ILA7050

LOW VOLTAGE MONO/STEREO POWER AMPLIFIER

GENERAL DESCRIPTION

The ILA7050 is a low voltage audio amplifier for small radios with headphones (such as watch, pen and pocket radios) in mono (bridge-tied load) or stereo applications.

Features

- Limited to battery supply application only (typ. 3 and 4 V)
- Operates with supply voltage down to 1,6 V
- No external components required
- Very low quiescent current
- Fixed integrated gain of 26 dB, floating differential input
- Flexibility in use - mono BTL as well as stereo
- Small dimension of encapsulation (see package design example)

QUICK REFERENCE DATA

Supply voltage range	Vp	1,6	to 6,0 V
Total quiescent current (at Vp = 3 V)	Itot	typ.	3,2 mA
Bridge tied load application (BTL)			
Output power at R) = 32 Q			
Vp=3V;dtat=10%	PO	typ.	140 mW
D.C. output offset voltage between the outputs	IAVI	max.	70 mV
Noise output voltage (r.m.s. value)			
at f = 1 kHz; Rg = 5 kfit	$V_{no(rms)}$	typ.	140 mV
Stereo application			
Output power at R(= 32 Ω			
d_{tot} = 10%; Vp = 3V	PO	typ.	35 mW
d_{tot} = 10%; Vp= 4,5V	PO	typ.	75 mW
Channel separation at Rs = 0 Ω; f = 1 kHz	K	typ.	40 dB
Noise output voltage (r.m.s. value)			
at f = 1 kHz; Rs = 5 kΩ	$V_{no(rms)}$	typ.	100 mV

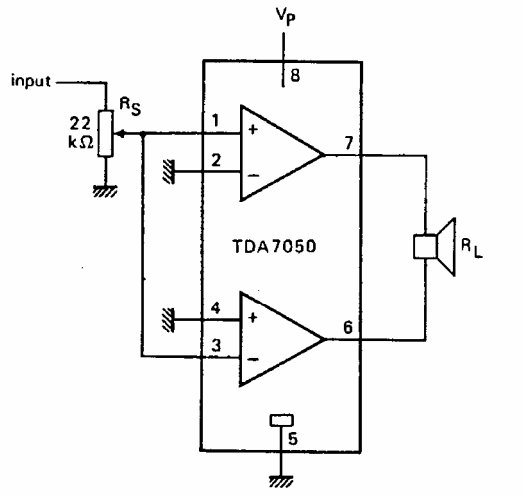
PACKAGE OUTLINE 8-lead DIL; plastic (SOT97); SOT97-1;

CHARACTERISTICS Vp = 3 V; f = 1 kHz; RL = 32 *0.,* Tamb = 25 °C; unless otherwise specified

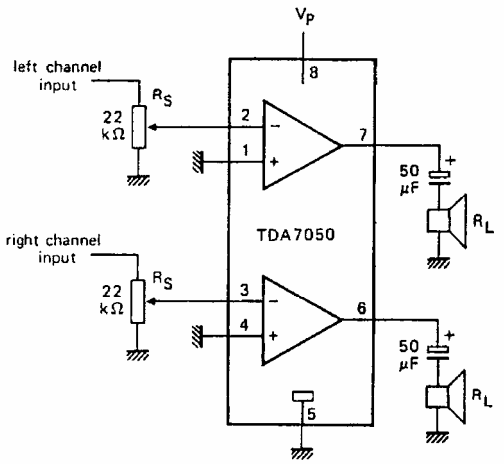
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply					
Supply voltage	Vp	1,6	-	6,0	V
Total quiescent current	Itot	-	3,2	4	mA
Bridge-tied load application (BTL); see Fig.4					
Output power; note 1					
Vp = 3,0 V; diet = 10%	PO	-	140	-	mW
Vp = 4,5 V; diet = 10% (RL = 64 Q)	PO	-	150	-	mW
Voltage gain	GV	-	32	-	dB
Noise output voltage (r.m.s. value)					
RS = 5 kQ.-, f = 1 kHz	Vno(rms)	-	140	-	mV
RS = 0 Q; f = 500 kHz; B =*5* kHz	Vno(rms)	-	tbf	-	mV
D.C. output offset voltage (at Rs = 5 kΩ)	lΔVI	-	-	70	mV
Input impedance (at Rs =∞)	IZiI	1	-	-	MΩ
Input bias current	Ii	-	40	-	nA
Stereo application;					
Output power; note 1					
Vp=3,OV;dtot=10%	PO	-	35	-	mW
Vp=4,5V;dtot=10%	PO	-	75	-	mW
Voltage gain	GV	24.5	26	27.5	dB
Noise output voltage (r.m.s. value)					
RS = 5 kΩ; f = 1 kHz	Vno(rms)	-	100	-	mV
RS = 0 Ω; f = 500 kHz; B =5 kHz	Vno(rms)	-	tbf	-	mV
Channel separation					
RS = 0 Ω; f = 1 kHz	K	30	40	-	dB
Input impedance (at Rs = ∞)	IZjI	2	-	-	MΩ
Input bias current	Ii	-	20	-	nA

Note

1. Output power is measured directly at the output pins of the IC. It is shown as a function of the supply voltage in Fig.2 (BTL application) and Fig.3 (stereo application).

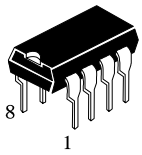


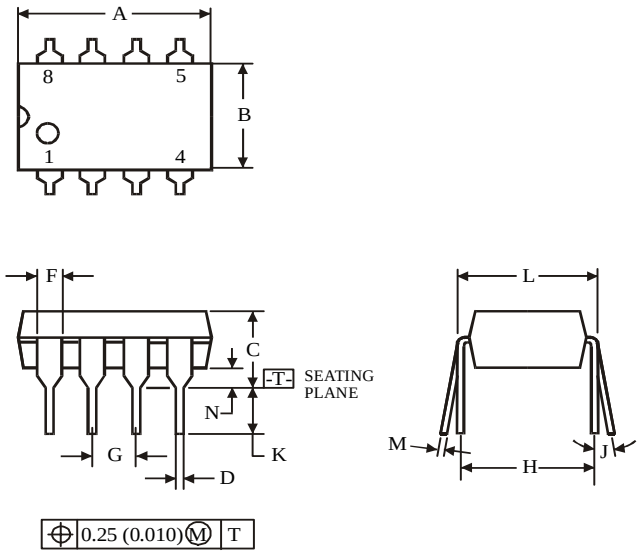
Application diagram (BTL)



Application diagram (stereo)

N SUFFIX PLASTIC DIP
(MS – 001BA)





	Dimension, mm	
Symbol	**MIN**	**MAX**
A	8.51	10.16
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

NOTES:

1. Dimensions “A”, “B” do not include mold flash or protrusions.
   Maximum mold flash or protrusions 0.25 mm (0.010) per side.