MEGAXESS
Megaxess GmbH Deutschland

Technical Data

TDA3006

Edition 09/00

Stereo Earphone Amplifier

Short description

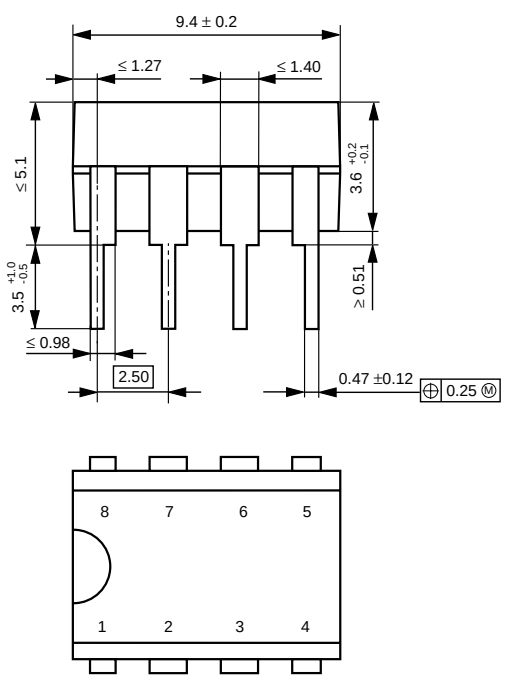
The integrated circuit TDA3006 is a two channel low power amplifier for application in stereo HiFi earphone amplifiers.This IC consists an internal circuitry that only needs a minimum of external components.

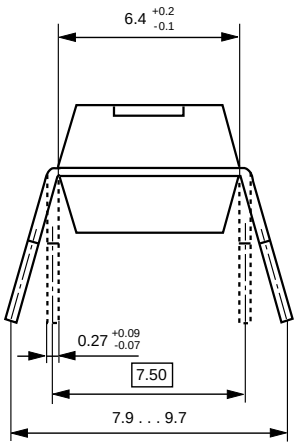
Features

- Wide supply voltage range
- Wide load impedance range
- Thermal shut down
- Overload protection by current limiting
- MUTE and STAND-BY function
- Internal fixed gain typ. 30 dB
- Minimum external components

Package

- DIP 8

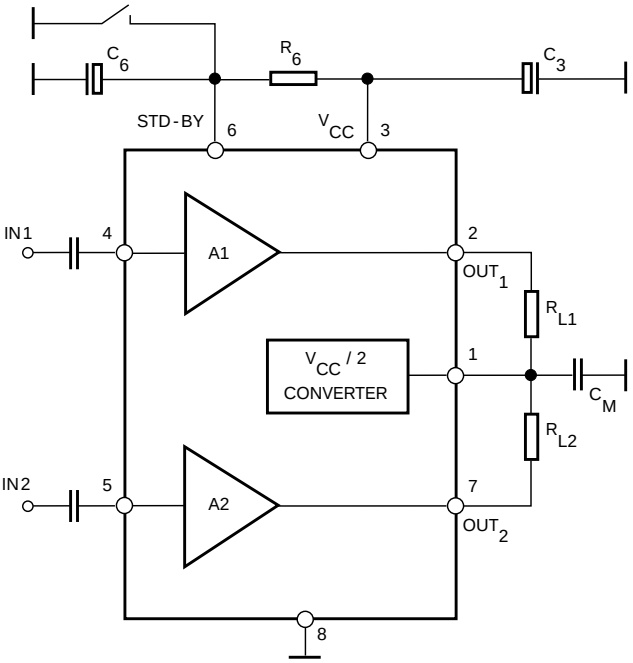




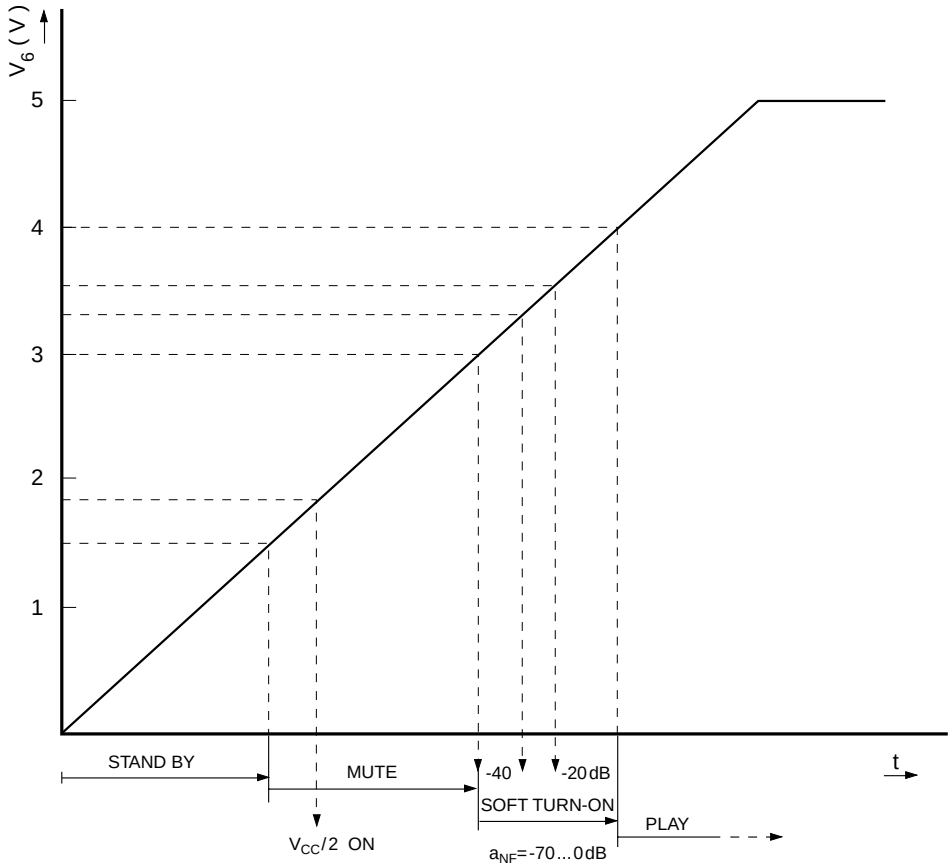
Pinning

1 - V_{CC} / 2 Converter
2 - Output 1
3 - Supply voltage
4 - Input 1
5 - Input 2
6 - Mute / Stand-by switching input
7 - Output 2
8 - Ground

Block Diagram and Typical Application Circuit



Functional Description



Below 0.5 V the IC is in STAND-BY status. Increasing of V_6 over 2 V activates the amplifiers and they follow up in MUTE mode. After V_6 reaches approximately 3 V the AF-level softly inceases to its maximum value at $V_6 \approx 4.5$ V. If $V_6 \geq 4.5$ V the IC works in PLAY mode at internal fixed gain of 30 dB.

Absolute Maximum Ratings

Open load supply voltage	V_{CC}	16.5	V
Supply voltage	V_{CC}	15	V
Switching voltage	V_6	V_{CC}	V
Output-peak current *) (f ≥ 10 Hz)	I_{OM}	0.15	A
Total power comsumption (T_{amb} ≤ 70 °C)	P_{tot}	570	mW
Junction temperature	T_j	150	°C
Ambient temperature range	T_{amb}	0 ... 70	°C
Storage temperature range	T_{stg}	-40 ... 150	°C
Thermal resistance	R_{thja}	140	K/W

*) internal limited

Recommended Operational Conditions

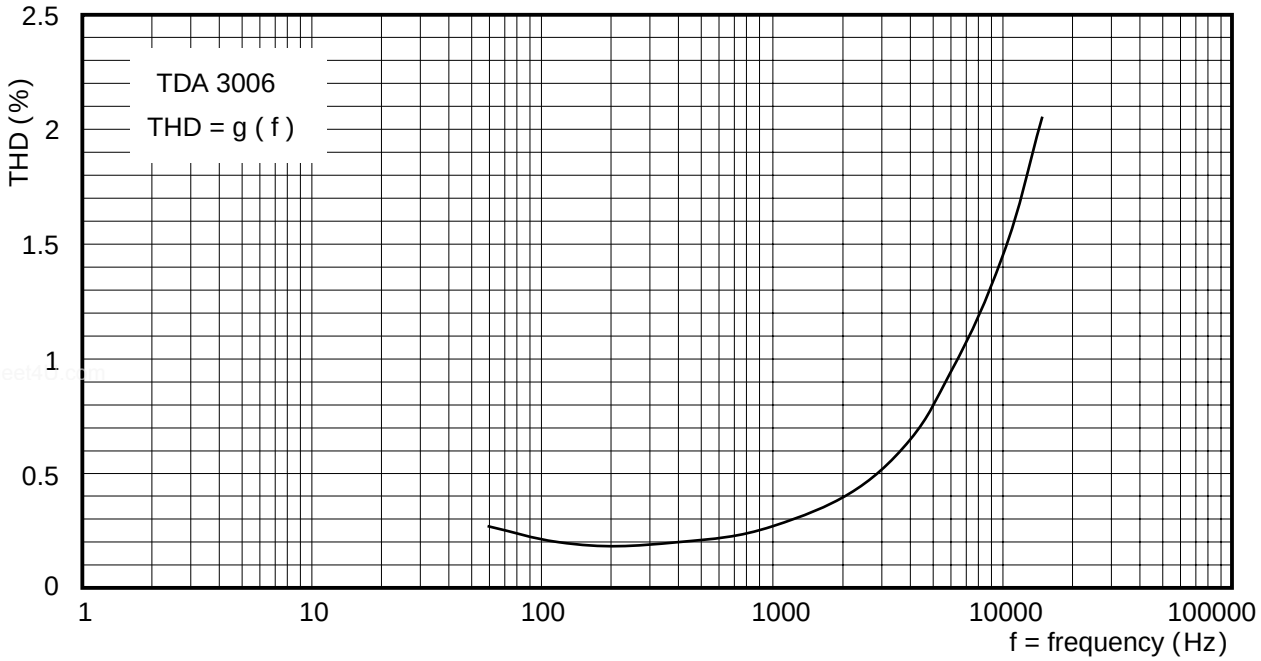
Parameter	Symbol	min.	typ.	max.	unit
Supply voltage range	ΔV_{CC}	5		15	V
Load impedance range	ΔR_L	16	32	600	Ω
Stand by - mode	V_{6STBY}			0.5	V
Mute - mode	V_{6MUTE}			2.5	V
Play - mode	V_{6PLAY}	4.5			V

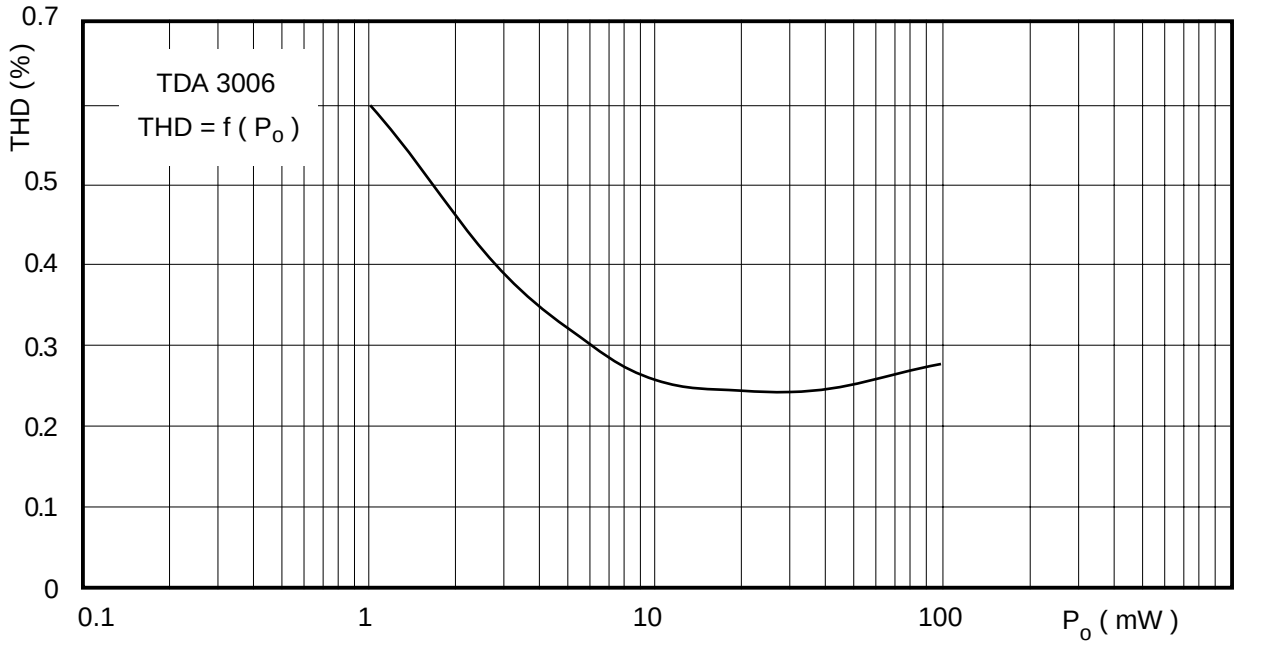
Electrical Characteristics

at V_{CC} = 12 V, $V_6 = V_{CC}$, R_L = 32 Ω, T_a = 25 °C, unless otherwise specified

Parameter	Symbol	min.	typ.	max.	unit
Output power (per channel) f = 1 kHz; k = 10 %	P_o	40			mW
Total harmonic distortion f = 1 kHz; P_o = 25 mW • V_{CC} = 12 V • V_{CC} = 5 V	 THD THD			 0.7 0.7	 % %
Voltage gain internal fixed	g_V		30		dB
Input impedance f = 1 kHz	R_i		10		kΩ
Quiescent current • V_{CC} = 15 V • V_{CC} = 5 V	 I_{CCQ} I_{CCQ}			 10 7	 mA mA
Stand by - current consumption $V_6 \leq 0.5$ V	I_{CCQST}			100	µA
Mute - attenuation V_6 = 2.5 V	a_M	-60			dB
Input current	I_6			500	µA
Signal-to-noise ratio P_0 = 25 mW	S/N		60		dB
Cross talk C_M = 100 nF, P_o = 40 mW f = 1 kHz	a_{CT}		40		dB

Dependences





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