

TA7616P

T-77-05-05

CAR RADIO AM TUNER ONE CHIP AM SYSTEM

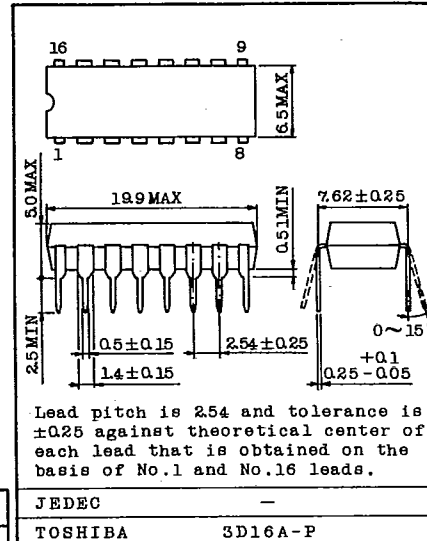
- . Stable Operation at High Input Signal .
- . Wide Operating Supply Voltage Range:
 $V_{CC}=7 \sim 15V$, Recommend $V_{CC}=9V$
- . Small Noise at Detune.
- . AM RF, AM MIX. and AM OSC Amplifiers.
- . AM IF, Detector and AGC Circuits.

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

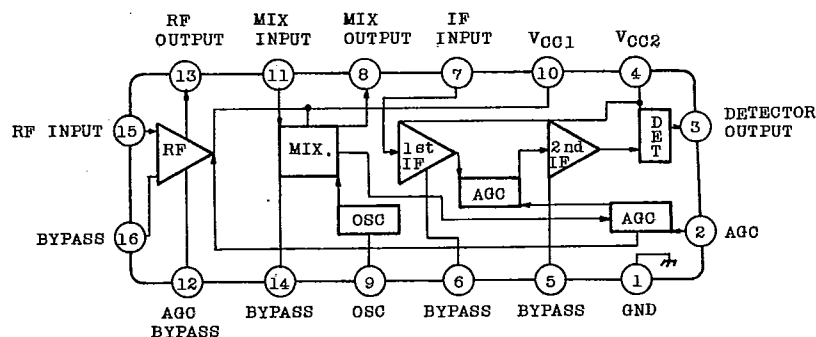
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	16	V
Power Dissipation (Note)	P_D	750	mW
Operating Temperature	T_{opr}	$-30 \sim 75$	$^{\circ}C$
Storage Temperature	T_{stg}	$-55 \sim 150$	$^{\circ}C$

Note: Derated above $T_a=25^{\circ}C$ in the proportion of $6mW/^{\circ}C$.

Unit in mm



BLOCK AND TERMINAL DIAGRAMS



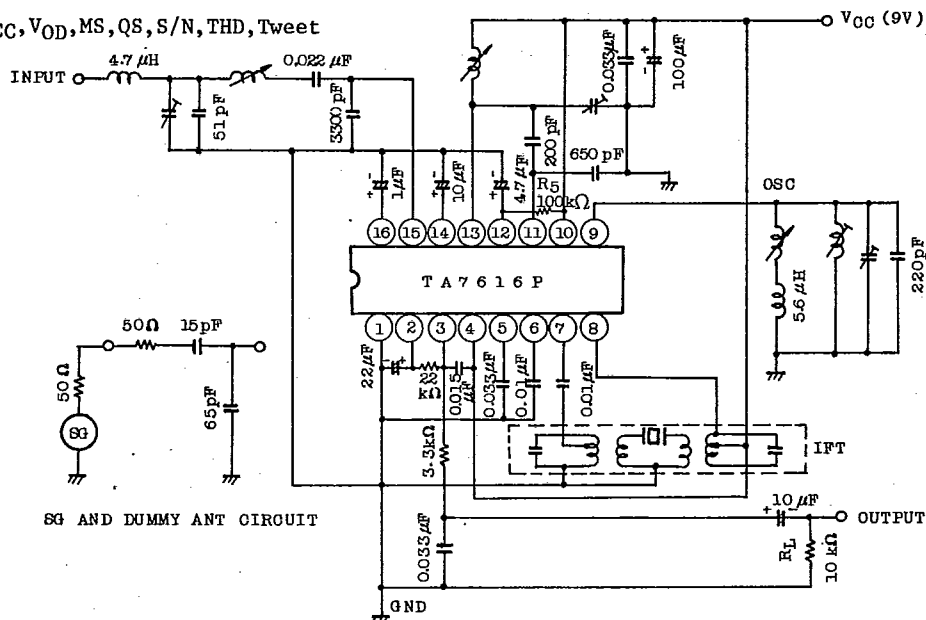
AUDIO LINEAR IC

ELECTRICAL CHARACTERISTICS

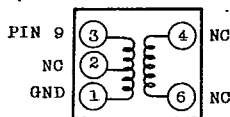
(Unless otherwise specified, $V_{CC}=9V$, $f_S=1MHz$, $f_M=400Hz$, $Mod=30\%$, $f_F=455kHz$, $T_a=25^{\circ}C$)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current		I_{CC}	1	-	9	13	20	mA
Recovered Output Voltage		V_{OD}	1	$V_{IN}=74dB\mu V$	55	84	110	mV _{rms}
Maximum Sensitivity		MS	1	$V_{OD}=20mV_{rms}$	-	9	-	dB μV
Quieting Sensitivity		QS	1	$S/N=20dB$	-	24	30	dB μV
Signal to Noise Ratio		S/N	1	$V_{IN}=74dB\mu V$	46	52.5	-	dB
Total Harmonic Distortion		THD(1)	1	$V_{IN}=74dB\mu V$	-	0.3	3	%
		THD(2)	1	$V_{IN}=74dB\mu V$ Mod=80%	-	0.6	-	
		THD(3)	1	$V_{IN}=120dB\mu V$	-	0.5	-	
Tweet		Tweet	1	$V_{IN}=74dB\mu V$ Max. Point	2IF	-	-35	dB
					3IF	-	-40	
Pin 15 Input Impedance	Parallel Input Resistance	R_{ip15}	2	$f=1000kHz$	-	6.6	-	k Ω
	Parallel Input Capacitance	C_{ip15}			-	3	-	pF
Pin 13 Output Impedance	Parallel Output Resistance	R_{op13}	3	$f=1000kHz$	-	100	-	k Ω
	Parallel Output Capacitance	C_{op13}			-	1.4	-	pF
Pin 11 Input Impedance	Parallel Input Resistance	R_{ip11}	4	$f=1000kHz$	-	2.2	-	k Ω
	Parallel Input Capacitance	C_{ip11}			-	7.5	-	pF
Pin 8 Output Impedance	Parallel Output Resistance	R_{op8}	5	$f=455kHz$	-	100	-	k Ω
	Parallel Output Capacitance	C_{op8}			-	3.5	-	pF
Pin 7 Input Impedance	Parallel Input Resistance	R_{ip7}	6	$f=455kHz$	-	3.5	-	k Ω
	Parallel Input Capacitance	C_{ip7}			-	8	-	pF

1. $I_{CC}, V_{OD}, MS, QS, S/N, THD, \text{Tweet}$



1. OSC COIL " L"

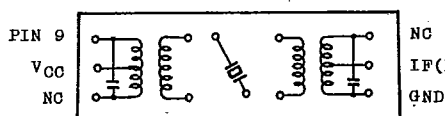


L = 220 μ H STANDARD		
Q $\geq$ 80 at 796 kHz		
① ~ ② 10 T	① ~ ③ 98 T	④ ~ ⑥ 39 T

DENKEN Co., 4691 OR EQUIVALENT

TOKO Co.,
CFT-455A OR EQUIVALENT IFT

IF(PIN 7) CENTER FREQUENCY 455 ± 3.5 KHz



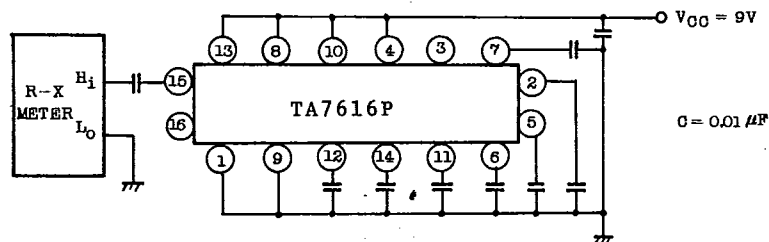
BOTTOM VIEW

3. AM TUNNER COIL

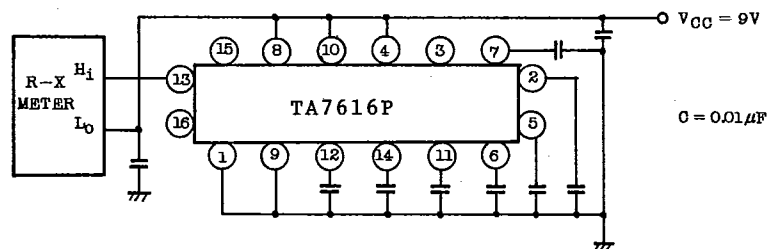
MITSUMI Co., CMM ZT-02 OR EQUIVALENT TUNNER COIL.

TUNING FREQUENCY RANGE 520 ~ 1660 $\pm$ 40 KHz

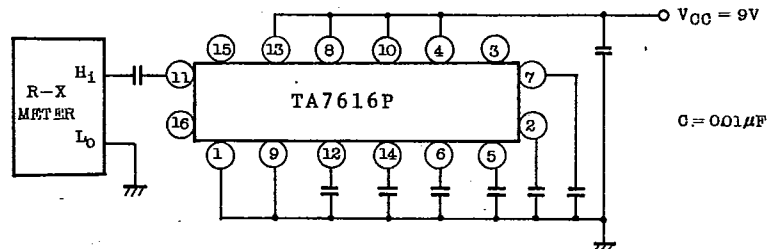
2. R_{ip15} , C_{ip15}



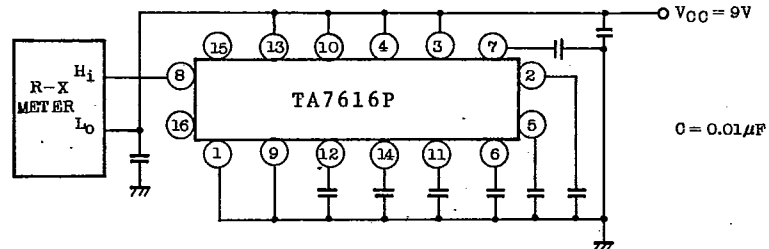
3. R_{op13} , C_{op13}



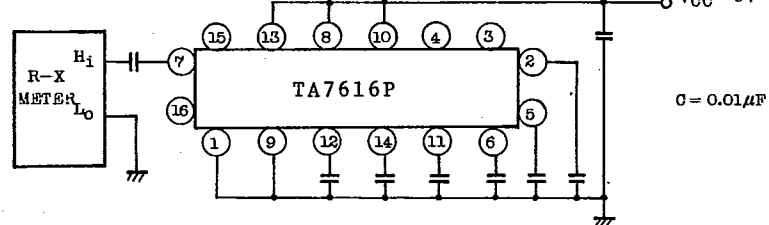
4. R_{ip11} , C_{ip11}



5. R_{op8} , C_{op8}

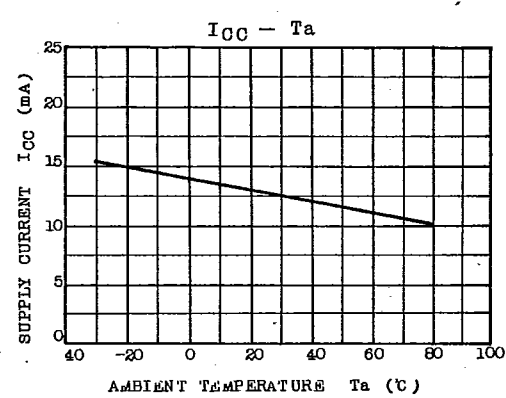
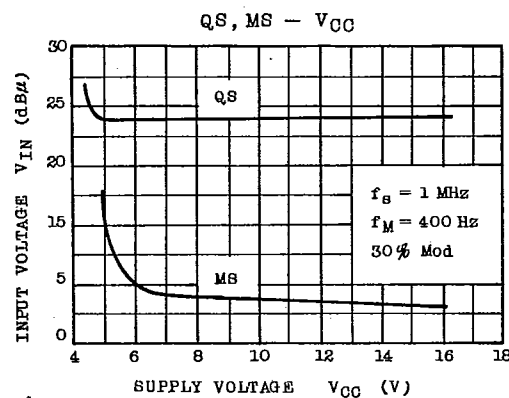
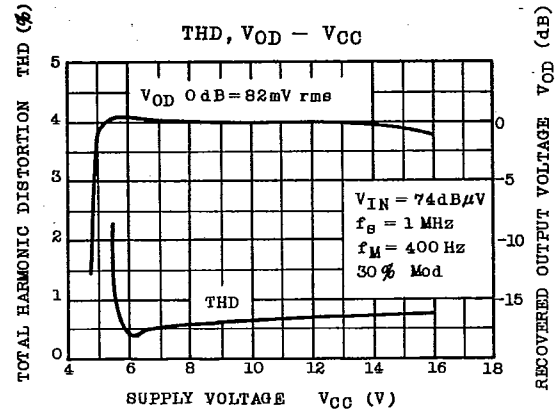
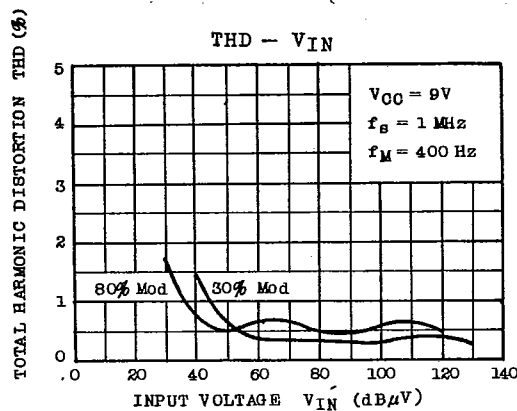
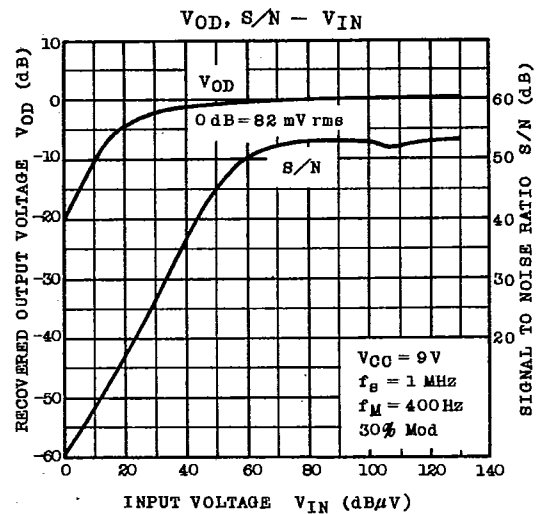
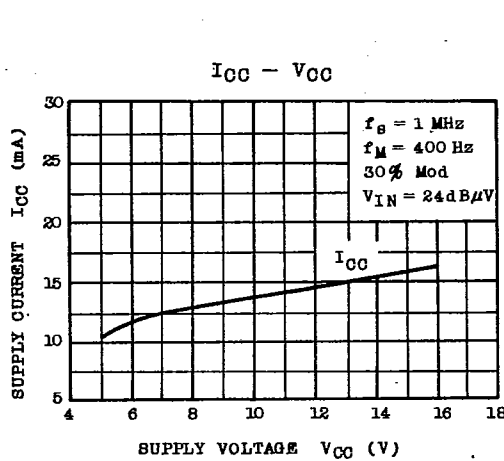


6. R_{ip7} , C_{ip7}

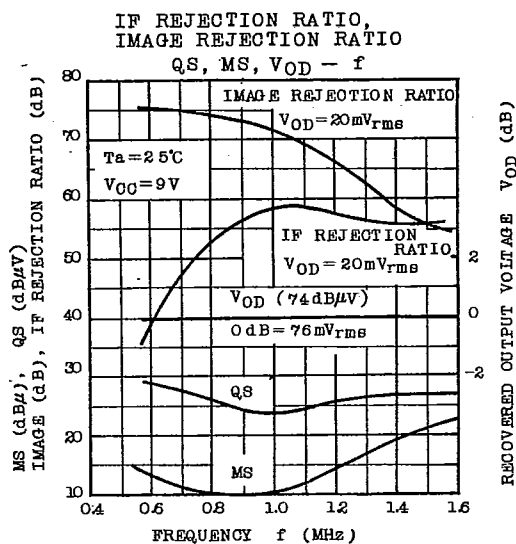
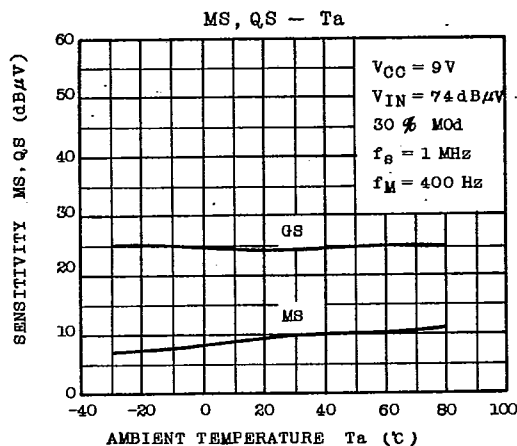
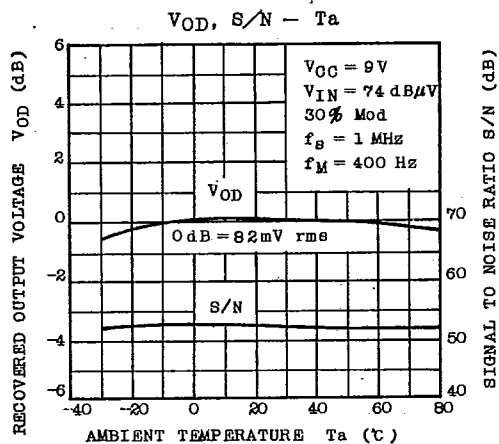


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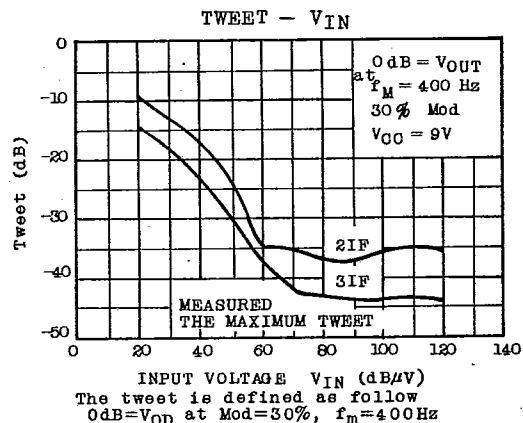
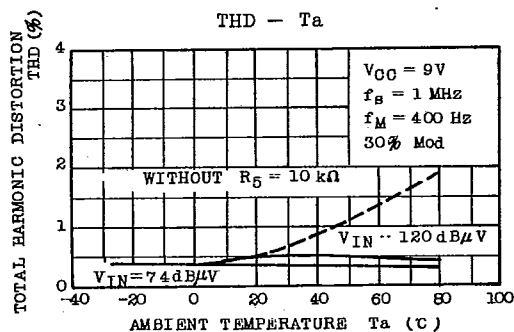
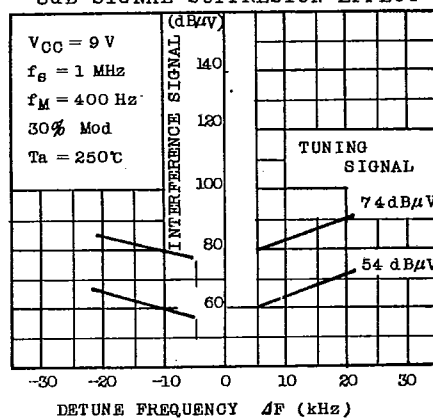
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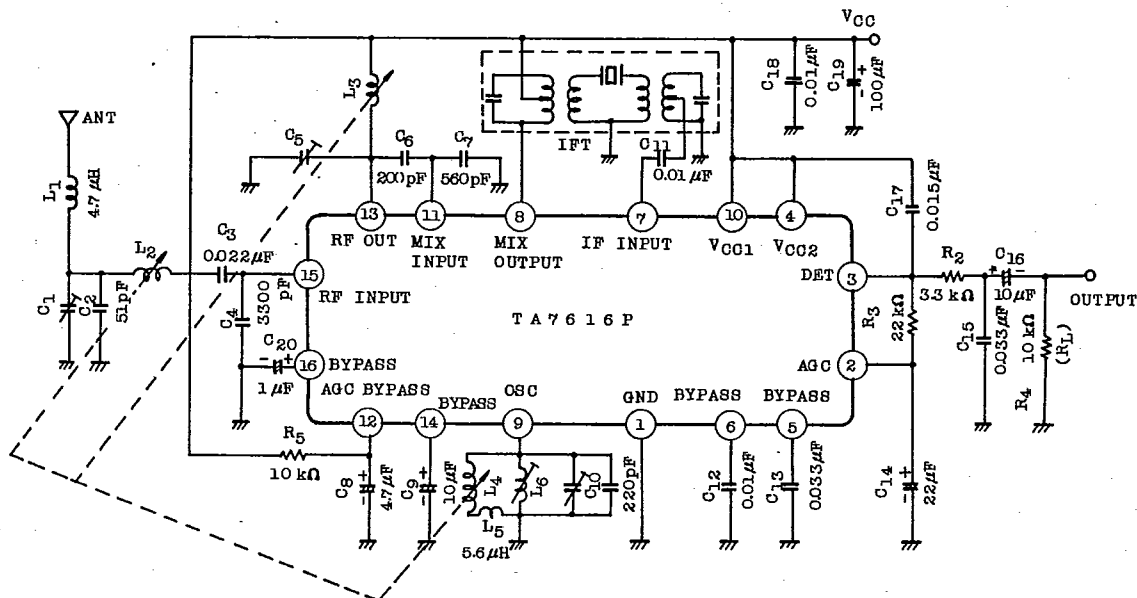
**2 SIGNAL CHARACTERISTIC
-3dB SIGNAL SUPPRESSION EFFECT**



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APPLICATION CIRCUIT



(NOTE) IFT : TOKO OFT-455A

NOTE :

1. To avoid the instability (especially tweet problem), capacitor C₁₇ must be placed near by 3 pin and 4 pin.
2. Inductor L₁ is the noise radiation suppressor from antenna.
3. Capacitor C₆ and C₇ must be selected so that the injection level of the mixer stage will be optimum value.
4. AGC by-passing capacitor C₁₄ and C₈ determine AGC response speed.
So, large value will cause slow response and too small value will cause poor distortion characteristics at low frequency.
5. Resistor R₅ assures low distortion characteristics (THD = 1%) at all operation temperature range.

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