TDA2320A

STEREO AMPLIFIER

NOT FOR NEW DESIGN

- WIDE SUPPLY VOLTAGE RANGE: 3 TO 30V
- SINGLE OR SPLIT SUPPLY OPERATION
- VERY LOW CURRENT CONSUMPTION: 0.8mA
- VERY LOW DISTORTION: 0.03% TYPICAL

N
DIP8
(Plastic Package)

D
SO8
(Plastic Micropackage)

DESCRIPTION

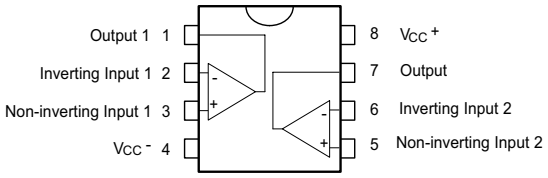
The TDA2320A is a stereo class A preamplifier intended for application in portable cassette players and high quality audio systems.
The TDA2320A is a monolithic integrated circuit in a 8 lead plastic dip.

ORDER CODE

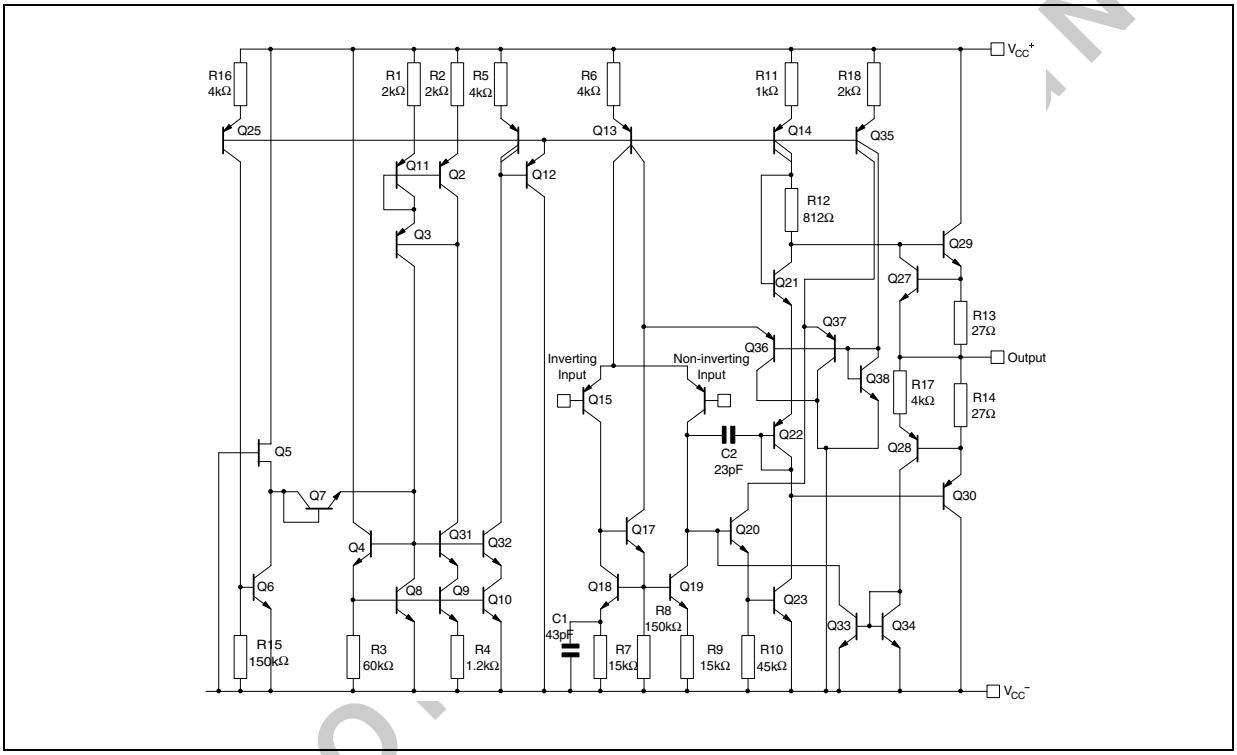
Part Number	Temperature Range	Package	
		N	D
TDA2320A	-40°C, +105°C	•	•
Example : TDA2320AN			

N = Dual in Line Package (DIP

PIN CONNECTIONS (top view)



SCHEMATIC DIAGRAM (1/2 TDA2320A)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	36	V
p_{tot}	Total Power Dissipation at T_{amb} = 70°C 1)	400	mW
T_{stg} , T_j	Storage and Junction Temperature	-40 to 150	°C

1. Power dissipation must be considered to ensure maximum junction temperature (Tj) is not exceeded.

ELECTRICAL CHARACTERISTICS

V_{CC} = 15V, T_{amb} = 25°C (unless otherwise specified)

Symbol	Parameter		Min.	Typ.	Max.	Unit
V_{CC}	Supply Voltage		3		30	V
I_{CC}	Supply Current			0.8	2	mA
I_{ib}	Input Bias Current			150	500	mV
V_{io}	Input Offset Voltage $R_s \leq 10k\Omega$			 1	 5	mV
I_{io}	Input Offset Current			10	50	nA
A_{vd}	Open Loop Voltage Gain V_{CC} = 15V 	f = 333Hz f = 1kHz f = 10kHz f = 1kHz		 80 70 50 70		dB
V_{opp}	Output Voltage Swing (f = 1kHz, R_L = 600Ω) 	V_{CC} = 15V V_{CC} = 4.5V		 13 2.5		V
GBP	Gain-bandwidth Product f = 200kHz		 1.5	 2.5		MHz
FPB	Power Bandwidth V_o = $5V_{pp}$, THD = 1%		 40	 70		kHz
SR	Slew Rate (see note 1)		1	1.6		V/µs
e_n	Equivalent Input Noise Voltage Curve A B = 22Hz to 22kHz f = 1kHz	 Rs = 50Ω Rs = 600Ω Rs = 5kΩ Rs = 50Ω Rs = 600Ω Rs = 5kΩ Rs = 600Ω		 1 1.1 1.5 1.3 1.5 2 9		 µV µV µV µV µV µV nV/√Hz
THD	Distortion (V_o = 2V, A_V = 20dB) 	 f = 1kHz f = 10kHz		 0.03 0.08		%
PSRR	Power Supply Rejection Ratio f = 100Hz		 	 80		dB
V_{o1}/V_{o2}	Channel Separation f = 1kHz		 	 100		dB

Figure 1 : Supply Current versus Supply Voltage

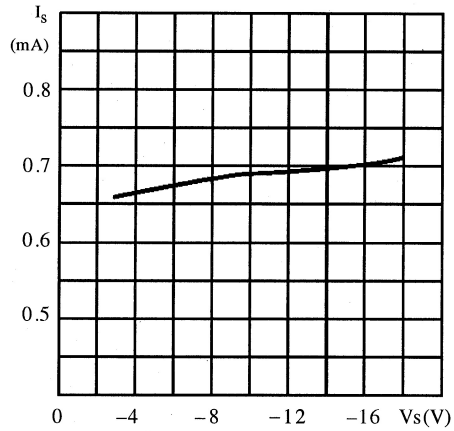


Figure 2 : Supply Current versus Ambient Temperature

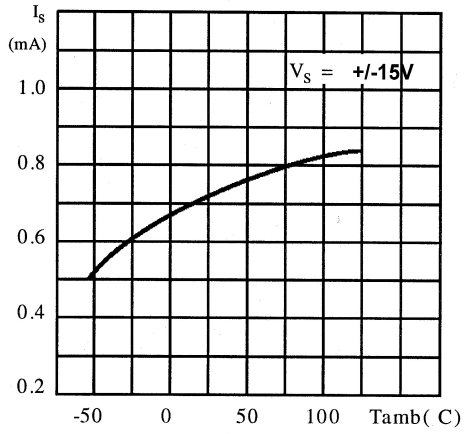


Figure 3 : Output Short Circuit Current versus Ambient Temperature

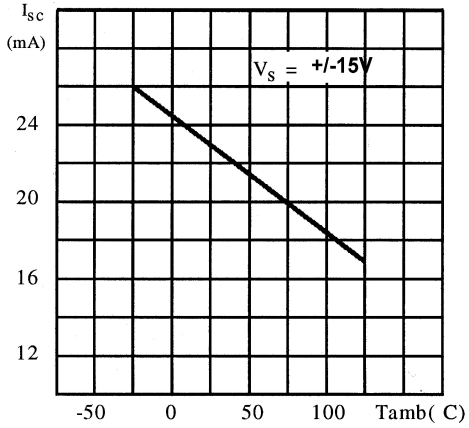


Figure 4 : Open Loop Frequency and Phase Response

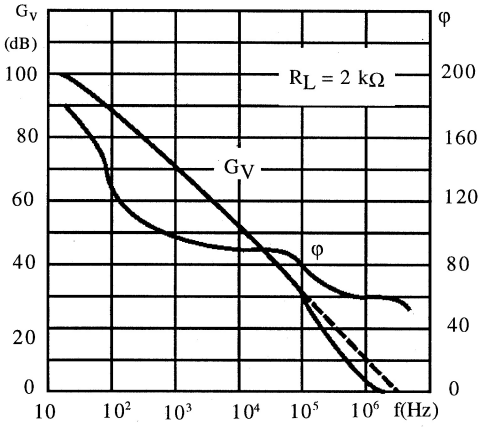


Figure 5 : Output Loop Gain versus Ambient Temperature

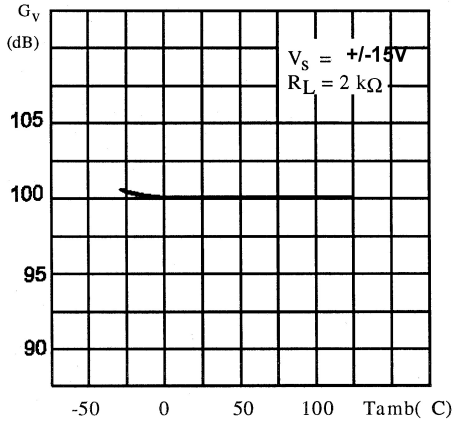


Figure 6 : Supply Voltage Rejection versus Frequency

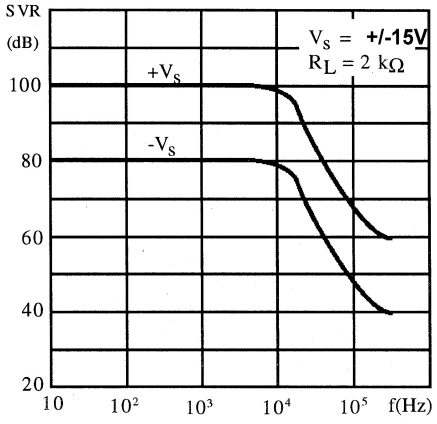


Figure 7 : Large Signal Frequency Response

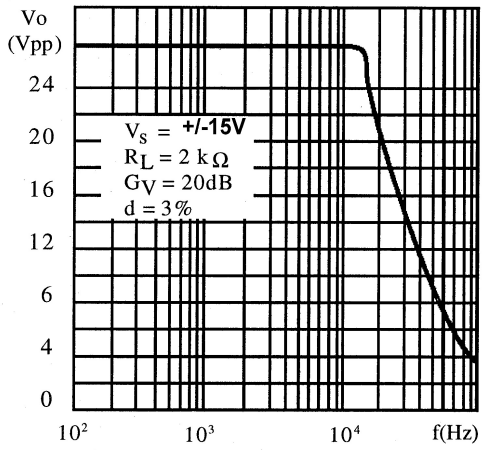


Figure 8 : Output Voltage Swing versus Load Resistance

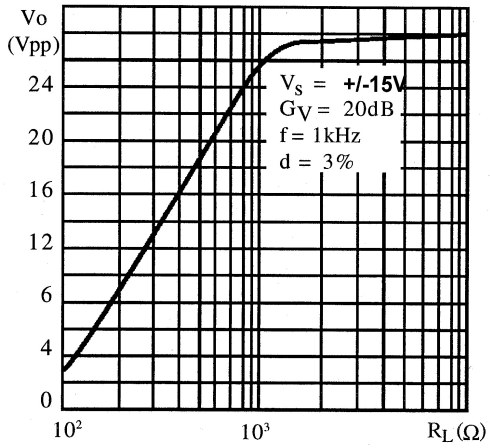


Figure 9 : Total Input Noise versus Frequency

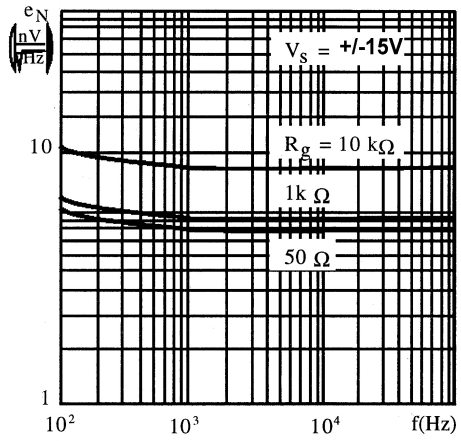


Figure 10 : Amplitude Response

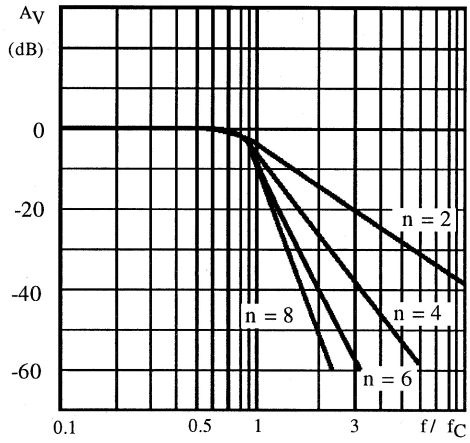


Figure 11 : Amplitude Response (±1dB ripple)

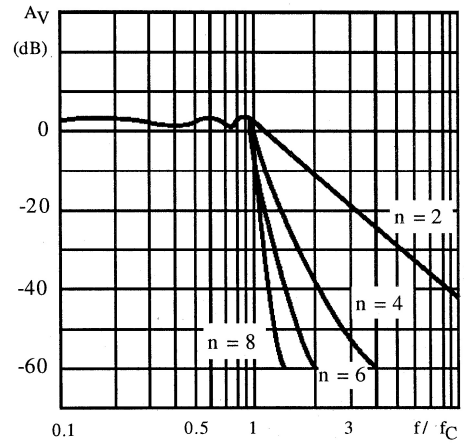


Figure 12 : Filter Configuration

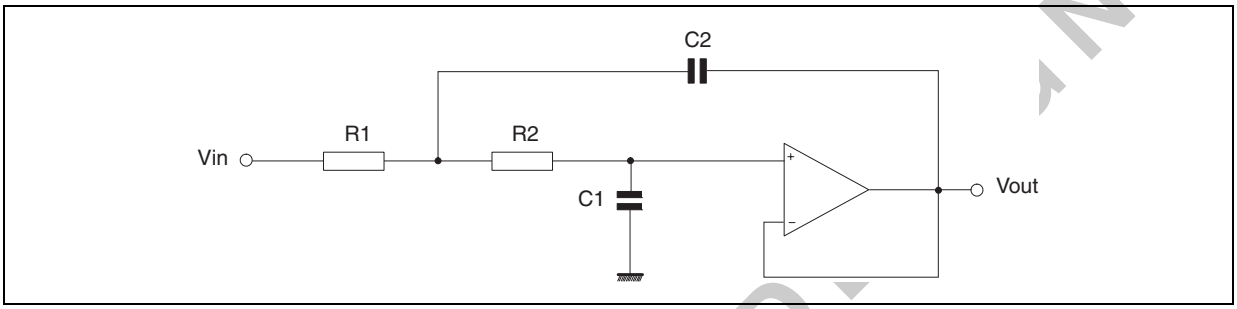


Figure 13 : 5th Order Low-pass Filter (Butterworth) with Unity Gain configuration

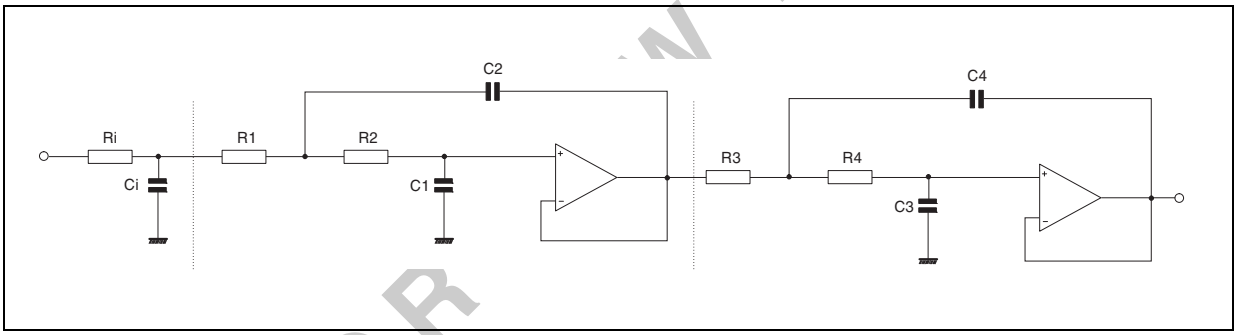
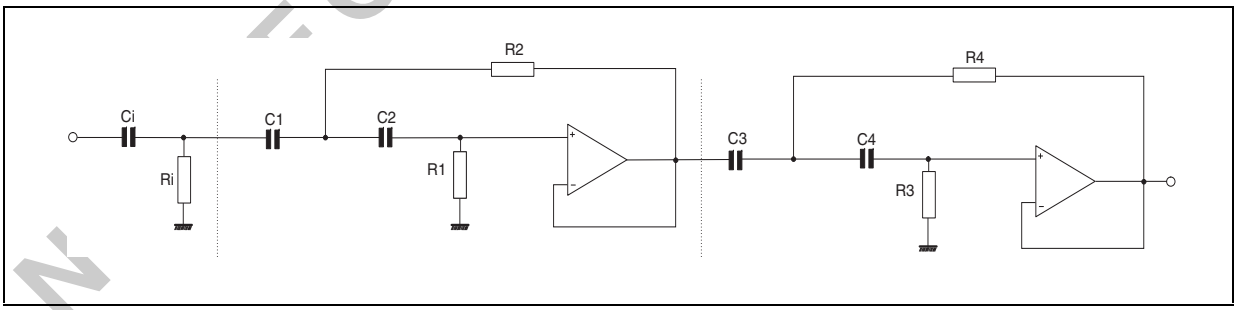


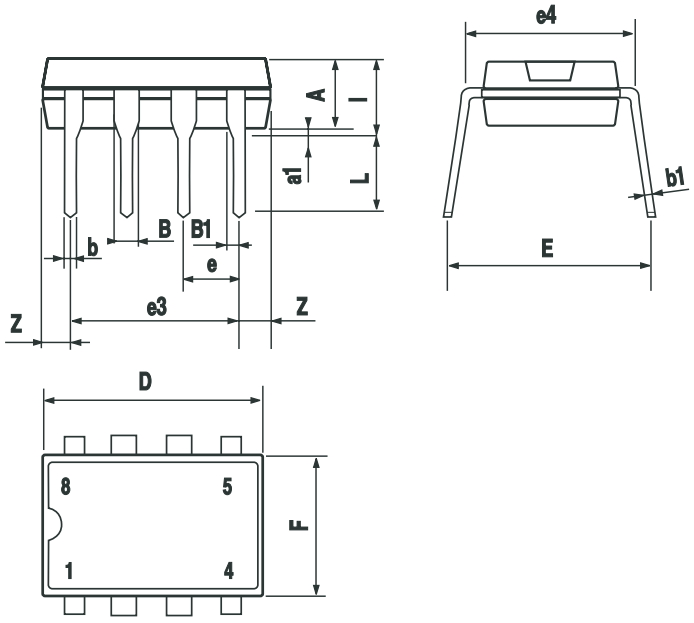
Figure 14 : 5th Order High-pass Filter (Butterworth) with Unity Gain configuration



PACKAGE MECHANICAL DATA
8 PINS - PLASTIC DIP

Plastic DIP-8 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A		3.3			0.130	
a1	0.7			0.028		
B	1.39		1.65	0.055		0.065
B1	0.91		1.04	0.036		0.041
b		0.5			0.020	
b1	0.38		0.5	0.015		0.020
D			9.8			0.386
E		8.8			0.346	
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			7.1			0.280
I			4.8			0.189
L		3.3			0.130	
Z	0.44		1.6	0.017		0.063



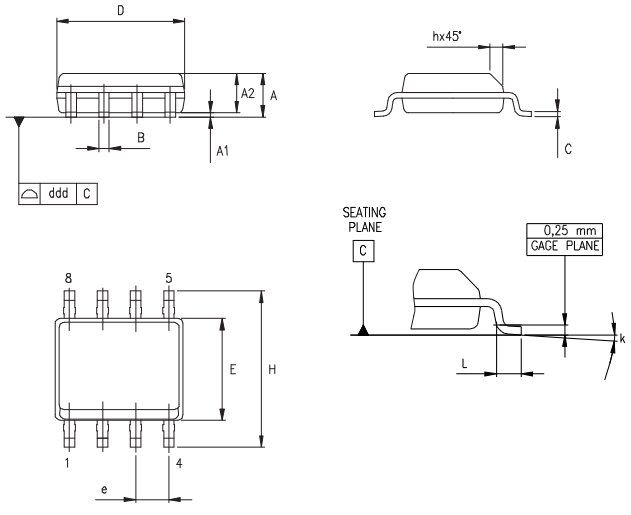
P001F

PACKAGE MECHANICAL DATA

8 PINS - PLASTIC MICROPACKAGE (SO)

SO-8 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.04		0.010
A2	1.10		1.65	0.043		0.065
B	0.33		0.51	0.013		0.020
C	0.19		0.25	0.007		0.010
D	4.80		5.00	0.189		0.197
E	3.80		4.00	0.150		0.157
e		1.27			0.050	
H	5.80		6.20	0.228		0.244
h	0.25		0.50	0.010		0.020
L	0.40		1.27	0.016		0.050
k	8° (max.)					
ddd			0.1			0.04



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