DATA SHEET

TDA1308; TDA1308A
Class AB stereo headphone driver

Product specification
Supersedes data of 2002 Feb 27

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Philips
Semiconductors

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Class AB stereo headphone driver TDA1308; TDA1308A

FEATURES

- Wide temperature range
- No switch ON/OFF clicks
- Excellent power supply ripple rejection
- Low power consumption
- Short-circuit resistant
- High performance
  - high signal-to-noise ratio
  - high slew rate
  - low distortion
- Large output voltage swing.

GENERAL DESCRIPTION

The TDA1308; TDA1308A is an integrated class AB stereo headphone driver contained in an SO8, DIP8 or a TSSOP8 plastic package. The device is fabricated in a 1 mm CMOS process and has been primarily developed for portable digital audio applications.

The difference between the TDA1308 and the TDA1308A is that the TDA1308A can be used at low supply voltages.

QUICK REFERENCE DATA

V_{DD} = 5 V; V_{SS} = 0 V; T_{amb} = 25 °C; f_i = 1 kHz; R_L = 32 Ω; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{DD}	supply voltage	TDA1308				
	single		3.0	5.0	7.0	V
	dual		1.5	2.5	3.5	V
	supply voltage	TDA1308A				
	single		2.4	5.0	7.0	V
	dual		1.2	2.5	3.5	V
V_{SS}	negative supply voltage		–1.5	–2.5	–3.5	V
I_{DD}	supply current	no load	–	3	5	mA
P_{tot}	total power dissipation	no load	–	15	25	mW
P_o	maximum output power	THD < 0.1%; note 1	–	60	–	mW
(THD + N)/S	total harmonic distortion plus noise-to-signal ratio	note 1				
			–	0.03	0.06	%
			–	–70	–65	dB
		R_L = 5 kΩ; note 2	–	–92	–89	dB
		R_L = 5 kΩ; note 3	–	–52	–40	dB
		R_L = 5 kΩ	–	–101	–	dB
S/N	signal-to-noise ratio		100	110	–	dB
α_{cs}	channel separation		–	70	–	dB
		R_L = 5 kΩ	–	105	–	dB
PSRR	power supply ripple rejection	f_i = 100 Hz; $V_{ripple(p-p)}$ = 100 mV	–	90	–	dB
T_{amb}	ambient temperature		–40	–	+85	°C

Notes

1. V_{DD} = 5 V; $V_{O(p-p)}$ = 3.5 V (at 0 dB).
2. V_{DD} = 2.4 V; $V_{O(p-p)}$ = 1.62 V (at –4.8 dBV); for TDA1308A only.
3. V_{DD} = 2.4 V; $V_{O(p-p)}$ = 1.19 V (at –7.96 dBV); for TDA1308A only.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
TDA1308	DIP8	plastic dual in-line package; 8 leads (300 mil)	SOT97-1
TDA1308T	SO8	plastic small outline package; 8 leads; body width 3.9 mm	SOT96-1
TDA1308AT	SO8	plastic small outline package; 8 leads; body width 3.9 mm	SOT96-1
TDA1308TT	TSSOP8	plastic thin shrink small outline package; 8 leads; body width 3 mm	SOT505-1

BLOCK DIAGRAM

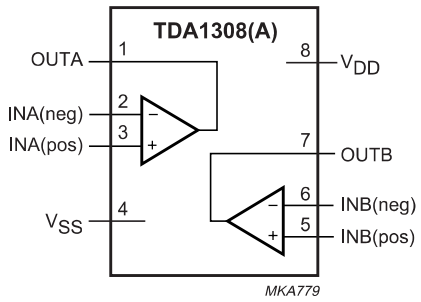

Fig.1 Block diagram.

PINNING

SYMBOL	PIN	DESCRIPTION
OUTA	1	output A
CD)	2	inverting input A
INA(pos)	3	non-inverting input A
V_{SS}	4	negative supply
INB(pos)	5	non-inverting input B
INB(neg)	6	inverting input B
OUTB	7	output B
V_{DD}	8	positive supply

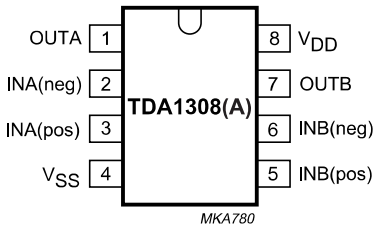

Fig.2 Pin configuration.