ALC109 ALARM SYSTEM

PRIORITY ENCODED ALARM SYSTEM FOR MEDICAL DEVICES

Rev. 04 — 28 November 2013

Product data sheet

1. General description

The ALC109 is a hybrid priority encoded audio alarm, available in low cost packages, based on a high performance architecture that executes instructions quickly. Many functions have been incorporated into the ALC109 in order to reduce component count, board space, and system cost. The audio quality is maintained by ensuring at least four harmonics.

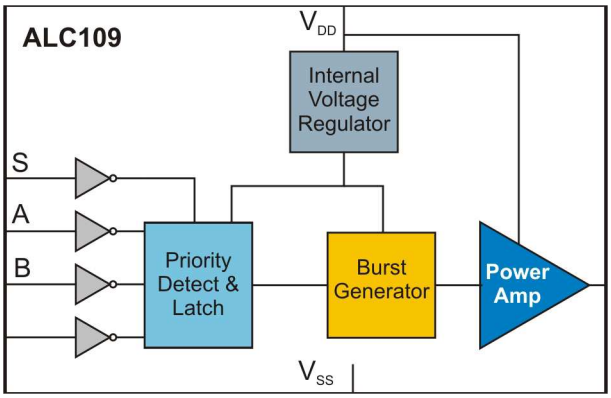
2. Features

- Two BCD inputs to select the priority
- Strobe to trigger the alarm
- Three priority encoded alarms, HIGH, MEDIUM, LOW and also a general purpose alarm.
- Inbuilt high performance audio power amplifier
- Drives 8Ω speaker directly. No other external components required
- Operates on single 5V supply
- Low standby current
- Simple modified polarized 28-pin DIP footprint

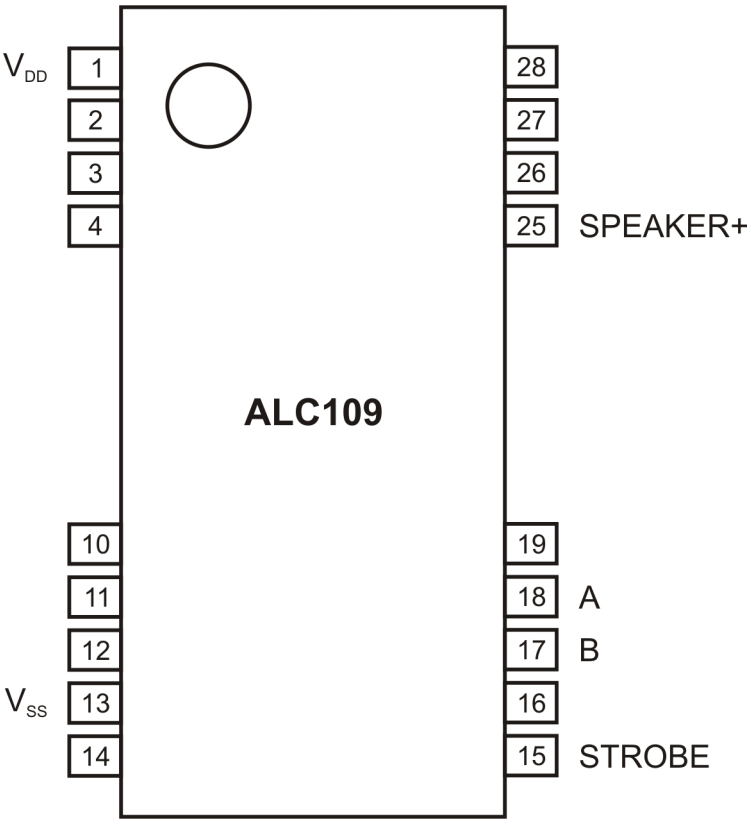
3. Ordering information

Type number	Package	Description	Version	Packing information
ALC109	28-pin DIPMP	Hybrid carrier, 18 leads	1.9	25 pcs.

4. Block diagram



5. Pinning information



6. Pin description

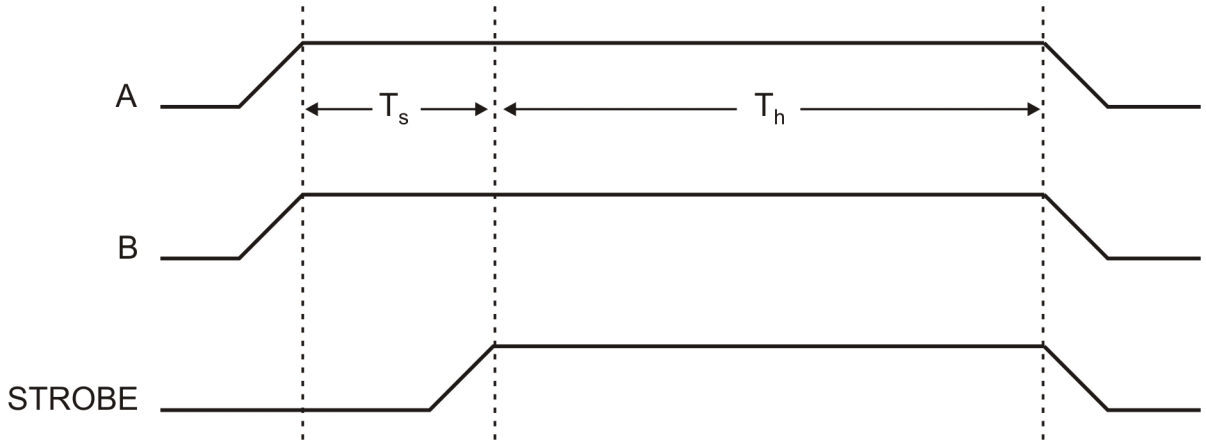
Symbol	Pin	Type	Description
VDD	1	Supply	VDD
	2-4	NC *	No connection
	10-12	NC *	No connection
VSS	13	Supply	VSS
	14	NC *	No connection
STROBE	15	I	Strobe to trigger the alarm set by the A, B and C inputs
	16	NC *	No connection
B	17	I	Input B
A	18	I	Input A

I = Input, O = Output, NC = No connection
* No connection pins should be left unconnected

7. Logic table

A	B	Priority
0	0	HIGH
1	0	MEDIUM
0	1	LOW
1	1	GENERAL

8. Timing diagram



9. Electrical and timing characteristics

V_{DD} = 4.8 V to 5.2 V unless otherwise specified.
T_{amb} = 10 °C to +45 °C

Symbol	Parameter	Min	Typ	Max	Unit
V_{DD}	Supply voltage [1]	4.8	5.0	5.2	V DC
I_{DD}(oper)	Operating supply current	-	820	-	mA
I_{DD}(idle)	Idle mode supply current	-	19	-	mA
V_{SIG}	Signal input voltage [2]	-	3.3	3.5	V DC
T_{amb}	Ambient temperature	10	-	45	°C
T_s	Strobe delay	30	-	-	µS
T_h	HOLD time	-	2000	-	mS

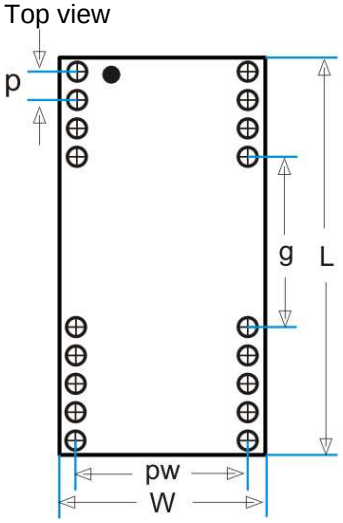
[1] A Nominal Supply Voltage to the circuit is 5 V DC.
[2] The BCD signals A & B and the STROBE are not 5V compliant pins. The Nominal Signal Voltage is 3.3V DC.

10. Functional description

When the A & B inputs set or reset according to the priority required and the STROBE is applied as shown in the Timing diagram, the alarm is triggered only once. The alarm completes one cycle as per the priority and stops. To avoid spurious triggers and retriggers, please follow the Timing diagram critically.

11. PCB footprint

Top view



NOMINAL DIMENSIONS (mm are the original dimensions)

Particulars	Dimension
p	2.54
pw	15.24
g	15.24
W	19.00
L	37.00
Pad hole diameter	1.00

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
1.9	-	-	-			28.11.2013

12. Data sheet status

Document status	Product status	Definition
Product [short] data sheet	PRODUCTION	This document contains the product specification.

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