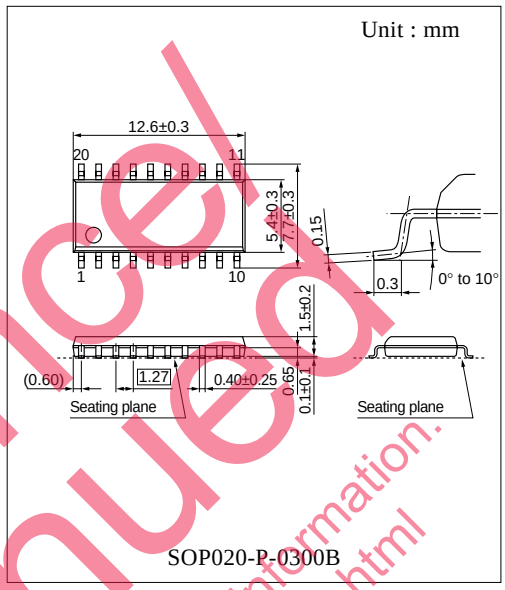
AN7337NS

7-element graphic equalizer IC for Hi-Fi audio equipment

■ Overview

The AN7337NS is a graphic equalizer IC for high performance Hi-Fi audio equipment developed for deck. It incorporates an output buffer circuit and 7 resonance buffer circuits, and can set resonance frequency by external capacitor.



SOP020-P-0300B

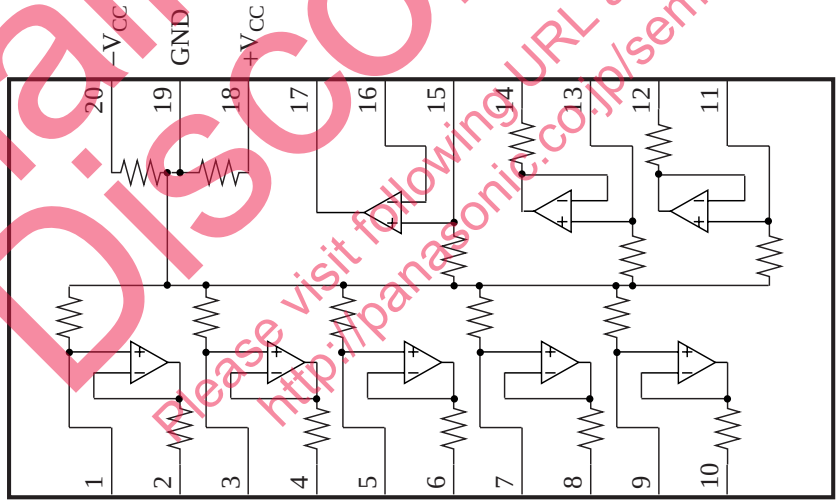
■ Features

- Low distortion (max.: 0.03%)
- Low noise voltage (input short circuit: max.: 30 µV[rms])
- High output voltage (typ. 9.5 V)

■ Applications

- Mini-component stereo, system component stereo

■ Block Diagram



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■ Pin Descriptions

Pin No.	Description	Pin No.	Description
1	In 1	11	In 6
2	NF 1	12	NF 6
3	In 2	13	In 7
4	NF 2	14	NF 7
5	In 3	15	Non-inverting input
6	NF 3	16	Inverting input
7	In 4	17	Output
8	NF 4	18	+ V_{CC}
9	In 5	19	GND
10	NF 5	20	– V_{CC}

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	± 18	V
Supply current	I_{CC}	± 50	mA
Power dissipation *2	P_D	230	mW
Operating ambient temperature *1	T_{opr}	–20 to +75	°C
Storage temperature *1	T_{stg}	–55 to +125	°C

Note) ∗1 : All items are at T_a = 25°C, except for the operating ambient temperature and storage temperature.
∗2 : Referring to "■ Technical Information" for power dissipation at T_a = 75°C, use the circuit under the conditions of the $V_{CC} \times I_{CC}$ is not exceeding the $P_D$max.

■ Recommended Operating Range

Parameter	Symbol	Range	Unit
Supply voltage	V_{CC}	± 4.0 to ± 18.0	V

■ Electrical Characteristics at V_{CC} = ±15 V, T_a = 25°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Total circuit current	I_{CC}	V_{IN} = 0 mV	8	12	16	mA
Voltage gain FLAT	$G_{V(FLAT)}$	f = 1 kHz, V_{IN} = –10 dBm	– 0.6	– 0.3	0	dB
Voltage gain BOOST	G_V (BOOST)	FLAT V_O = 0 dB, V_{IN} = –10 dBm	10.4	12.0	14.0	dB
Voltage gain CUT	$G_{V(CUT)}$	FLAT V_O = 0 dB, V_{IN} = –10 dBm	–14.0	–12.0	–10.4	dB
Total harmonic distortion	THD	f = 1 kHz, V_O = 1 V[rms]	–	0.002	0.03	%
Max. output voltage	V_{OM}	f = 1 kHz, THD = 0.1%	8.0	9.5	–	V[rms]
Output noise voltage	V_{NO}	Input short circuit DIN AUDIO	–	4	30	µV[rms]
Output noise voltage	V_{NOM}	Input short circuit DIN AUDIO All Boost	–	31	100	µV[rms]

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■ Electrical Characteristics at V_{CC} = ±15 V, T_a = 25°C (continued)

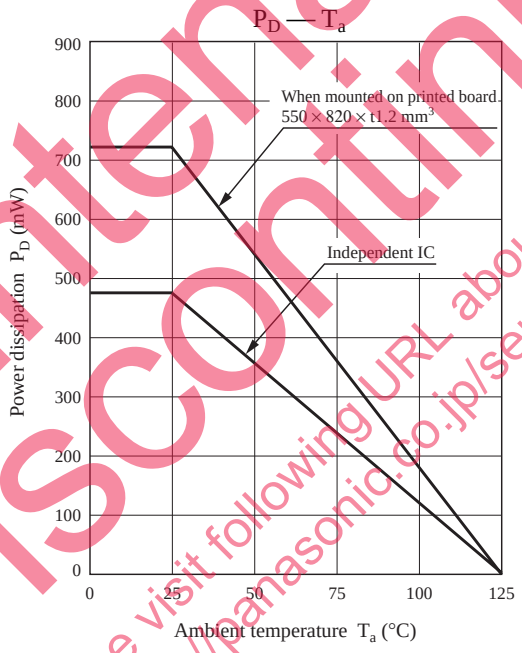
• Design reference data

Note) The following characteristics are the reference values for design and not guaranteed values.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Resonance frequency	f_{O1}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	47.3	57	73.6	Hz
Resonance frequency	f_{O2}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	93.3	113	145	Hz
Resonance frequency	f_{O3}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	285	347	444	Hz
Resonance frequency	f_{O4}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	0.851	1.04	1.32	kHz
Resonance frequency	f_{O5}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	1.98	2.41	3.08	kHz
Resonance frequency	f_{O6}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	5.23	6.37	8.14	kHz
Resonance frequency	f_{O7}	V_{IN} = −10 dBm, $V_O = G_{V\ PEAK}$	12.4	15.1	19.3	kHz

■ Technical Information

• P_D — T_a curves of SOP020-P-0300B



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