

Photoelectric Smoke Detectors

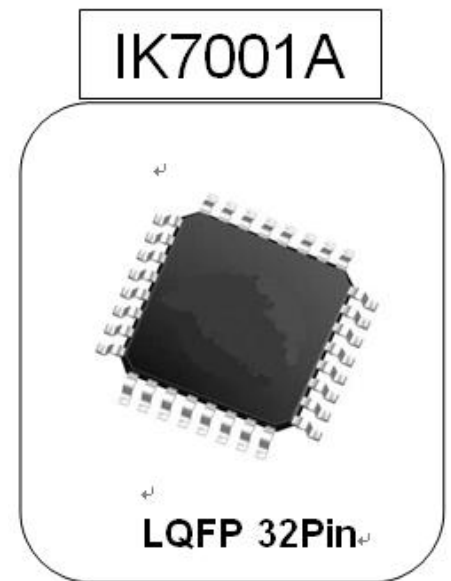
Photoelectric smoke detectors main processor, IK7001 remove the noise of output signal detect the signal level and transfer the alarm signal to power amp if the signal level found as fire.

And main processor check the battery and transfer voice signal to power amp if replacement necessary.

It has interworking function with test button as add-ons.

Test Button can check the working condition of product when supplied initial power, and check the conditions of darkroom, it sounds 'bee- fire' if it works properly.

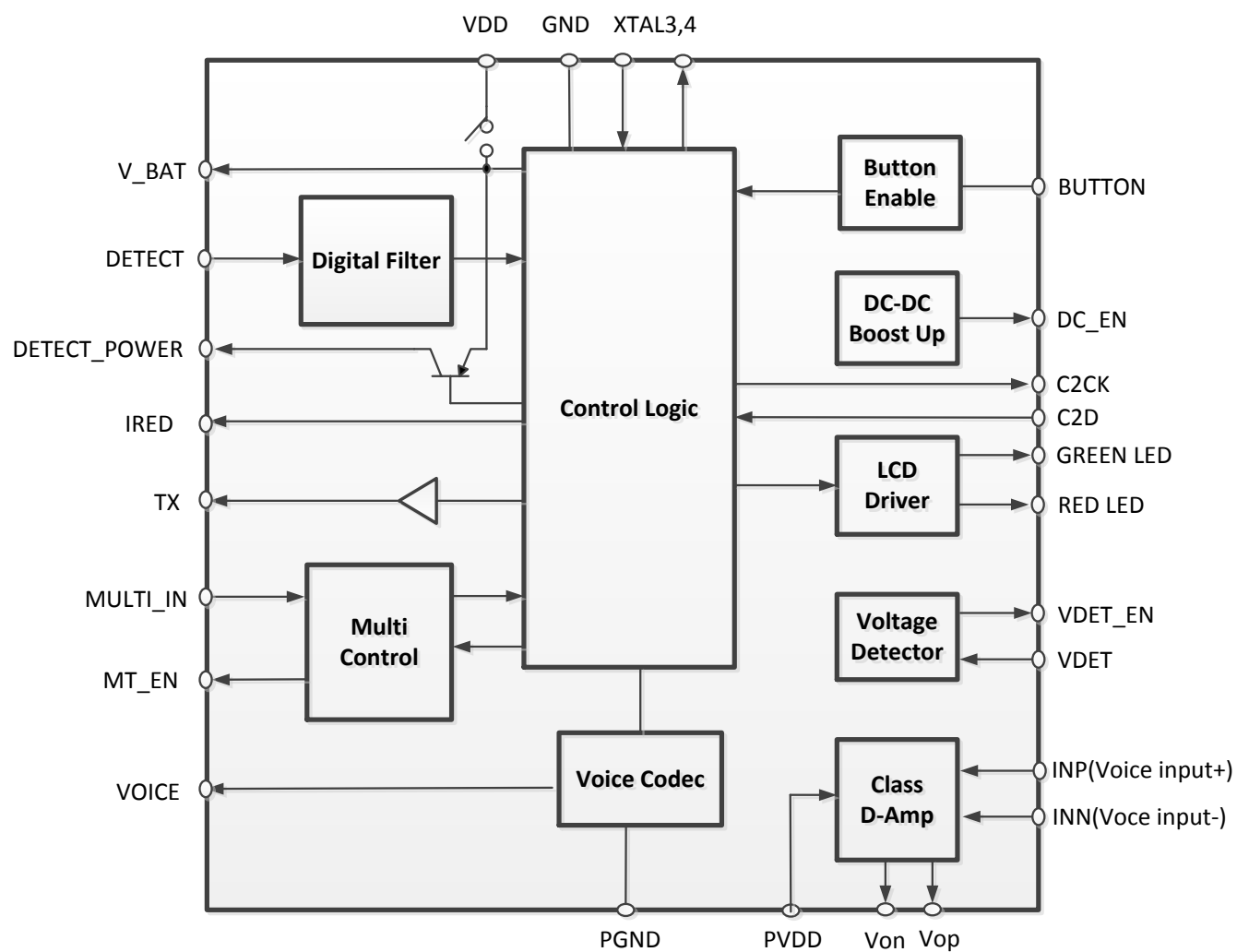
It can be operated in low voltage and current for the use of batteries, and it is a product designed to work for 10 maximum years if designed for the life of battery by using lithium battery.



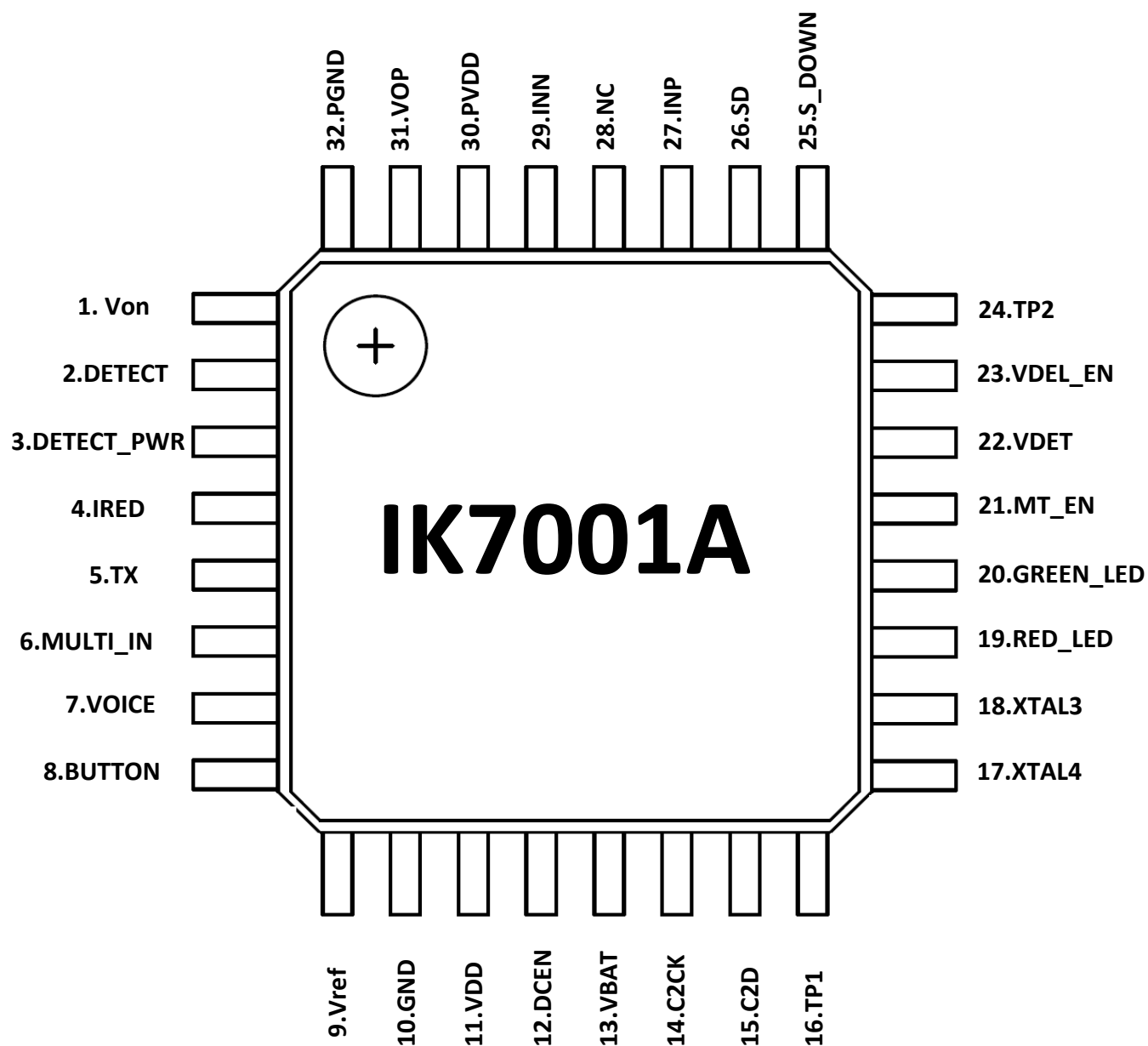
Features

- Low Voltage Operation. (1.8V-3.6V)
- Built-in voice
- Low voltage alarm (voice) output
- Low power consumption
- Chamber sensitivity test feature
- Built-in digital noise filters
- Lithium battery can be used for 10 years

Block Diagram



Pin Description



Pin Number	Pin Name	Description
1	Von	Negative Amp Output pin
2	DETECT	Smoke Level Detect pin
3	DETECT_PWR	Smoke Level Detect Power pin
4	IREDD	IREDD pin
5	TX	This pin output serial data by UART
6	MULTI_IN	Multi Detect pin
7	VOICE	Voice Output of Codec
8	BUTTON	Test Button pin
9	Vref	External Vref Input pin
10	GND	GND
11	VDD	Power Supply for Digital Part
12	DCEN	DC-DC Enable pin
13	VBAT	Battery Supply Voltage pin
14	C2CK	Clock Signal pin
15	C2D	Data Signal pin
16,24	TP1,TP2	Test pin1,2
17,18	XTAL3,XTAL4	32.768 KHz Crystal Select Pin
19,20	RED, GREEN LED	Red/ Green LED pin
21	MT_EN	Multi Enable pin
22	VDET	Voltage Detect pin
23	VDEL_EN	Voltage Detect Enable pin
25	S_DOWN	Amp SD Control pin
26	SD	Shutdown pin
27	INP	Positive Differential Input pin
28	N.C	NOT CONNECT
29	INN	Negative Differential Input pin
30	PVDD	Voice and Class-D Amp Power
31	VOP	Negative Amp Output pin
32	PGND	Voice and Class-D Amp GND

Absolute Maximum Rating

Parameter	Symbol	Condition	Max	Units
Input Voltage	V_{DD}	$T_a=25^{\circ}\text{C}$	3.6	V
Output Current	I_O	Note1	20	mA
Multi Input Voltage	V_{mt}		$V_{DD}+0.2$	V
Ambient Temperature Under Bias	T_a		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-65~150	$^{\circ}\text{C}$
Power Consumption	P_D	$T_c=25^{\circ}\text{C}$	1	W

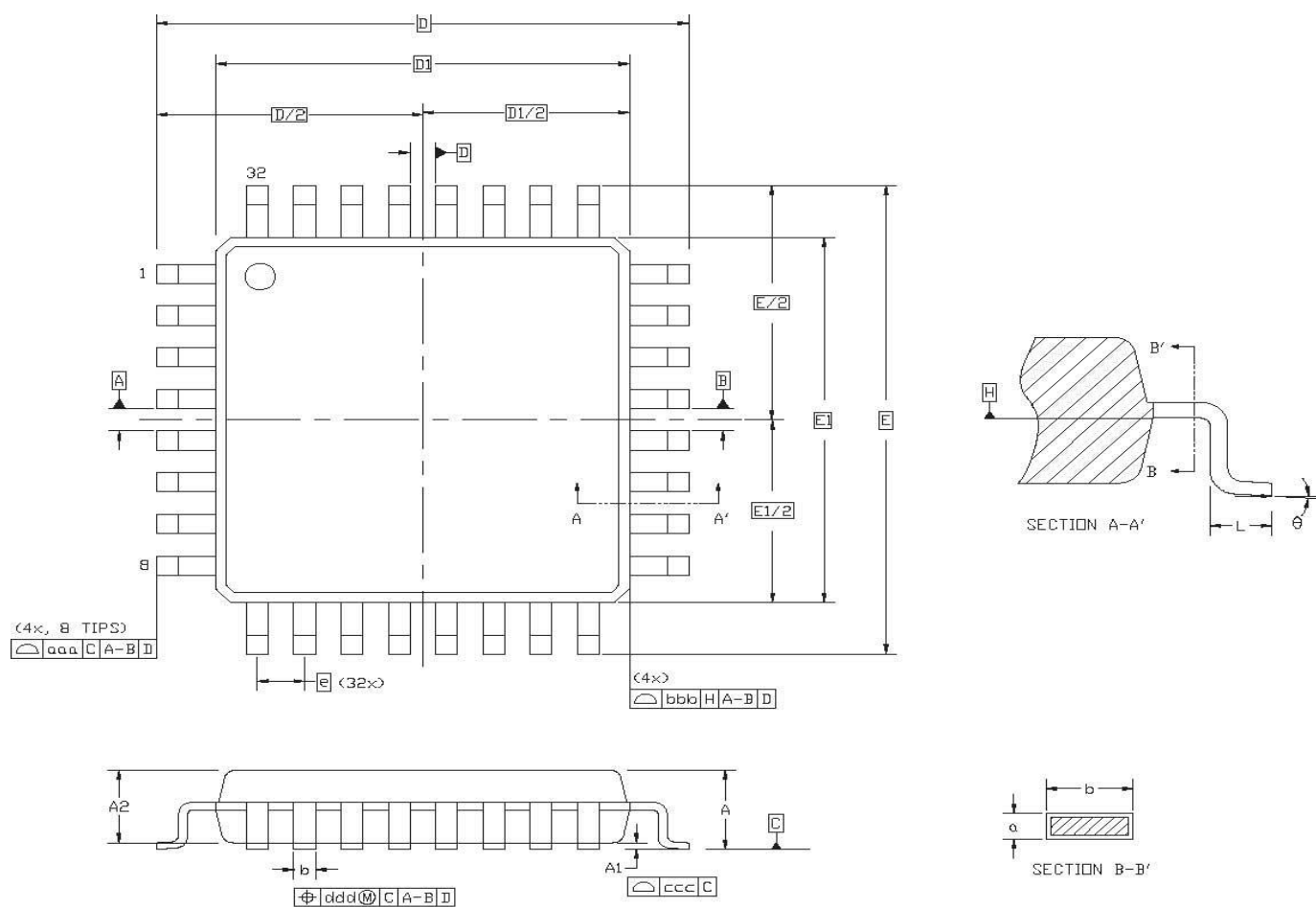
** Note1 : Output → IRED, Pre-Pw, IND1, IND2, PA-ON

Electrical Characteristics

($T_a=25^{\circ}\text{C}$, $V_{DD}=3.0\text{V}$)

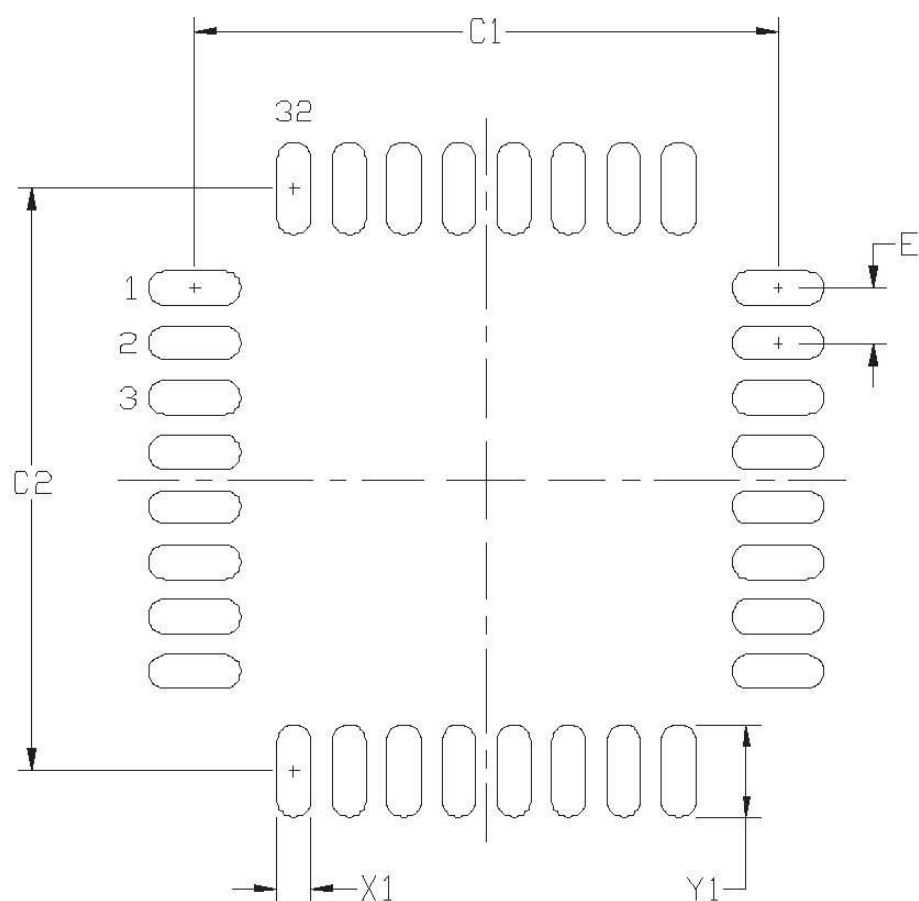
Parameter	Symbol	Condition	min	typ	max	Units
Low Voltage Detect	V_{al}	Litum Battery	2.6	2.7	2.77	V
Digital Supply Current	I_{cc}		-	-	2	μA
Output High Voltage	V_O		$V_{DD} - 0.7$	-	-	V
Input High Voltage	V_{IH}		$V_{DD} - 0.6$	-	-	V
Input Low Voltage	V_{IL}		-	-	0.6	V

Package Dimension



LQFP-32 Package Dimensions

	MM		
	MIN	TYP	MAX
A	—	—	1.60
A1	0.05	—	0.15
A2	1.35	1.40	1.45
b	0.30	0.37	0.45
c	0.09	—	0.20
D	—	9.00	—
D1	—	7.00	—
e	—	0.80	—
E	—	9.00	—
E1	—	7.00	—
L	0.45	0.60	0.75



LQFP-32 PCB Land Pattern Dimensions

Dimension	Min	Max
C1	8.40	8.50
C2	8.40	8.50
E	0.80 BSC	
X1	0.40	0.50
Y1	1.25	1.35

LQFP32 Shipment(No Suffix)

