

# HA1199P

## Advance Information

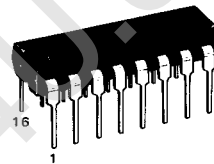
### AM SUBSYSTEM FOR CAR RADIO

The HA1199P is a complete one-chip radio subsystem for car radio applications. Automatic dynamic range magnitude control at the RF stage provides good high input signal-handling characteristics (THD = 1% typ at 130 dB $\mu$ ).

- High AGC FOM — 63 dB Typ
- Good Usable Sensitivity — 23 dB $\mu$  Typ
- Low Distortion — 0.4% Typ at 74 dB $\mu$
- Supply Voltage Range — 10.8 to 15.6 Volts

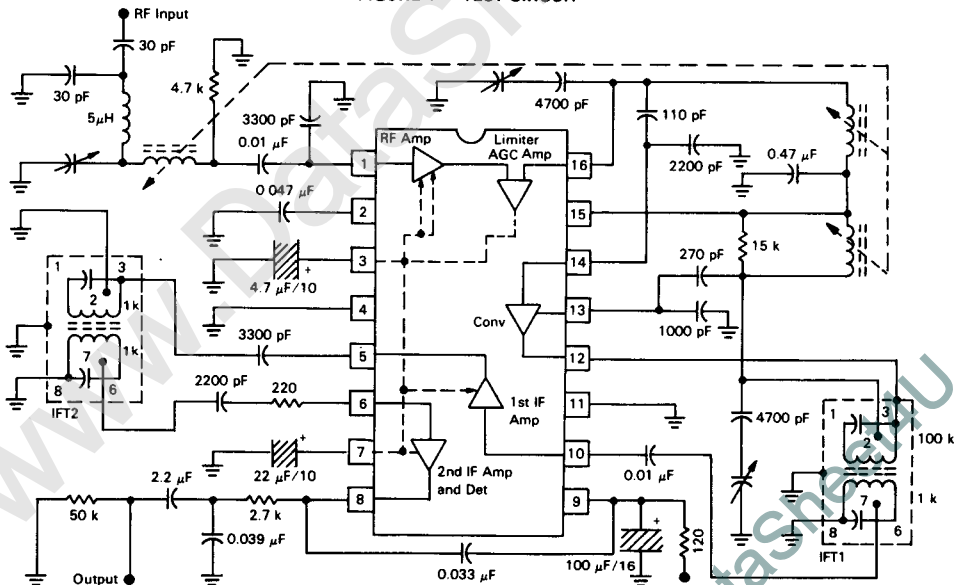
### AM RADIO SUBSYSTEM

MONOLITHIC SILICON  
INTEGRATED CIRCUIT



P SUFFIX  
PLASTIC PACKAGE  
CASE 648

FIGURE 1 — TEST CIRCUIT



#### PIN CONNECTIONS

- |                      |                             |                             |                        |
|----------------------|-----------------------------|-----------------------------|------------------------|
| 1 RF Amplifier Input | 5 First IF Amplifier Output | 9 VCC                       | 13 Lo Input            |
| 2 RF Bypass          | 6 Second IF Amplifier Input | 10 First IF Amplifier Input | 14 Converter Input     |
| 3 AGC Bypass         | 7 AGC Bypass                | 11 Gnd                      | 15 VCC'                |
| 4 Gnd                | 8 Detector Output           | 12 Converter Output         | 16 RF Amplifier Output |

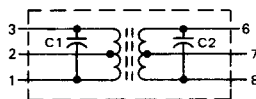
This is advance information and specifications are subject to change without notice.

**MAXIMUM RATINGS**

Rating	Value	Unit
Power Supply Voltage	16	Volts
Junction Temperature	150	°C
Operating Temperature Range (Ambient)	-30 to +70	°C
Storage Temperature Range	-65 to +150	°C

**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = 13.2 \text{ V}$ ,  $f_c = 1.0 \text{ MHz}$ ,  $f_{mod} = 400 \text{ Hz}$ ,  $T_A = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Min	Typ	Max	Unit
Drain Current at Zero Signal	—	15	—	mA
Signal-to-Noise Ratio Input = 34 dB $\mu$ , 30% Modulation	25.5	30	—	dB
AGC FOM Test @ 10 dB Output Down, 30% Modulation				dB
1) Output @ 74 dB $\mu$ Input	—	57	—	
2) Output @ 86 dB $\mu$ Input	51	63	—	
Detector Output Input = 74 dB $\mu$ , 30% Modulation	80	120	157	mV
Distortion Input = 114 dB $\mu$ , 30% Modulation	—	0.4	5.0	%
Sensitivity Input @ S/N = 20 dB, 30% Modulation	—	23	—	dB $\mu$



**SPECIFICATION OF THE IFTs**

	Q0	Number of Turns				C1 (pF)	C2 (pF)	Tuned Frequency (kHz)
		1-2	2-3	6-7	7-8			
First IFT	70	66	220	260	26	180	180	262.5
Second IFT	70	271	23	271	23	180	180	262.5