

# 16-Bit Stereo Audio D/A Converter

## Features

- Wide supply voltage range: 2.4V~5.5V
- CMOS technology
- Low power consumption
- Two voltage output channel in the same chip
- 16-bit dynamic range
- Low total harmonic distortion
- Data in 2's complement format, TTL
- 8-pin SOP package

## Applications

- CD ROM/VCD
- MP3/PDA/Smartphone
- Digital portable audio equipment
- Satellite/cable STB
- Motherboard/MPEG card

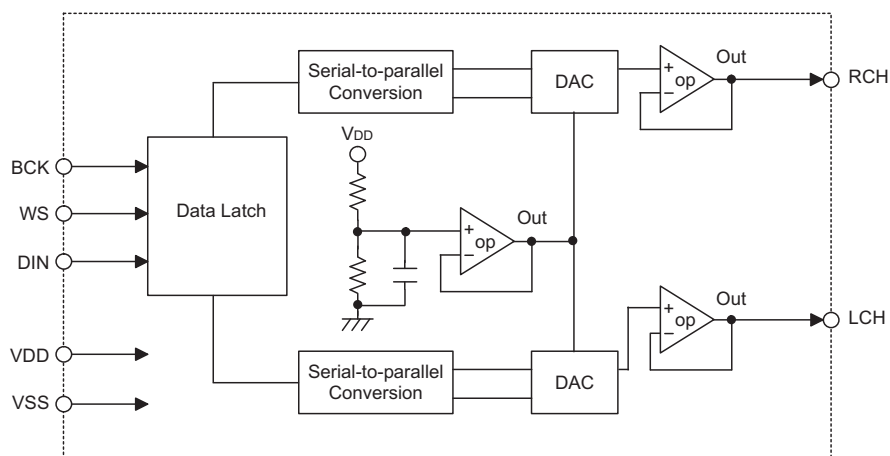
## General Description

HT82V731 is a 16-bit digital-to-analog converter IC utilizing CMOS technology specially designed for stereo audio application. It converts the 16 bits serial data into an analog output voltage by high precision D/A converter.

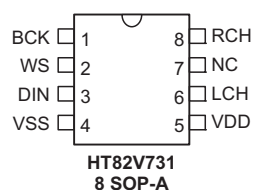
With its excellent frequency response characteristics, the HT82V731 provides users a low cost means of im-

plementing high quality audio voltage outputs. Besides, its wide supply voltage range from 2.4V to 5.5V makes the device also suitable for use in battery-powered systems or in application areas with low current consumption requirements. It is compatible with TDA1311 and available in 8-pin SOP package.

## Block Diagram



## Pin Assignment



**Pin Description**

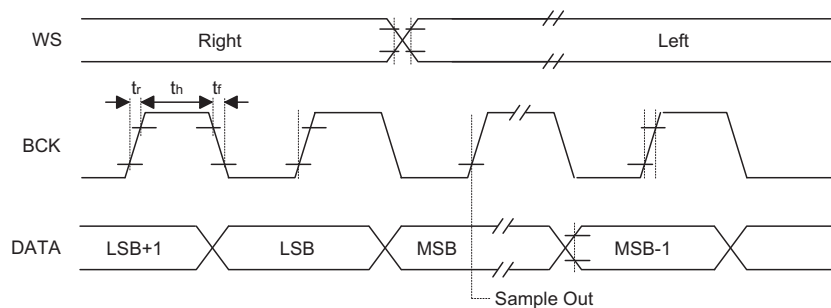
Pin No.	Pin Name	I/O	Description
1	BCK	I	Bit serial clock input
2	WS	I	Word select input
3	DIN	I	Data input
4	VSS	—	Negative power supply, ground
5	VDD	—	Positive power supply
6	LCH	O	Left channel output
7	NC	—	No connection
8	RCH	O	Right channel output

**Electrical Characteristics**

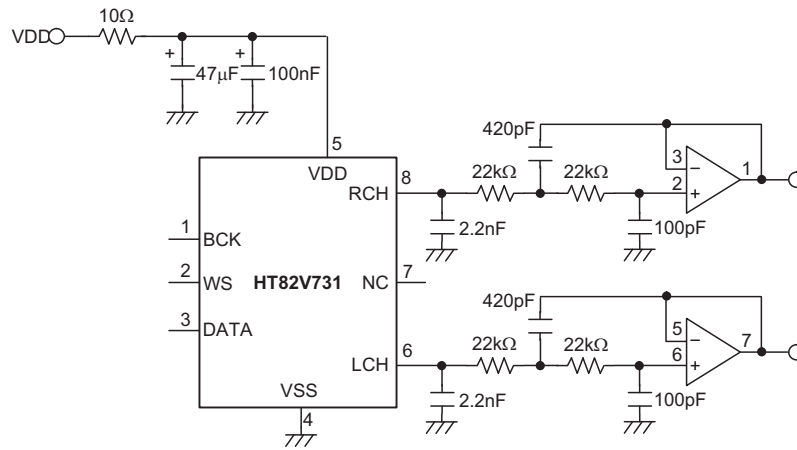
Ta=25°C

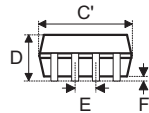
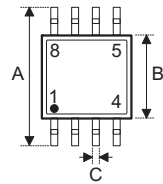
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V <sub>DD</sub>	Conditions				
V <sub>DD</sub>	Supply Voltage	—	—	2.4	5.0	5.5	V
I <sub>DD</sub>	Supply Current	5V	—	—	—	6.0	mA
V <sub>O</sub>	Maximum Output Amplitude	5V	—	—	2.5	—	V <sub>pp</sub>
V <sub>IH</sub>	High-level Input Voltage	5V	—	0.7V <sub>DD</sub>	—	V <sub>DD</sub>	V
		3V					
V <sub>IL</sub>	Low-level Input Voltage	5V	—	0	—	0.3V <sub>DD</sub>	V
		3V					
f <sub>BCK</sub>	Bit Clock Input Frequency	—	—	—	—	18.4	MHz
f <sub>WS</sub>	Word Select Input Frequency	—	—	—	—	300	kHz
THD	Total Harmonic Distortion	5V	1kHz, 0dB*	—	65	—	dB
				—	0.055	—	%
DR	Dynamic Range	5V	—	—	16	—	Bit
S/N	Signal to Noise Ratio	5V	A weighted at DIN code=0000H	—	92	—	dB

Note: "\*" means measured with 1kHz sinewave generated at a sampling rate of 192kHz.

**Timing Diagrams**

**Timing and Input Signals**

Application Circuits



**Package Information**
**8-pin SOP (150mil) Outline Dimensions**


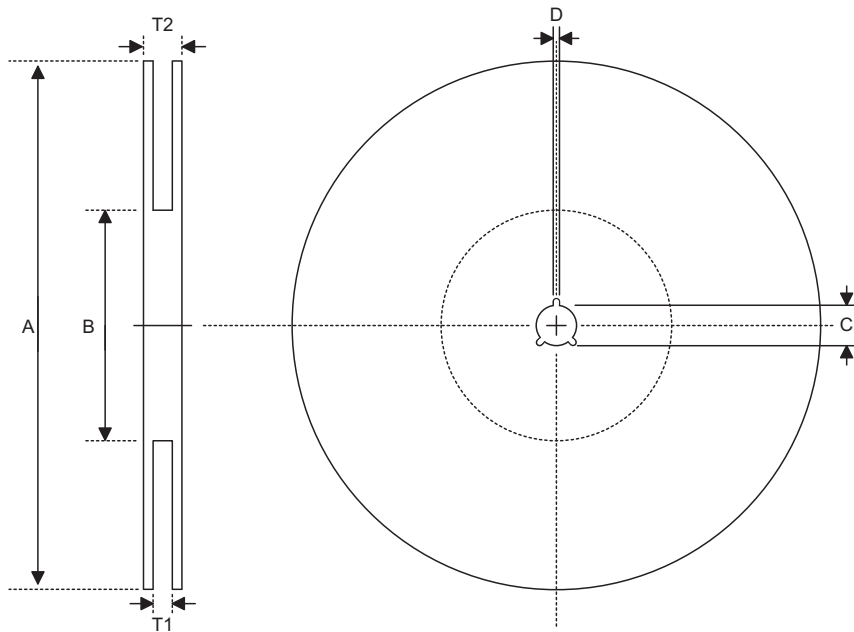
• MS-012

Symbol	Dimensions in inch		
	Min.	Nom.	Max.
A	0.228	—	0.244
B	0.150	—	0.157
C	0.012	—	0.020
C'	0.188	—	0.197
D	—	—	0.069
E	—	0.050	—
F	0.004	—	0.010
G	0.016	—	0.050
H	0.007	—	0.010
$\alpha$	0°	—	8°

Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	5.79	—	6.20
B	3.81	—	3.99
C	0.30	—	0.51
C'	4.78	—	5.00
D	—	—	1.75
E	—	1.27	—
F	0.10	—	0.25
G	0.41	—	1.27
H	0.18	—	0.25
$\alpha$	0°	—	8°

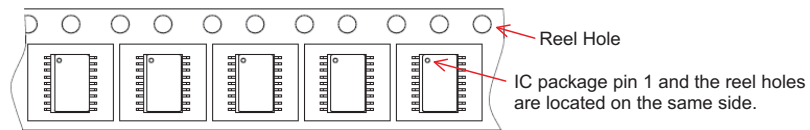
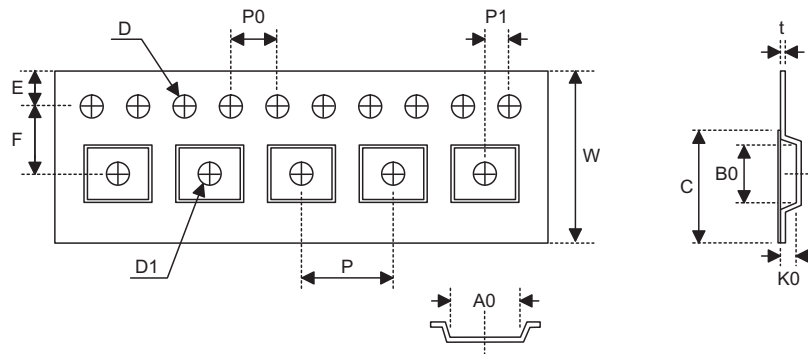
**Product Tape and Reel Specifications**

**Reel Dimensions**



SOP 8N

Symbol	Description	Dimensions in mm
A	Reel Outer Diameter	330.0±1.0
B	Reel Inner Diameter	100.0±1.5
C	Spindle Hole Diameter	13.0 <sup>+0.5/-0.2</sup>
D	Key Slit Width	2.0±0.5
T1	Space Between Flange	12.8 <sup>+0.3/-0.2</sup>
T2	Reel Thickness	18.2±0.2

**Carrier Tape Dimensions**

**SOP 8N**

Symbol	Description	Dimensions in mm
W	Carrier Tape Width	12.0 <sup>+0.3/-0.1</sup>
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	1.50 <sup>+0.25/-0.00</sup>
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	0.30±0.05
C	Cover Tape Width	9.3±0.1

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