

# YHM4501

## Tiny Size, Low Power, Low Bias Current OP AMP

### Features

- Single 1.6V to 5.5V Supply Voltage
- Low 18uA Quiescent Current
- 50nA Quiescent Current in Shutdown
- Ultra-Low 0.2pA Bias Current
- Low Input Capacitance: 1.2pF
- Low Input Noise: 1.2uVpp
- Tiny 0.77mm x 1.17mm 6-bump WLP

### Applications

- Battery Powered Consumer Device
- Portable Medical Instrument
- Sensor Interface
- Smoke Detectors

### General Description

The YHM4501 is 1.6V to 5.5V single supply or  $\pm 0.8V$  to  $\pm 2.75V$  dual supply, featuring very low quiescent current and shutdown mode, making it suitable for a broad range of battery-powered applications such as portable medical instruments, portable consumer device, and smoke detectors. A combination of extremely low input bias currents, low input current noise and low input voltage noise allows interface to high-impedance sources such as photodiode and piezoelectric sensors.

The YHM4501 comes in a 2x3 array, 6-bump, 0.35mm pitch, 0.77mmx1.17mm wafer-level package (WLP).

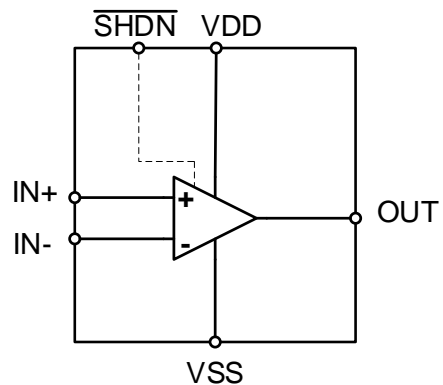


Fig 1. YHM4501 Internal Block Diagram

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### YHM4501 Pin Configurations

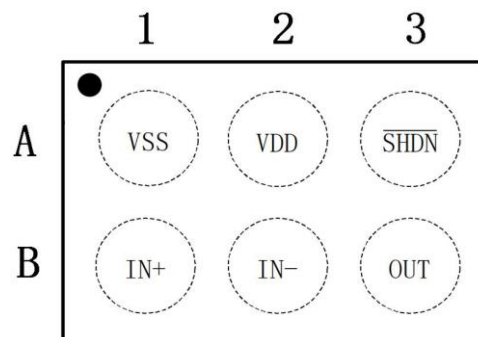


Fig 3. YHM4501 WLP-6 Pin Assignment(Top Through View)

### YHM4501 WLP Pin Descriptions

WLP	Name	Description
A1	VSS	Negative Supply Voltage
A2	VDD	Positive Supply Voltage. Bypass to GND with a 0.1 $\mu$ F capacitor
A3	$\overline{\text{SHDN}}$	Pull to VSS to activate shutdown mode. Keep High to enable AMP
B1	IN+	Positive Input
B2	IN-	Negative Input
B3	OUT	Output

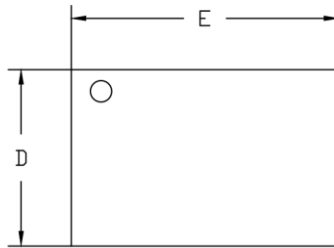
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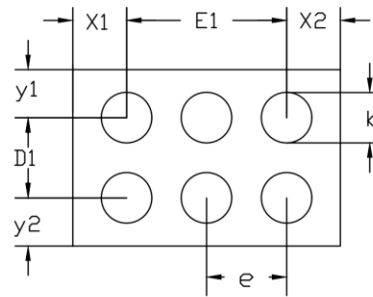


### Package Dimensions

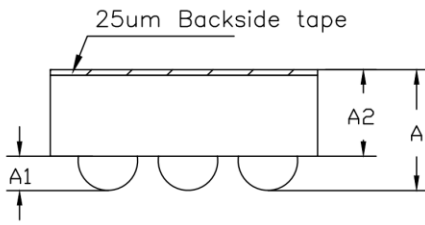
WLCSP-6 0.77x1.17x0.574



TOP VIEW  
(MARK SIDE)



BOTTOM VIEW  
(BALL SIDE)



SIDE VIEW

COMMON DIMENSIONS  
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.529	0.574	0.619
A1	0.130	0.150	0.170
A2	0.399	0.424	0.449
D	0.750	0.770	0.790
D1		0.350BSC	
E	1.150	1.170	1.190
E1		0.700BSC	
b	0.200	0.220	0.240
e		0.350BSC	
x1		0.235 REF	
x2		0.235 REF	
y1		0.210 REF	
y2		0.210 REF	

### Ordering Information

Part Number	Temp Range	Pin Package	Top Mark	MOQ
YHM4501W6T	-40°C to 85°C	6 WLCSP	YWW LOT	3000

T = Tape and reel.

YWW: Date Code. Y = year, WW = week. For example, YWW = 112 means Year 2021, Week 12.

LOT: The last three number of LOTID.