

# HS3308 LINEAR INTEGRATED CIRCUIT

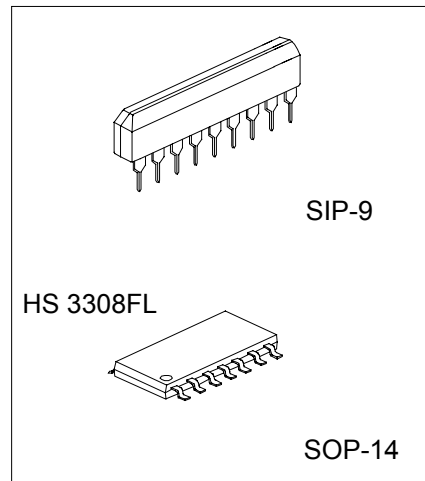
## DUAL EQUALIZER AMPLIFIER WITH ALC

### DESCRIPTION

The HS3308 is a monolithic integrated circuit, consisting of dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette tape recorders.

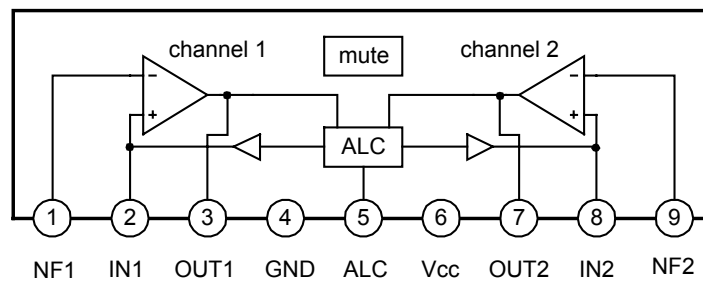
### FEATURES

- \*Dual equalizer amplifier with built-in ALC circuit
- \*Low noise  $V_{NI}=1.0\mu V$ (Typical)
- \*High open loop voltage gain:  $G_v=80dB$ (Typical)
- \*Good ALC response balance between channels
- \*Not necessary the input coupling capacitor
- \*Not necessary the diode or transistor for ALC
- \*Built in power supply muting circuit
- \*Minimum number of external parts required



### BLOCK DIAGRAM

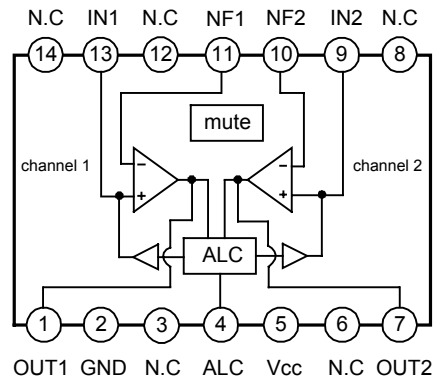
#### SIP-9



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SOP-14



## ABSOLUTE MAXIMUM RATING(Ta=25°C)

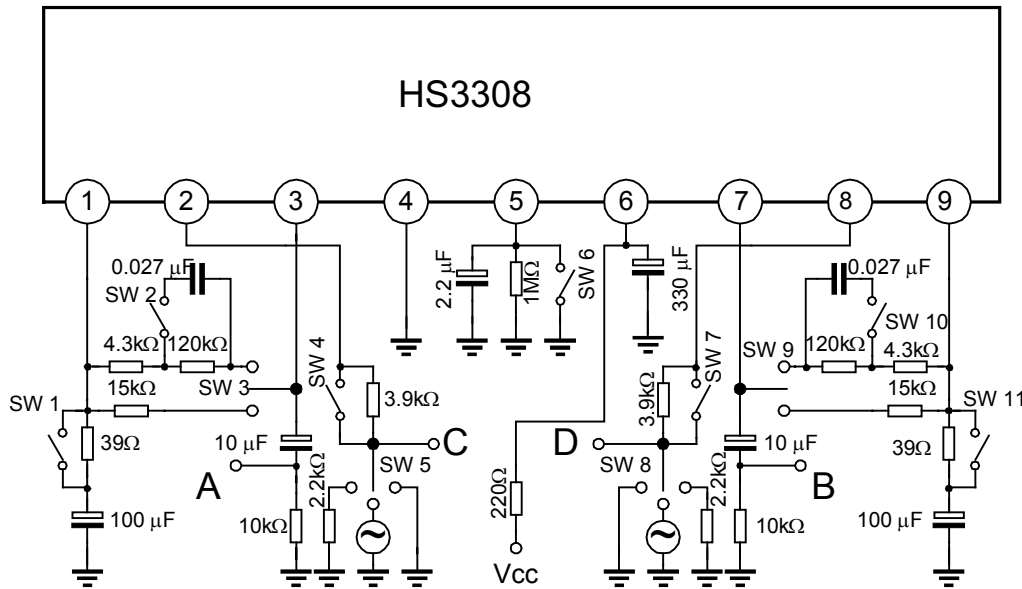
PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V <sub>CC</sub>	16	V
Operating Temperature	T <sub>OPR</sub>	-20 ~ 75	°C
Storage Temperature	T <sub>STG</sub>	-20 ~ 125	°C
Power Dissipation			
SIP-9	P <sub>D</sub>	550	mW
SOP-14		450	

## ELECTRICAL CHARACTERISTICS(Ta=25°C, Vcc=7V, f=1KHZ, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Circuit Current	I <sub>CCQ</sub>	V <sub>I</sub> =0	1.5	3.5	4.5	mA
Open Loop Voltage Gain	G <sub>VO</sub>	V <sub>O</sub> =0.3V	70	80		dB
Closed Loop Voltage Gain	G <sub>VC</sub>	V <sub>O</sub> =0.3V	45	48	50	dB
Output Voltage	V <sub>O</sub>	THD=1%	0.6	1.2		V
Total Harmonic Distortion	THD	V <sub>O</sub> =0.3V		0.1	0.3	%
Input Noise Voltage	V <sub>NI</sub>	R <sub>G</sub> =2.2KΩ BW(-3dB)=20HZ-20KHZ		1.0	2.0	μV
Input Resistance	R <sub>I</sub>		15	25	45	kΩ
ALC Range	ΔV <sub>ALC</sub>	R <sub>O</sub> =3.9KΩ, THD=10%	40	45		dB
ALC Balance	CB <sub>ALC</sub>	V <sub>I</sub> =1mV		0	2.5	dB

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## TEST CIRCUIT

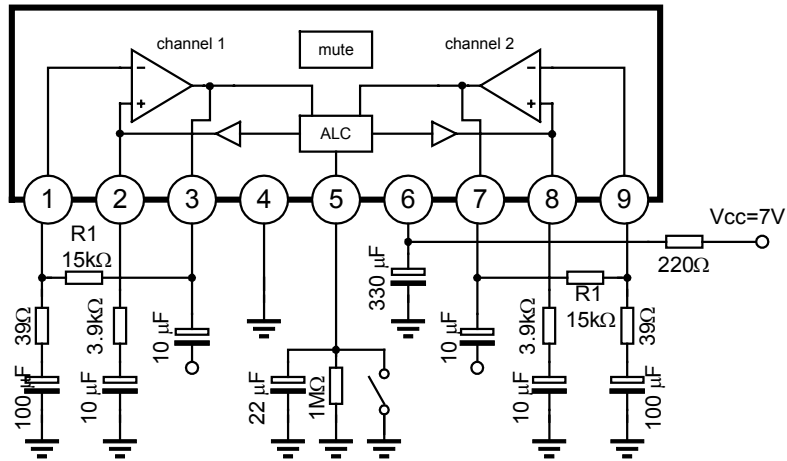


## TEST METHOD

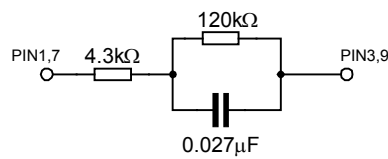
SYMBOL	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	SW11
I <sub>CCQ</sub>	ON	OFF	1	ON	3	ON	ON	3	1	OFF	ON
G <sub>VO</sub>	ON	OFF	1	ON	1	ON	ON	3	1	OFF	ON
G <sub>VC</sub>	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
THD	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V <sub>O</sub>	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V <sub>NI-1</sub>	OFF	ON	1	ON	2	ON	ON	3	1	OFF	ON
V <sub>NI-2</sub>	ON	OFF	1	ON	3	ON	ON	2	1	ON	OFF
ΔV <sub>ALC</sub>	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB <sub>ALC</sub>	OFF	OFF	2	OFF	1	OFF	OFF	1	2	OFF	OFF

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## APPLICATION CIRCUIT

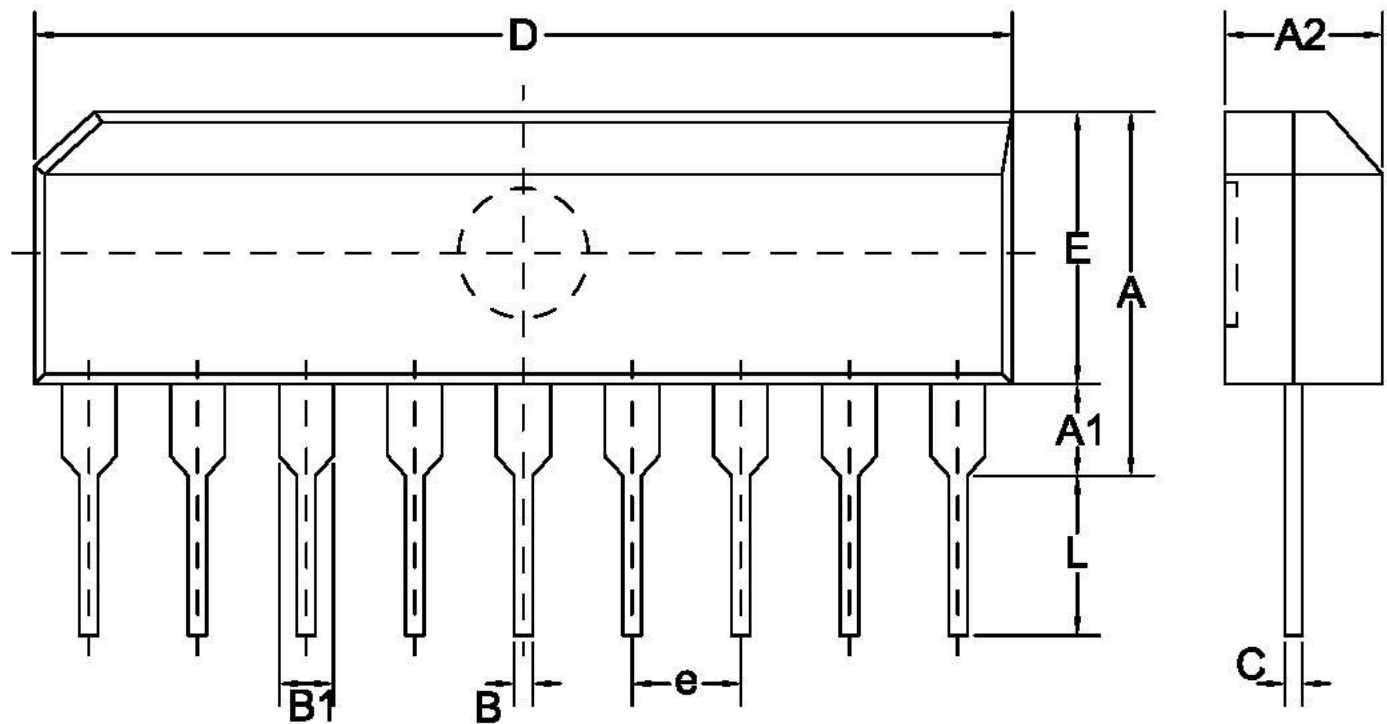


Note: On playback, connect the time constant circuit as follows below, instead of R1 of PINS 1,3, 7,9, which are used in the NAB.



# 產品尺寸圖 (DIMENSION)

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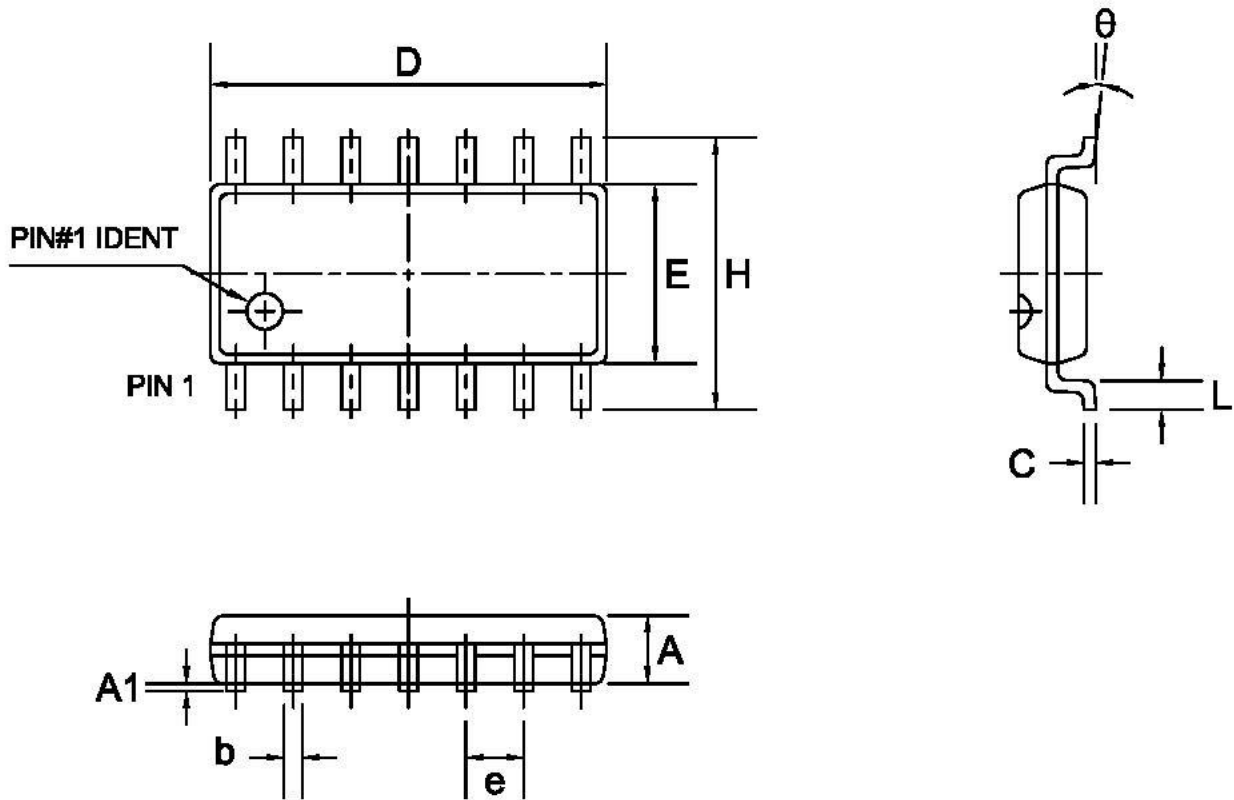
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Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	Nom	Max	Min	Nom	Max
A	7.20	—	—	0.283	—	—
A1	1.75	—	—	0.069	—	—
A2	3.05	3.20	3.35	0.120	0.126	0.132
B	0.40	0.50	0.60	0.016	0.020	0.024
B1	1.10	1.20	1.30	0.043	0.047	0.051
C	0.20	0.28	0.36	0.008	0.011	0.014
D	22.25	22.40	22.55	0.876	0.882	0.888
E	5.45	5.60	5.75	0.215	0.220	0.226
e	2.44	2.54	2.64	0.096	0.100	0.104
L	3.00	3.30	3.60	0.118	0.130	0.142

PACKAGE

SIP-9

# 產品尺寸圖 (DIMENSION)



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Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	Nom	Max	Min	Nom	Max
A	1.30	1.50	1.70	0.051	0.059	0.067
A1	0.08	0.16	0.24	0.003	0.006	0.009
b	0.30	0.40	0.55	0.012	0.016	0.022
C	0.15	0.25	0.35	0.006	0.010	0.014
D	8.25	8.55	8.85	0.325	0.337	0.348
E	3.75	3.95	4.15	0.148	0.156	0.163
e	1.15	1.27	1.39	0.045	0.050	0.055
H	5.70	6.00	6.30	0.224	0.236	0.248
L	0.45	0.85	0.85	0.018	0.026	0.033
$\theta$	0°	—	8°	0°	—	8°

PACKAGE

SOP-14