

AN7375N, AN7375NS

Low Voltage Dual Dolby* B-type Noise Reduction Processors

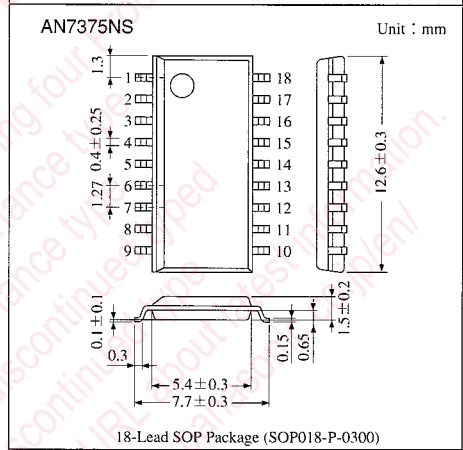
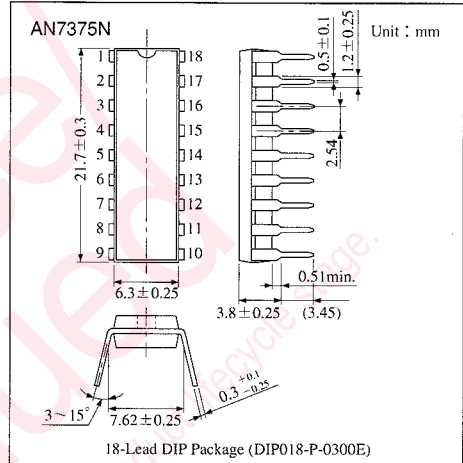
Overview

The AN7375N and the AN7375NS are the integrated circuits designed for dolby B type noise reduction system of low voltage operation. Two channels built-in one chip enable easy stereo construction.

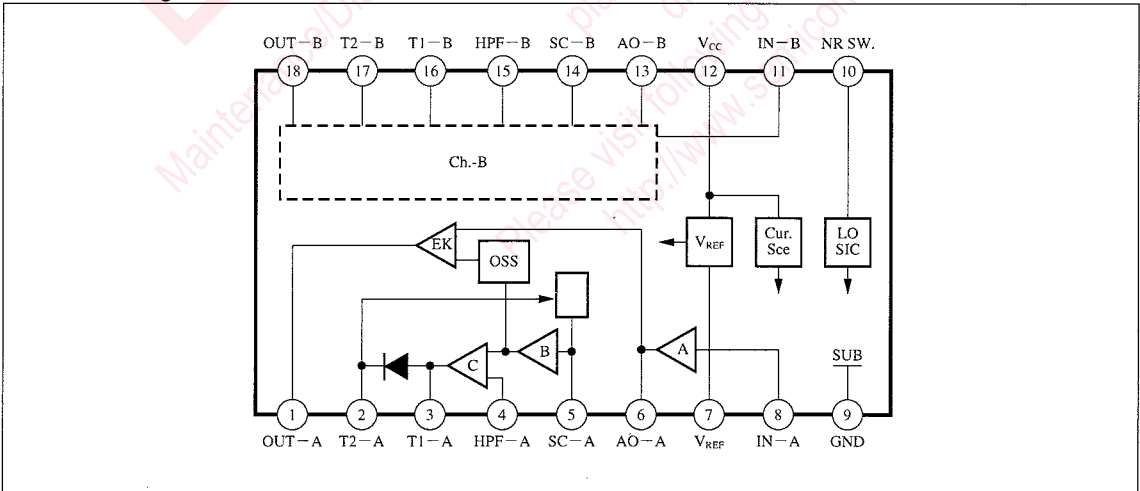
Features

- Low voltage operation : 1.8~4.5V
- Low current consumption : 4mA type.
- Fewer external components
- Dolby ON/OFF switch built-in.

* "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.



Block Diagram



ICs for Cassette Deck

Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	Output (Ch.A)	10	NR ON/OFF Switch
2	Time Constant - 2 (Ch.A)	11	Input (Ch.B)
3	Time Constant - 1 (Ch.A)	12	Power Supply
4	High Pass Filter (Ch.A)	13	Input Amp. Output (Ch.B)
5	Side Chain Input (Ch.A)	14	Side Chain Input (Ch.B)
6	Input Amp. Output (Ch.A)	15	High Pass Filter (Ch.B)
7	Reference Voltage	16	Time Constant - 1 (Ch.B)
8	Input (Ch.A)	17	Time Constant - 2 (Ch.B)
9	GND	18	Output (Ch.B)

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	6	V
Supply Current	I _{CC}	10	mA
Power Dissipation (Ta = 75°C)	P _D	60	mW
Operating Ambient Temperature	T _{opr}	-20 ~ +75	°C
Storage Temperature	AN7375N	-55 ~ +150	°C
	AN7375NS	-55 ~ +125	°C

Electrical Characteristics (V_{CC} = 3V, Ta = 25°C ± 2°C) *1, *2

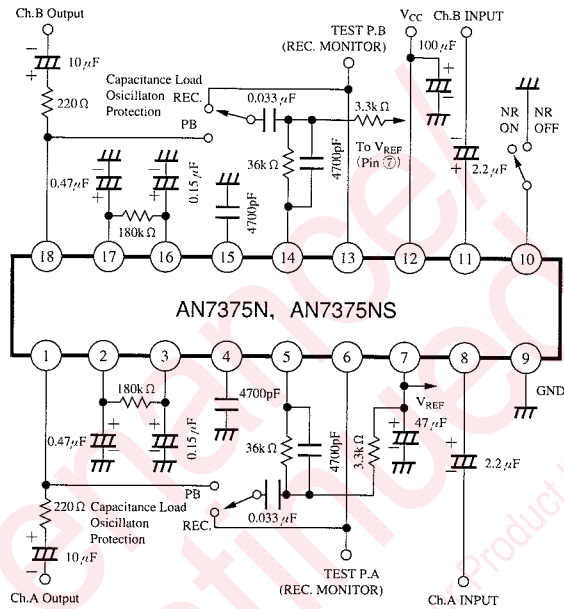
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Total Circuit Current	I _{tot}	REC. NR OFF non-signal	—	4.0	6.0	mA
Input Amp. Gain	G _{VA}	Pin⑧ - ⑥, Pin⑪ - ⑬, V _{in} = 1kHz, 0dB	10.0	11.0	12.0	dB
Recording Frequency Characteristics - 1	f _{C(R-1)}	REC. NR ON, V _{in} = 1kHz, -20dB	2.7	4.2	5.7	dB
Recording Frequency Characteristics - 2	f _{C(R-2)}	REC. NR ON, V _{in} = 1kHz, -40dB	5.2	6.2	7.2	dB
Recording Frequency Characteristics - 3	f _{C(R-3)}	REC. NR ON, V _{in} = 5kHz, 0dB	-0.7	0.3	1.3	dB
Recording Frequency Characteristics - 4	f _{C(R-4)}	REC. NR ON, V _{in} = 5kHz, -20dB	1.7	3.2	4.7	dB
Recording Frequency Characteristics - 5	f _{C(R-5)}	REC. NR ON, V _{in} = 5kHz, -40dB	9.3	10.3	11.3	%
Total Harmonic Distortion - 1	THD - 1	REC. NR ON, V _{in} = 1kHz, 0dB	—	0.1	0.5	%
Total Harmonic Distortion - 2	THD - 2	PB. NR ON, V _{in} = 1kHz, 0dB	—	0.1	0.5	dB
Maximum Output Voltage - 1	V _{O(max-1)} *3	REC. NR ON, f = 1kHz, THD = 1%	12	15	—	dB
Signal to Noise Ratio - 1	S/N - 1	REC. NR ON, R _g = 10kΩ, CCIR/ARM	64	69	—	dB
Signal to Noise Ratio - 2	S/N - 2	PB. NR ON, R _g = 10kΩ, CCIR/ARM	75	85	—	dB
Crosstalk	CT	PB. NR ON, V _{in} = 1kHz, 0dB	50	60	—	dB
Channel Balance	CB	PB. NR ON, V _{in} = 1kHz, 0dB	-1	0	1	dB
Switch Voltage	V _{OFF}	Pin⑩ applied voltage which NR is OFF	—	—	0.3	V

*1 Dolby level = 0dB (Signal level which becomes 100mV output at test point when 400Hz signal is applied to input pin at REC. NR OFF.)

*2 Measure Ch. A and Ch. B.

*3 Measure at V_{CC} = 1.8V.

■ Application Circuit



Note) When users use this product, licensing contract should be made between the Dolby Research Center. Details should be contacted with the following.
 Dolby Research Center : Tokyo Office (Far Eastan Continental Inc.)
 Tel : 03-3584-0039



Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
 - Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
 - Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.