HT82V736

Stereo Headphone Driver with Mute

Features

- Operating voltage: 2.4V~6.0V
- Internal mute function to prevent power On/Off clicks
- Excellent power supply ripple rejection
- High slew rate
- Low total harmonic distortion
- Low power consumption
- Short circuit elimination
- Integrated voltage divider (V_{DD}/2) to eliminate external resistors
- Wide temperature operating range
- 8-pin SOP package

Applications

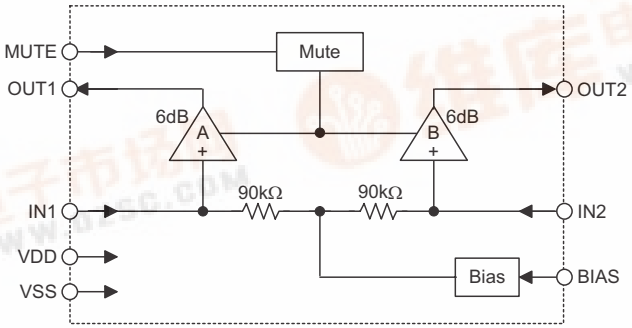
- CD-ROM/RW, DVD-ROM/RW
- PDA, MP3
- Portable Digital Audio
- Discman, Camcorders
- Headphone Amplifier

General Description

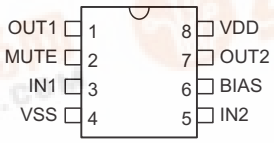
The HT82V736 is a class AB stereo earphone driver designed for portable digital audio application. It provides an integrated mute function to prevent popping sounds when power is turned on and off. In addition, the HT82V736 further integrates a voltage divider, and therefore the external resistors can be eliminated.

The HT82V736 has a fixed gain of 6dB so that external gain setting is unnecessary. It is fully pin and functionally compatible with BH3544 which is suitable for effective low cost applications.

Block Diagram



Pin Assignment



HT82V736
– 8 SOP-A

Pin Description

Pin No.	Pin Name	I/O	Description
1	OUT1	O	Channel 1 output pin
2	MUTE	I	Mute control (Mute On: low; Mute Off: high)
3	IN1	I	Audio input channel 1
4	VSS	—	Negative power supply, ground
5	IN2	I	Audio input channel 2
6	BIAS	I	V_{DD}/2 connected a capacitor to ground to eliminate power On/Off clicks
7	OUT2	O	Channel 2 output pin
8	VDD	—	Positive power supply

Absolute Maximum Ratings

Supply Voltage .....V_{SS}–0.3V to V_{SS}+7.0V

Input Voltage .....V_{SS}–0.3V to V_{DD}+0.3V

Storage Temperature .....–50°C to 125°C

Operating Temperature .....–40°C to 85°C

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

Electrical Characteristics

V_{IN}=0.5Vrms; Vss=0V; f=1kHz; Ta=25°C; R_L=32Ω (unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{DD}	Conditions				
V_{DD}	Supply Voltage	—	—	2.4	—	6.0	V
I_Q	Quiescent Current	5V	V_{IN}=0Vrms	—	2.5	4.0	mA
I_{MUTE}	Mute Current	5V	V_{IN}=0Vrms	—	100	—	μA
D.C. Characteristics							
V_{MUTE}	Mute Pin Control Voltage	5V	—	0.3	0.7	1.6	V
ΔA_V	Differential Channel Voltage Gain	5V	—	–0.5	0	0.5	dB
A_V	Voltage Gain	5V	—	—	6	—	dB
PSRR	Power Supply Rejection Ratio	5V	f_{RR}=100Hz; V_{RR}=–20dBV	65	75	—	dB
P_{O1}	Rated Output Power 1	5V	R_L=32Ω, THD<0.1%	60	65	—	mW
P_{O2}	Rated Output Power 2	5V	R_L=16Ω, THD<0.1%	110	115	—	mW
A.C. Characteristics							
THD	Total Harmonic Channel Distortion Factor	5V	BW=20~20kHz	—	0.02	0.05	%
ATT	Mute Attenuation	5V	f=1kHz	80	90	—	dB
X_{TALK}	Channel Separation	5V	f=1kHz	55	70	—	dB
V_{NO}	Output Noise Voltage	5V	V_{IN}=0Vrms, BW=20~20kHz	—	–97	–90	dBV

Typical Performance Characteristics

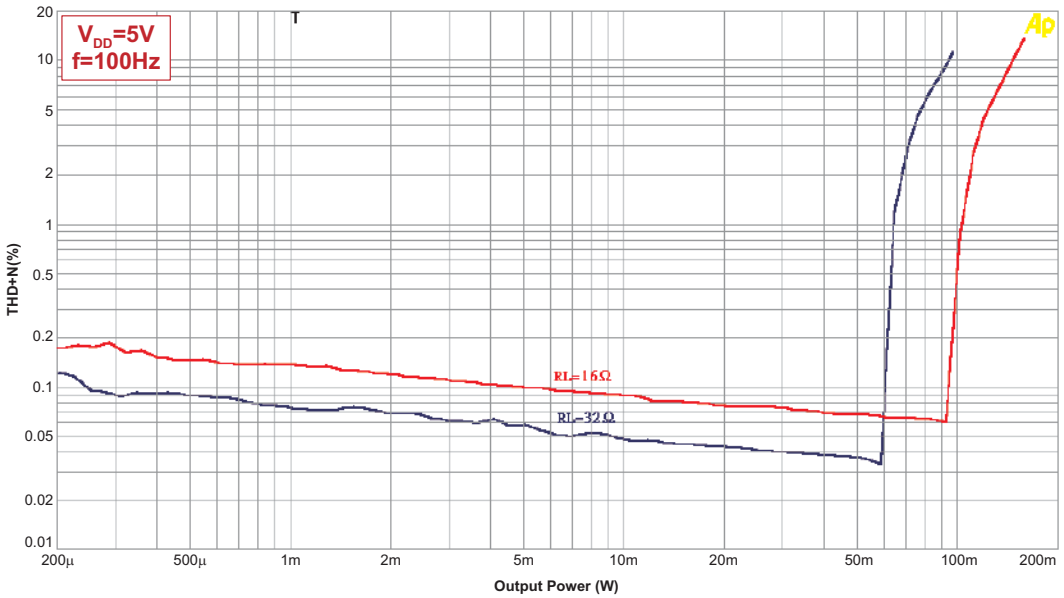


Fig.1 Total Harmonic Distortion vs. Output Power

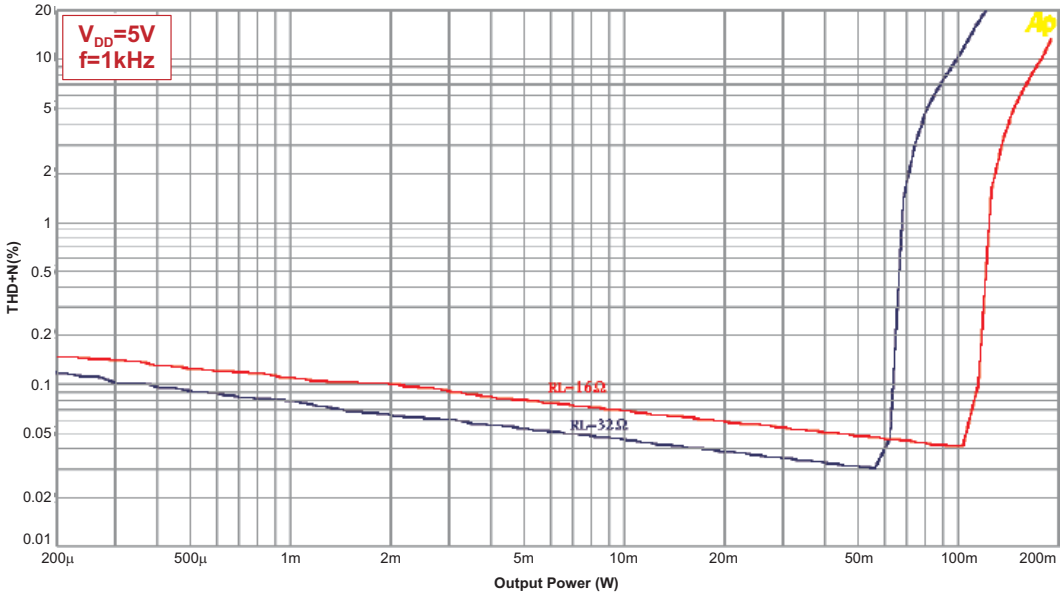


Fig.2 Total Harmonic Distortion vs. Output Power

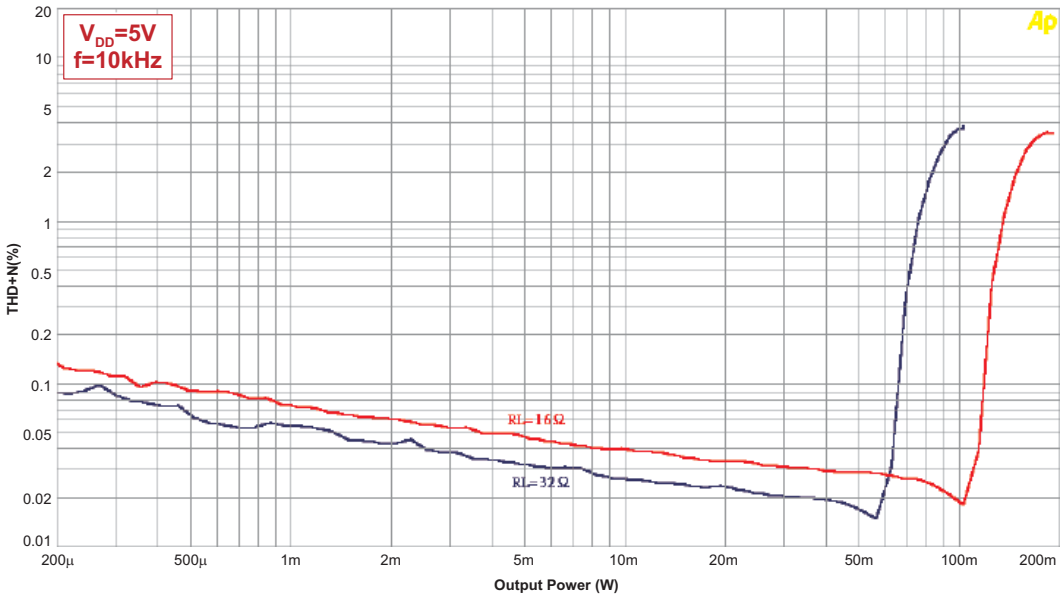


Fig.3 Total Harmonic Distortion vs. Output Power

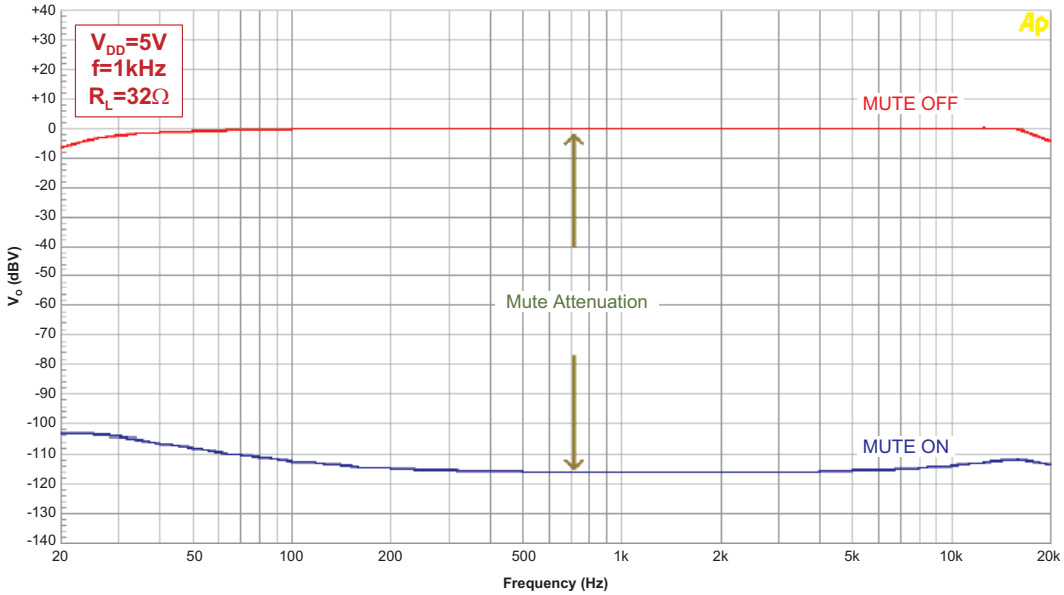


Fig.4 Mute Attenuation vs. Frequency

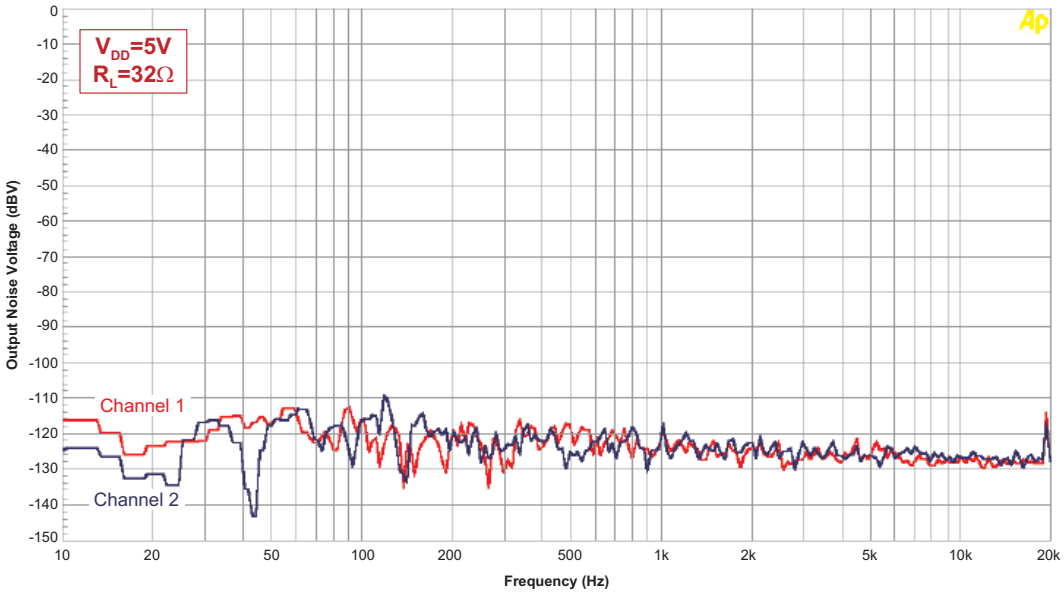
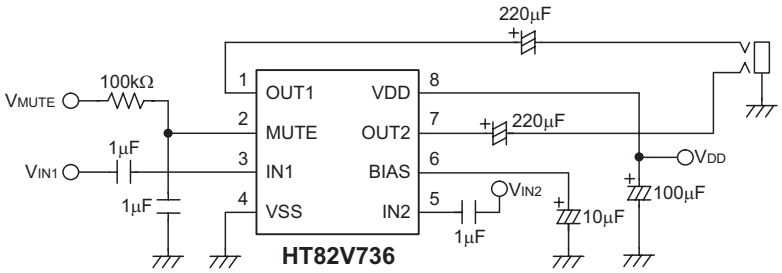


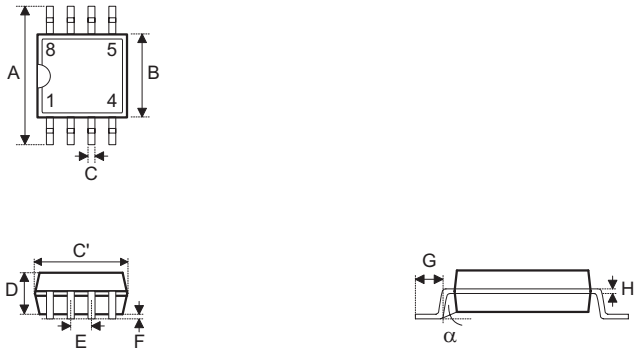
Fig.5 Output Noise Voltage vs. Frequency

Application Circuits



Package Information

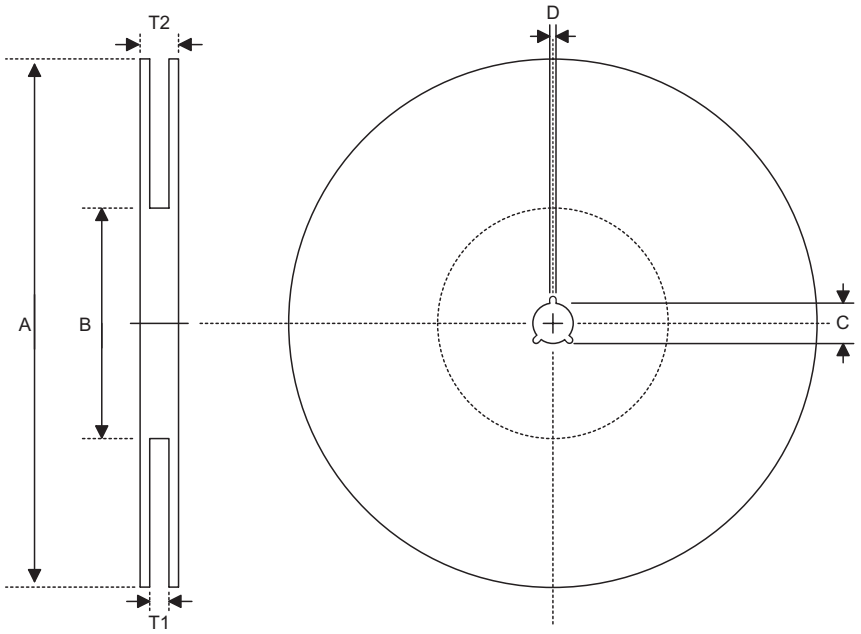
8-pin SOP (150mil) Outline Dimensions



Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	228	—	244
B	149	—	157
C	14	—	20
C′	189	—	197
D	53	—	69
E	—	50	—
F	4	—	10
G	22	—	28
H	4	—	12
α	0°	—	10°

Product Tape and Reel Specifications

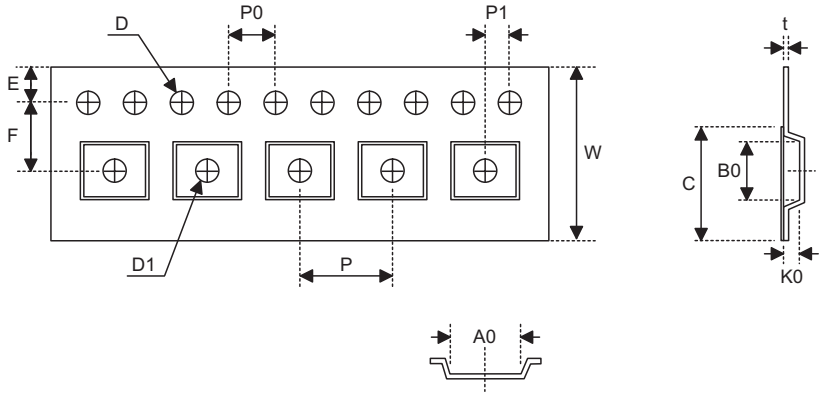
Reel Dimensions



SOP 8N

Symbol	Description	Dimensions in mm
A	Reel Outer Diameter	330±1
B	Reel Inner Diameter	62.0±1.5
C	Spindle Hole Diameter	13.0+0.5 −0.2
D	Key Slit Width	2.0±0.5
T1	Space Between Flange	12.8+0.3 −0.2
T2	Reel Thickness	18.2±0.2

Carrier Tape Dimensions



SOP 8N

Symbol	Description	Dimensions in mm
W	Carrier Tape Width	12.0+0.3 −0.1
P	Cavity Pitch	8.0±0.1
E	Perforation Position	1.75±0.1
F	Cavity to Perforation (Width Direction)	5.5±0.1
D	Perforation Diameter	1.55±0.1
D1	Cavity Hole Diameter	1.5+0.25
P0	Perforation Pitch	4.0±0.1
P1	Cavity to Perforation (Length Direction)	2.0±0.1
A0	Cavity Length	6.4±0.1
B0	Cavity Width	5.2±0.1
K0	Cavity Depth	2.1±0.1
t	Carrier Tape Thickness	0.3±0.05
C	Cover Tape Width	9.3

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