LINEAR INTEGRATED CIRCUIT

LOW VOLTAGE AM-FM RADIO

The TDA 1220L is a monolithic integrated circuit in a 16-lead dual in-line plastic package designed for use in 3V-4.5V-6V portable AM-FM radio receivers. The functions incorporated are:

AM SECTION

- Preamplifier and double balanced mixer*
- One pin local oscillator
- IF amplifier with internal AGC
- Detector and audio preamplifier

FM SECTION

2V to 9V

- IF amplifier and limiter

- AM sensitivity regulation facility

Very simple DC switching of AM-FM

- High stability of electrical characteristics from

- Quadrature detector
- Audio preamplifier

The TDA 1220L is suitable up to 30 MHz AM and for FM bands and features:

- High sensitivity and low noise
- Very low tweet
- High signal handling (1V)
- Low battery drain
- * Patent pending.

ABSOLUTE MAXIMUM RATINGS

12	v
400	mW
-20 to 85	°C
-55 to 150	°C
	12 400 -20 to 85 -55 to 150

ORDERING NUMBER: TDA 1220L

MECHANICAL DATA

Dimensions in mm







CONNECTION DIAGRAM



BLOCK DIAGRAM



THERMAL DATA

R _{th j-amb} Thermal resistance junction-ambient	max	100	°C/W
-----------------------------------------------------------	-----	-----	------



ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C, V_s = 4.5V unless otherwise specified, refer to

test circuit)

Parameter		Test conditions	Min.	Typ.	Max.	Unit
Vs	Operating supply voltage		2		9	V
1 _d	Drain current			10		mA

AM SECTION ($f_o = 1 \text{ MHz}$; $f_m = 1 \text{ KHz}$)

Vi	Input sensitivity	S/N = 26 dB	m = 0.3	15	μV
S/N		V _i = 10 mV	m = 0.3	52	dB
Vi	AGC range	$\Delta V_{out} = 10 dB$	m = 0.8	100	dB
٧ _o	Recovered audio signal (pin 9)	V _i = 1 mV	m = 0.3	80	mV
d	Distortion			0.4	%
Vн	Max input signal handling capability	m = 0.8	d < 10%	1	v
R _i	Input resistance between pins 2 and 4	m = 0		7.5	κΩ
Ci	Input capacitance between pins 2 and 4	m = 0		18	pF
Ro	Output resistance (pin 9)		··· ·· ··· ··· ··	5	ΚΩ
	Tweet 2 IF			40	dB
	Tweet 3 IF	m = 0,3	v _i = 1 mV	55	dB

FM SECTION (f_ = 10.7 MHz; f_m = 1 KHz)

vi	Input limiting voltage	-3 dB limiting point	20	μV
AMR	Amplitude modulation rejection	$\Delta f = \pm 22.5 \text{ KHz} \text{ m} = 0.3 \text{ V}_{i} = 3 \text{ mV}$	50	dB
S/N	Ultimate quieting	$\Delta f = \pm 22.5 \text{ KHz}$ V _i = 1 mV	70	dB
d	Distortion	$\Delta f = \pm 22.5 \text{ KHz}$ V _i = 1 mV	0.3	%
Vo	Recovered audio signal (pin 9)	$\Delta f = \pm 22.5 \text{ KHz}$ $V_i = 1 \text{ mV}$	80	m∨
Ri	Input resistance between pin 16 and ground	$\Delta f = 0$	6.5	KΩ
Ci	Input capacitance between pin 16 and ground	$\Delta f = 0$	14	pF
Ro	Output resistance (pin 9)		5	KΩ



Fig. 1 - Test circuit



Fig. 2 - PC board and component layout (1:1 scale) of the test circuit.





Fig. 3 - Suggestion for varicap tuned receiver.



Fig. 4 - Suggestion for "coil block" use

