

AN7395K, AN7395S

Spatializer IC

■ Overview

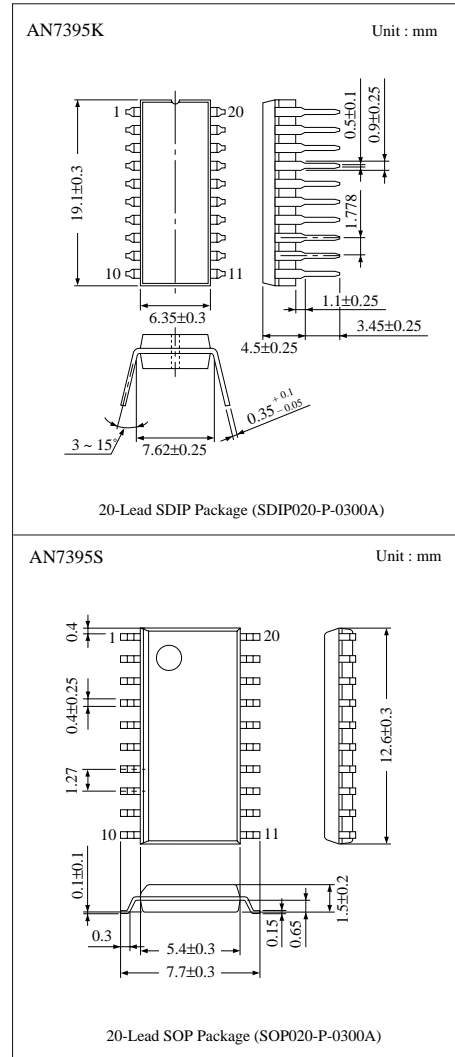
AN7395K and AN7395S developed for the consumer electronics and multimedia markets, the Spatializer integrated circuit is based on Desper Prodcets multi-channel PRO Spatializer® 3D Audio Production System. The AN7395K and AN7395S make use of this innovative technology to enhance and expand the sound from conventional two-speaker systems.

■ Features

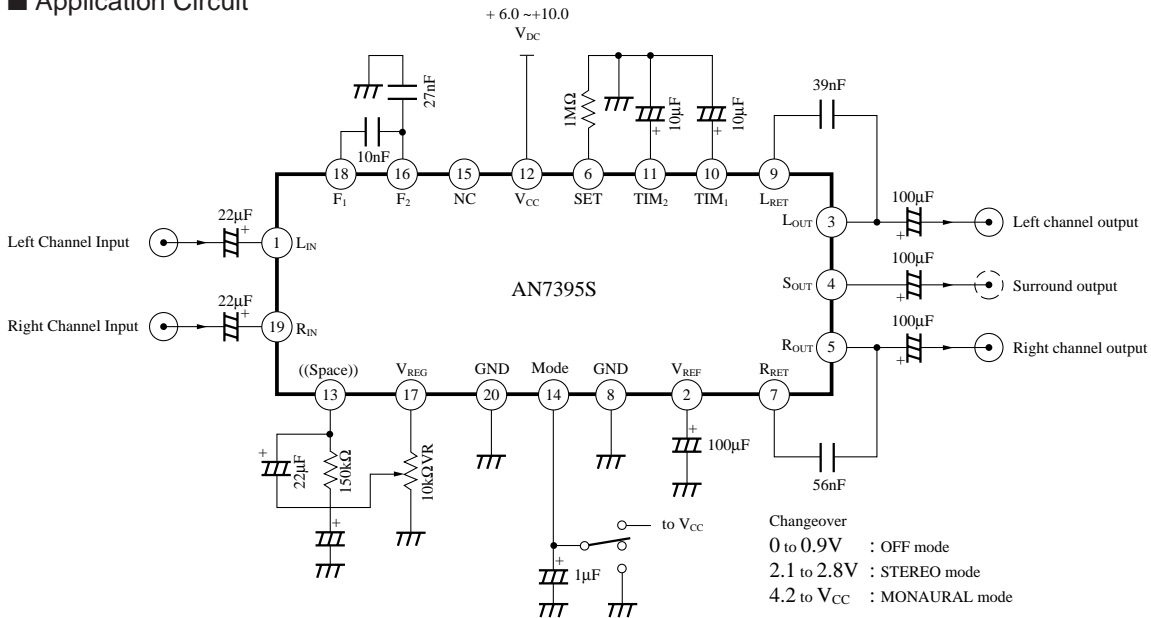
- Profound three-dimensional spatial sound with conventional two-speaker system
- Audio signal recorded through this IC reproducible by ordinary stereo unit
- Optimization of enhancement effect
- Sound expansion variably controllable
- Pseudo stereo effect with monaural sound signal
- Positioning/Shift of individual sound source along 270 degrees arc in real time

■ Application

- Computer sound board
- Active speaker system
- Multi-media equipment for home
- Desk-top type TV meeting unit
- HiFi unit (amp., preamp.)
- Stereo TV and video
- Portable audio equipment
- Car audio
- Converter for cable or satellite broadcasting
- Video game for home and business



■ Application Circuit



■ Product Specification Outline Table

Main Characteristics ($V_{CC} = 9V$, $f = 1kHz$, $T_a = 25^\circ C$)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Total Circuit Current	I_{tot}	$V_{in} = 0mV$	5	11	17	mA
Maximum Input Voltage	$V_{in(max)}$	L_{in}, R_{in} THD = 1% Note 3)	2.0	2.8	—	Vrms
Output Noise Voltage Note 1)	V_{no}	L_{out}, R_{out} $R_g = 4.7k\Omega$ Note 4)	—	20	100	μV_{rms}
Total Harmonics Distortion Note 2)	THD	L_{out}, R_{out} $V_{in} = 400mV$ Note 3)	—	0.05	0.3	%
Input Resistance	R_{IN}	—	—	50	—	k Ω

Note 1) Measured through filter of A characteristic curve

Note 2) Measured through 15Hz to 30kHz (12dB/OCT) filter

Note 3) Mode : ST $L_{in} + R_{in}$ ((Space)) MIN

Note 4) Mode : ST ((Space)) MIN

■ Operational Description

The AN7395K and AN7395S are respectively equipped with the following devices :

• Type E Spatializer (Spatial Expansion)

It uses the ordinary stereo record and broadcasting as a sound source and can offer sound expansion exceeding speaker location. →It provides natural sound effect which can not be obtained only with conventional two-speaker stereo system. Sound image positioned at the center does not move at all, and music instruments and sound positioned to left and right surround listeners. The surround stage can be created, exceeding location of two speakers. Real three-dimensional sound field can be created by ambience sound. Listeners feel as if no speakers exist.

• Type D Spatializer (Directional Positioning)

It can position or shift the individual sound source along 270° arc in real time for example at game play or reproduction. →The AN7395K and AN7395S can support almost infinite number of inputs. They require only the function panning these signals between L and R. These ICs can be easily incorporated in the video game machine or sound board of computer and thereby the sound source can be controlled in three dimensions without DSP.

• Type S Spatializer (Spatial Synthesis)


Though almost all the sound of computer, video game or multi-media uses mono-source, playback is often performed by the stereo unit. The spatializer can give the mono-source profoundness and realism, providing the natural and comfortable pseudo stereo effect.

■ Miscellaneous

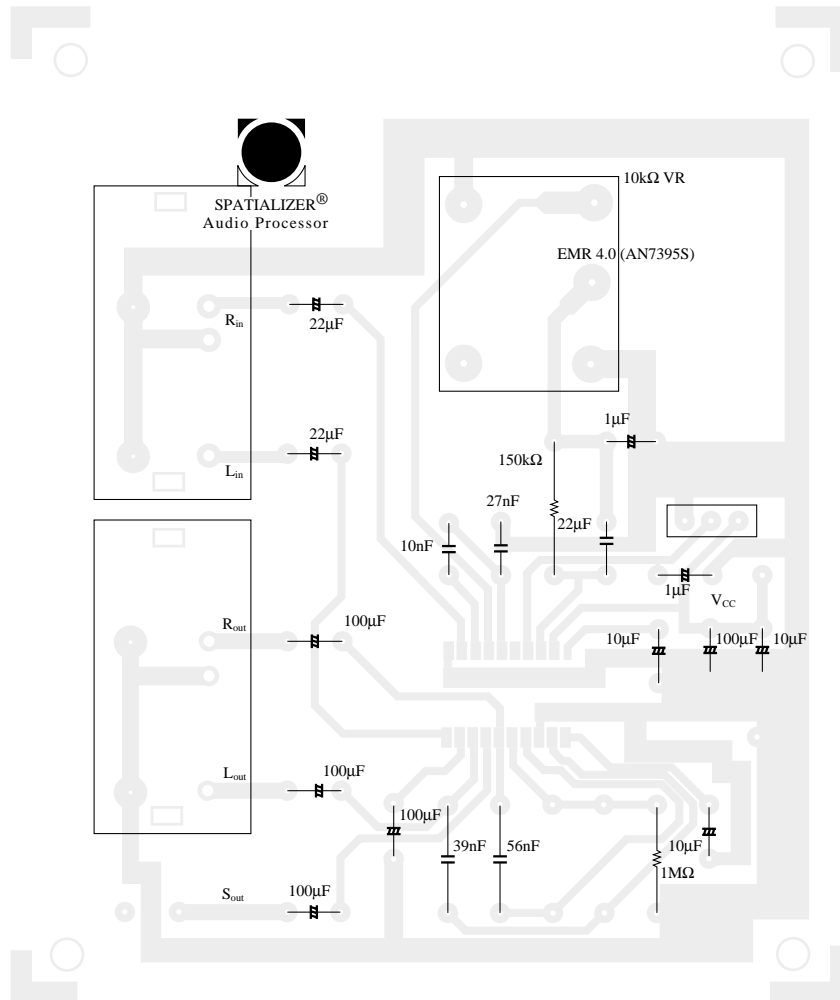
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JAPAN OFFICE
 Desper Products Inc.
 Tokyo Office
Mr. Masaya Ishikawa
 Far East Manager
 1-15-4-201
 Sasazuka, Shibuya-ku, Tokyo, 151-0073 Japan
 TEL : +81-3-5454-1140
 FAX : +81-3-5790-5394
 E-mail : Mishi-kawa@classic.msn.com

USA OFFICE
 Desper Products Inc.
 SiliconValley Offices
Mr. Mark Markunas
 OEM Account Manager
 453Ranvendale Drive, Suite C
 Mountain view, CA 94118
 TEL : (415)428-0400Ext207
 FAX : (415)428-1064
 E-mail : mmarkunas@spatializer.com

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■ Printed Circuit Board Layout





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