_a=25^\circ C$)

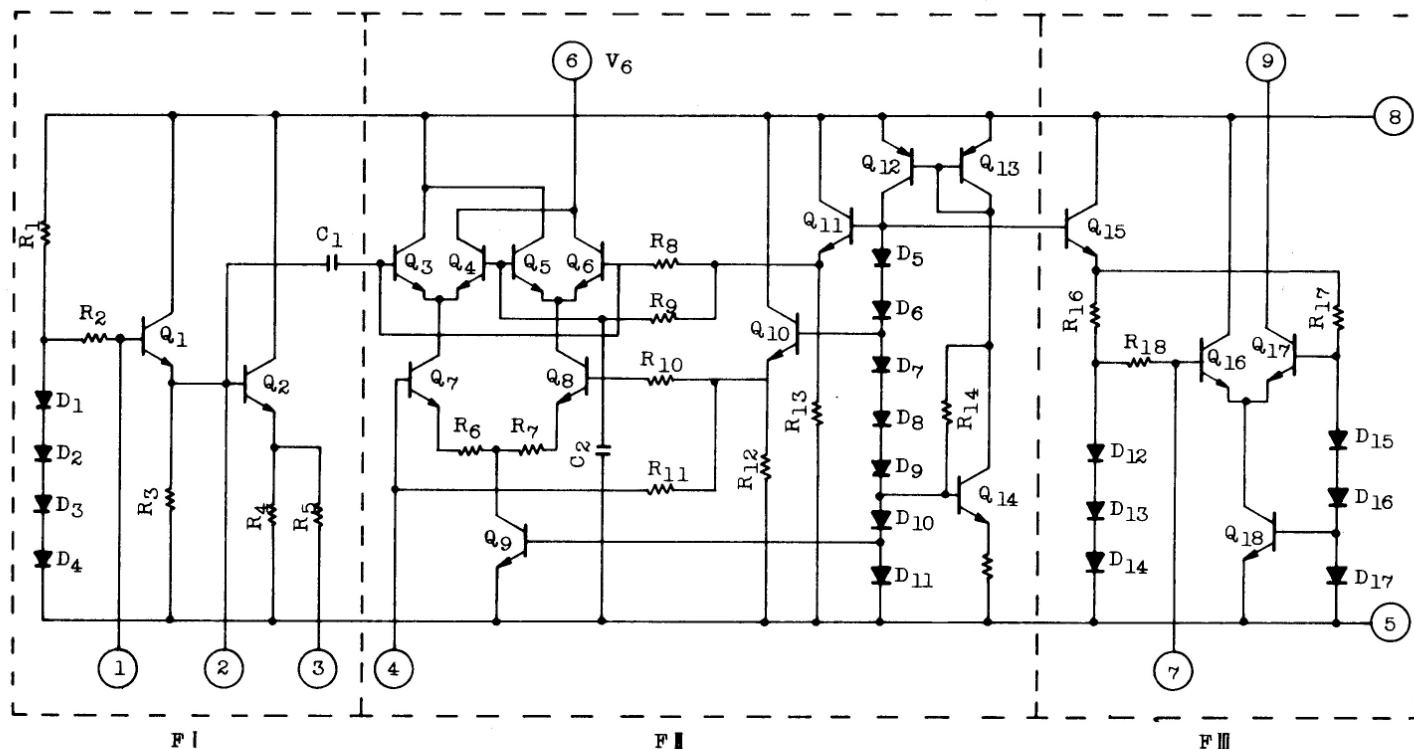
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	10	V
6 Pin Supply Voltage	V_6	14	V
1 Pin Supply Voltage	V_9	20	V
Power Dissipation (Note)	P_D	600	mW
Operating Temperature	T_{opr}	$-30 \sim 75$	$^\circ C$
Storage Temperature	T_{stg}	$-55 \sim 150$	$^\circ C$

Note : Derated above $T_a=25^\circ C$ in the proportion of $4.8mW/^\circ C$.

Unit in mm



EQUIVALENT CIRCUIT





INTEGRATED CIRCUIT

TA7310P

TECHNICAL DATA

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current		I _{CC}	1	V _{CC} =7V	21.5	-	38.0	mA
6 Pin Supply Current		I ₆	1	V _{CC} =7V	3.0	-	5.5	mA
9 Pin Maximum Supply Current		I ₉ (Max)	1	V _{CC} =7V, 7pin GND	6.0	-	12.0	mA
Output Power		P _o	2	V _{CC} =7V, V ₉ =12V f=26.965MHz	6.0	10	-	mW
Differential Amplifier Input Impedance	7 Pin Parallel Input Resistance	R _{ip7}	10	V _{CC} =7V, f=27MHz	-	1.0	-	kΩ
	7 Pin Parallel Input Capacitance	C _{ip7}			-	6.5	-	pF
Differential Amplifier Output Impedance	9 Pin Parallel Output Resistance	R _{op9}	11	V _{CC} =7V, V ₉ =12V, f=27MHz	-	4.0	-	kΩ
	9 Pin Parallel Output Capacitance	C _{op9}			-	4.0	-	pF
Doubly Balanced Mixer Input Impedance	4 Pin Parallel Input Resistance	R _{ip4}	12	V _{CC} =7V, f=10MHz	-	1.5	-	kΩ
	4 Pin Parallel Input Capacitance	C _{ip4}			-	4.3	-	pF
Doubly Balanced Mixer Output Impedance	6 Pin Parallel Output Resistance	R _{op6}	13	V _{CC} =7V, f=27MHz	-	3.5	-	kΩ
	6 Pin Parallel Output Capacitance	C _{op6}			-	6.0	-	pF



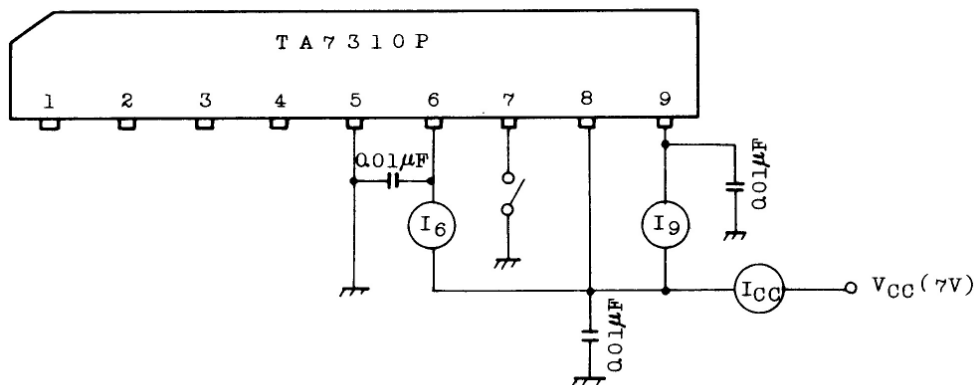
INTEGRATED CIRCUIT

TA7310P

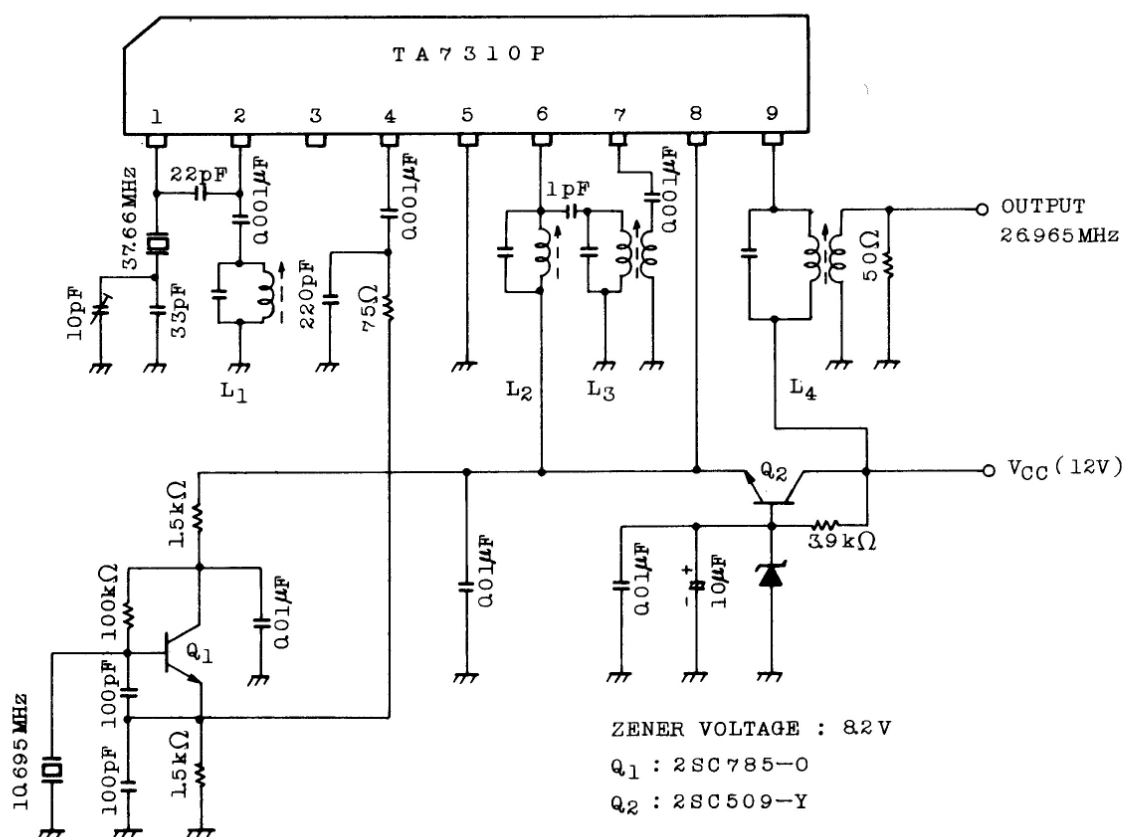
TECHNICAL DATA

TEST CIRCUIT

1. I_{CC} , I_6 , I_9 (Max.)



2. P_O



COIL DATA (10mm □)

TABLE 1

		L1	L2	L3	L4
Primary	TURNS	3T	6T	6T	12T
	L	0.6μH	0.3μH	0.3μH	1.2μH
	C	56pF	100pF	100pF	30pF
Secondary	TURNS	-	-	2T	2T

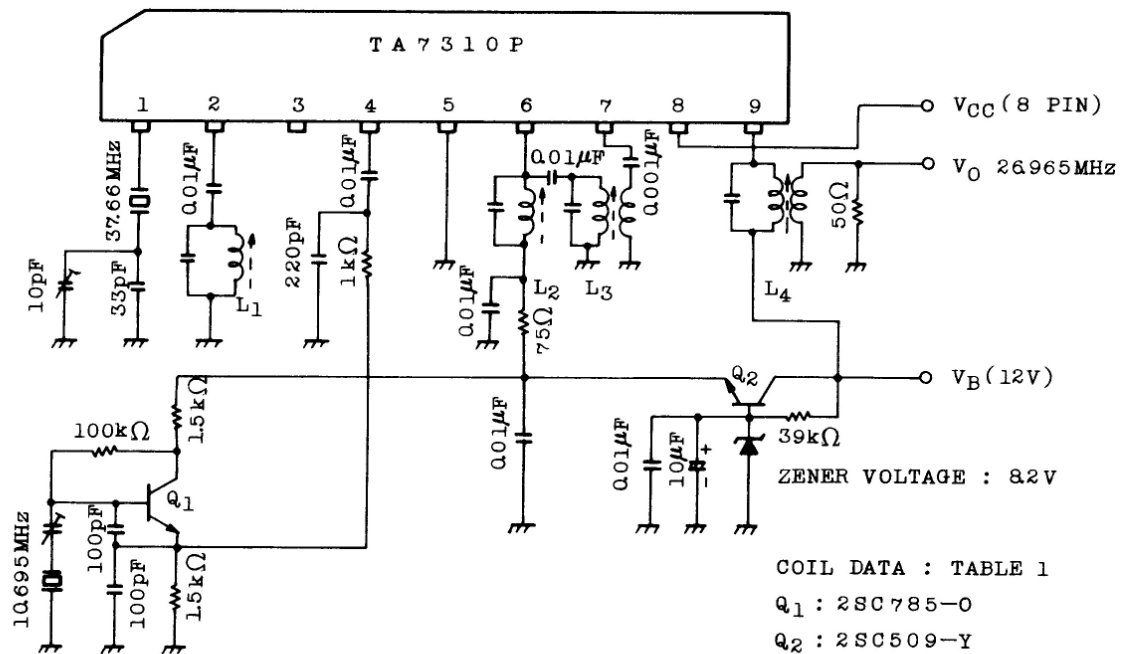


INTEGRATED CIRCUIT

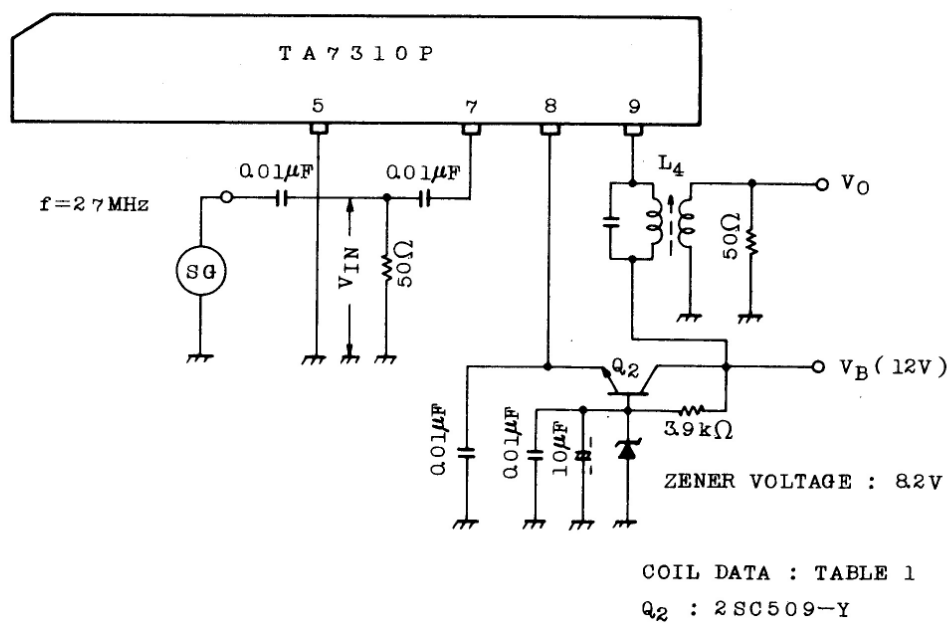
TECHNICAL DATA

TA7310P

3. $V_O - V_{CC}(8 \text{ PIN})$



4. $V_O - V_{IN}$



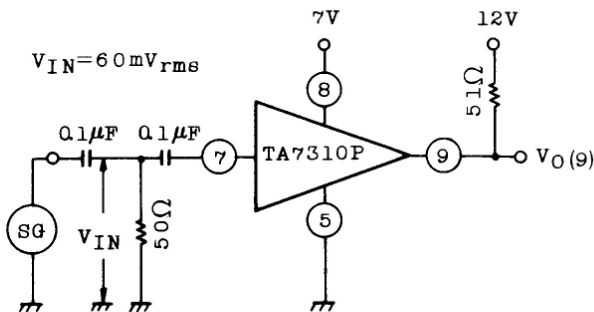


INTEGRATED CIRCUIT

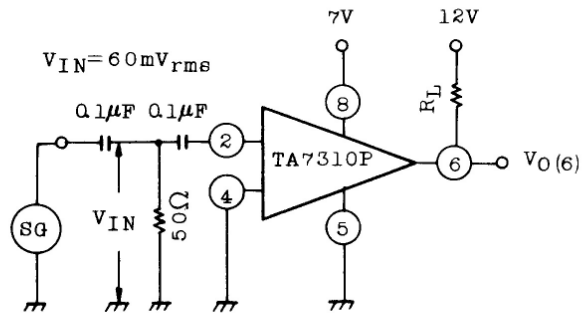
TECHNICAL DATA

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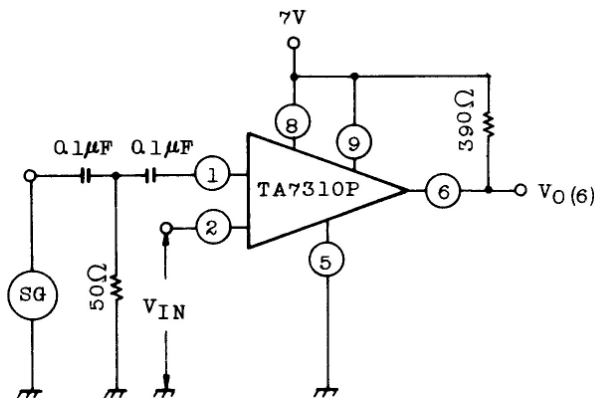
5. $V_O(9) - f$



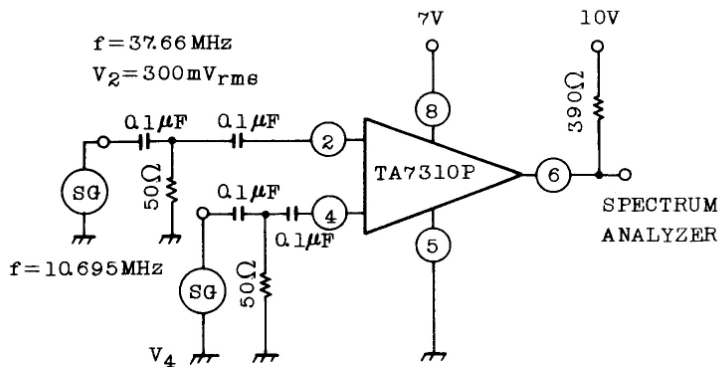
6. $V_O(6) - f$



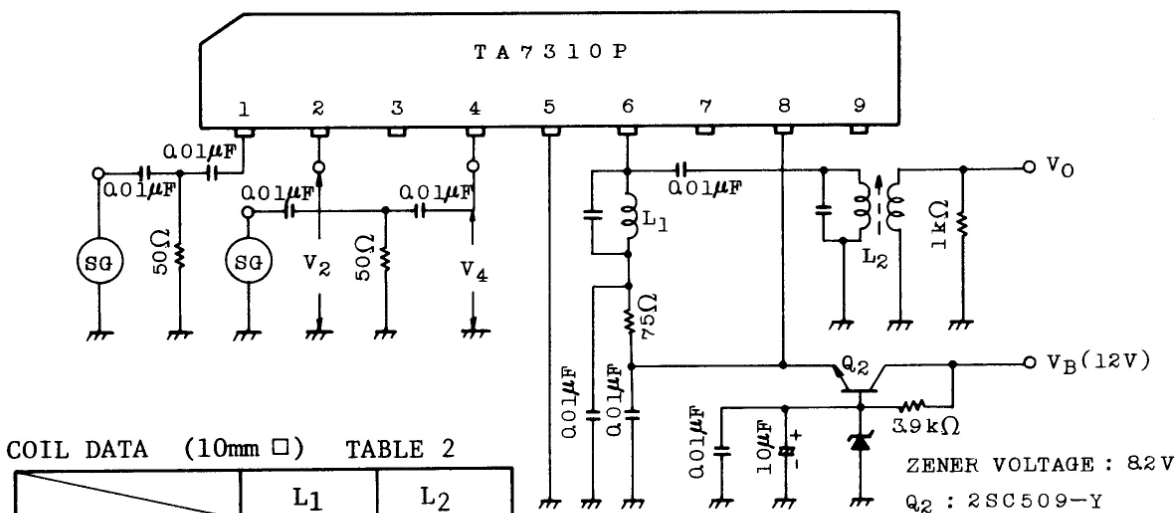
7. CARRIER FEED THROUGH ($V_O(6) - f$)



8. SIDE BAND HARMONIC SUPPRESSION - LOCAL OSC. LEVEL



9. $V_O - V_4$



COIL DATA (10mm □) TABLE 2

	TURNS	L1	L2
		6T	6T
		0.3μH	0.3μH
Primary	L	0.3μH	0.3μH
	C	100pF	100pF
Secondary	TURNS	-	2T

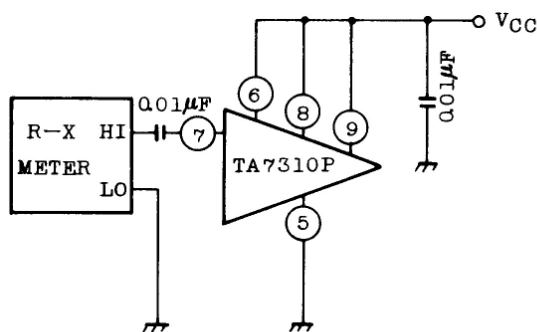


INTEGRATED CIRCUIT

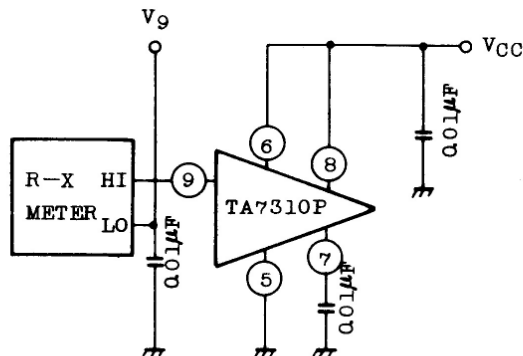
TECHNICAL DATA

TA7310P

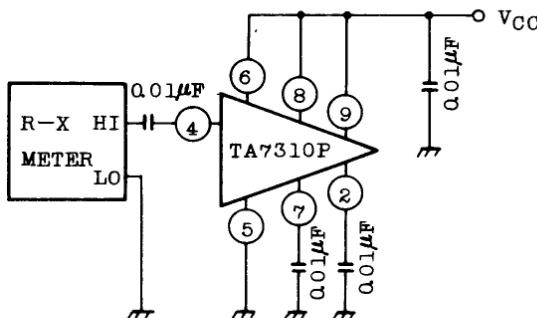
10. Rip7, Cip7



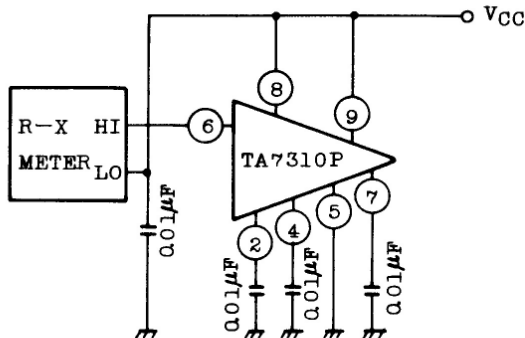
11. Rop9, Cop9



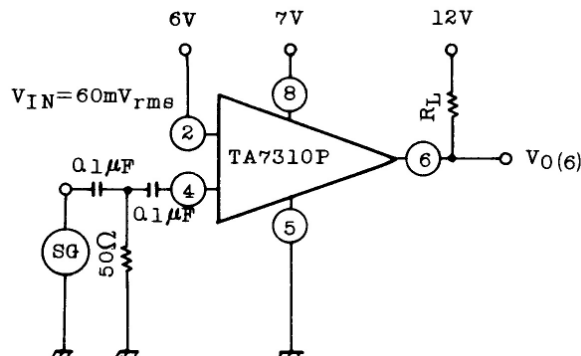
12. Rip4, Cip4



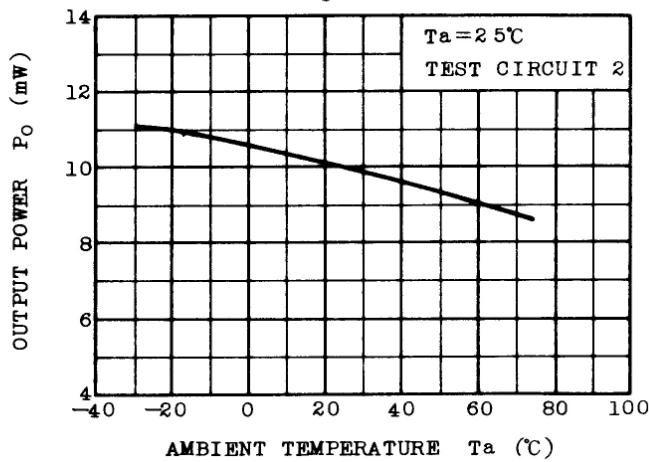
13. Rop6, Cop6



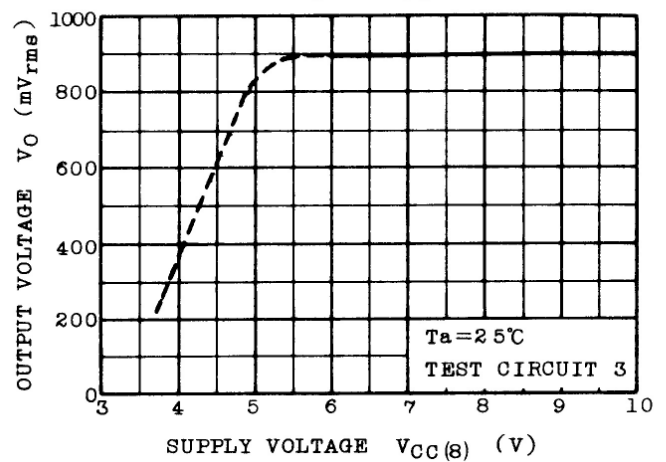
14. V_O(6) - f



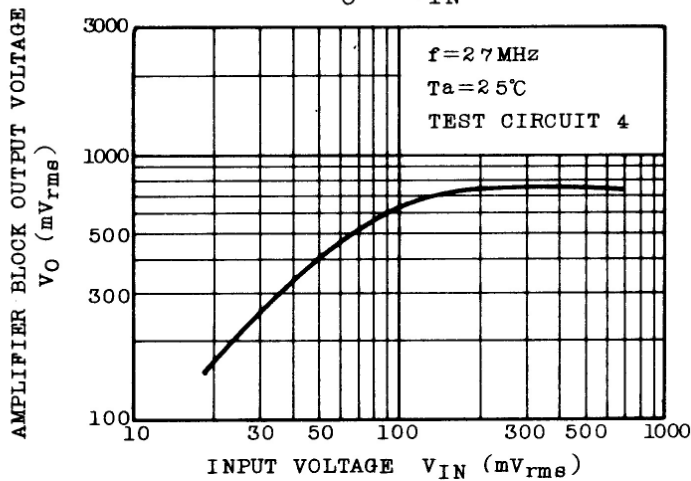
$P_O - T_a$



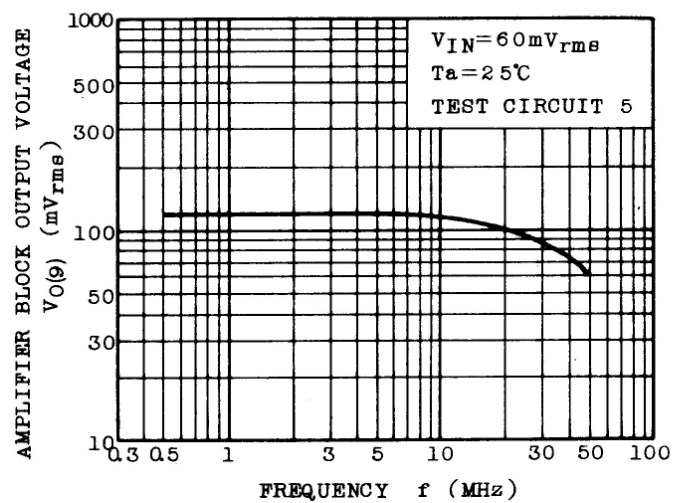
$V_O - V_{CC}$



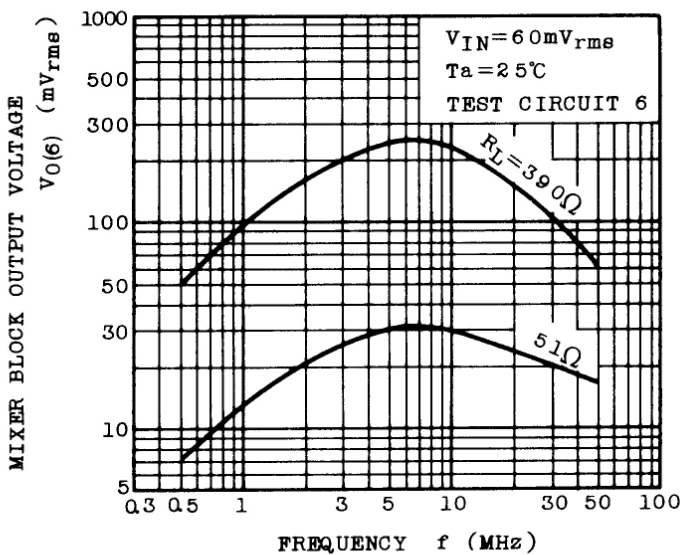
$V_O - V_{IN}$



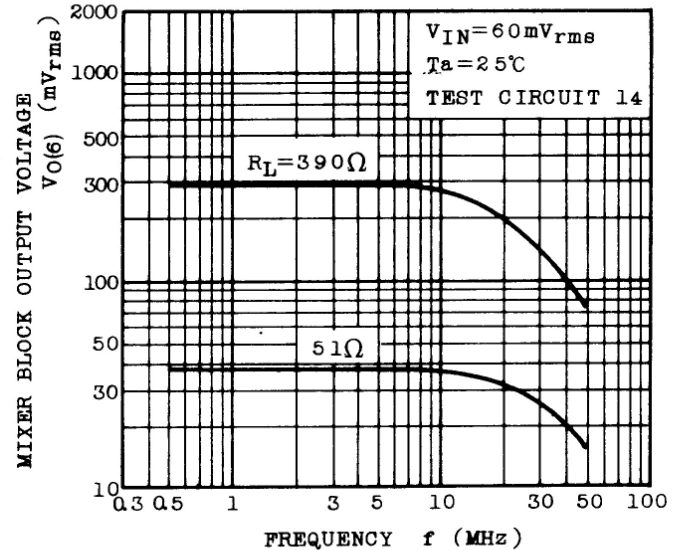
$V_O(9) - f$



$V_O(6) - f$



$V_O(6) - f$

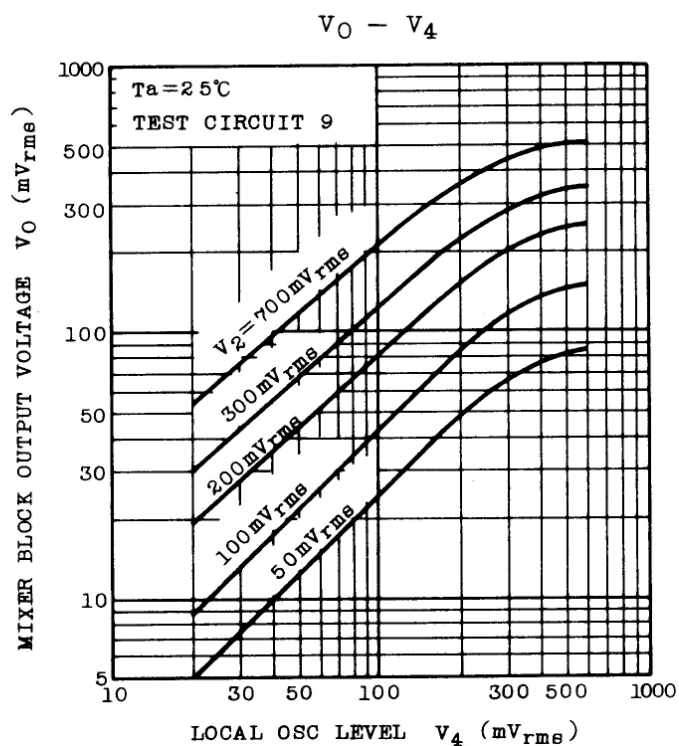
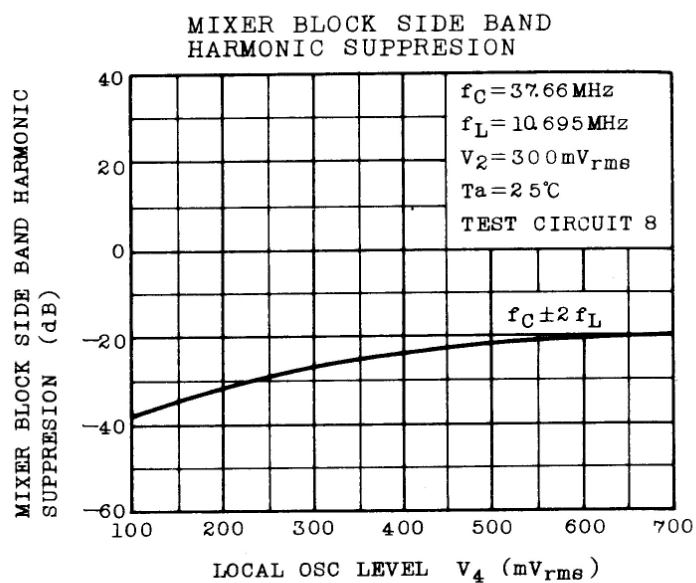
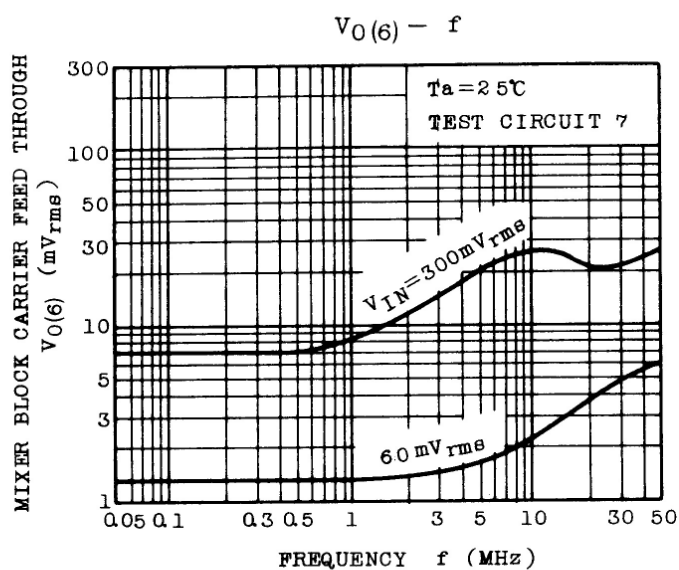




INTEGRATED CIRCUIT

TECHNICAL DATA

TA7310P



APPLICATION BLOCK DIAGRAM

TA7310P is designed especially for use in CB transceiver in conjunction with TA9106BP frequency synthesizer.

The functions incorporated are emitter follower circuit (F I), doubly ballanced mixer (F II) and differential amplifier (F III).

Emitter follower circuit may be used as reference oscillator or VCO.

Differential amplifier may be used wide band RF amplifier.

