

YHM1106

High Voltage Low Ron Dual Pole Single Throw Switch

Features

- VCCEN voltage range: 1.1V ~ 5.5V
- COM/NO recommend voltage range: -3V~16V
- COMx to NOx On-resistance: typical 110mΩ each
- Max 1.5A continuous current capability each
- Peak 2.5A current (<1ms) capability each
- -106dB THD
- -88dB Off Isolation and -96dB Cross talk
- OTP (Over Temperature Protection)
- Robust ESD capability:
±2kV HBM, ±1kV CDM

Applications

- Smart Phone, AR/VR Device, Tablet PC, Wearable etc.

General Description

The YHM1106 is high voltage low Ron dual pole single throw and bidirectional on/off switches with Max 18V tolerance in COM1/2 and NO1/2 PIN. The high power Class-D audio amplifier's output may go through the switch without attenuation.

The YHM1106 combines enable and supply pin. The switch is on when device is powered. Connect VCCEN to GND to turn-off the switch. The topology of the switch allows the signal over VCCEN without the need of an external discrete components.

The YHM1106 has excellent on-resistance matching (2mΩ Typical) between SPST switch and on-resistance flatness over whole signal range. These ensure perfect linearity and very low distortion for audio signal through.

The YHM1106 comes in a 2x3 array, 6-bump, 0.4mm pitch, 0.815mmx1.17mm wafer-level package (WLP).

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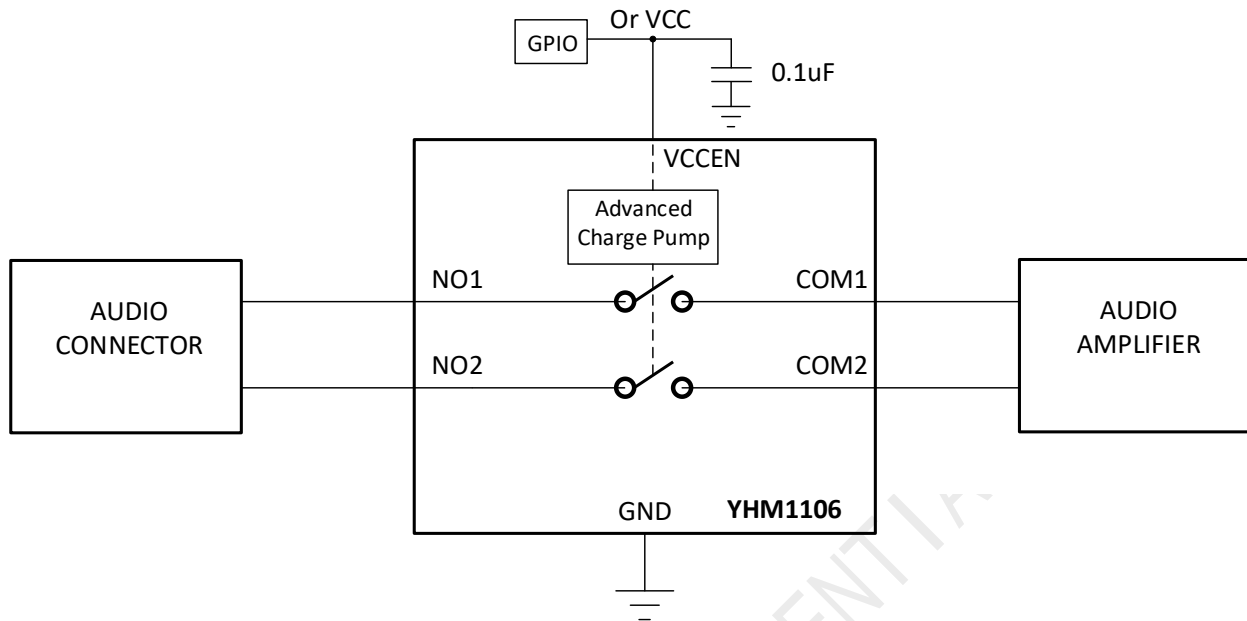


Fig 1. YHM1106 Internal Block and System Diagram

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YHM1106 Pin Configurations

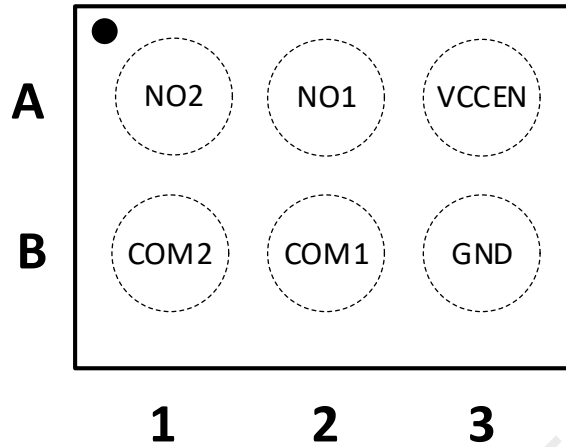


Fig 2. YHM1106 WLP-6 Pin Assignment(Top Through View)

YHM1106 WLP Pin Descriptions

WLP	Name	Description
A1	NO2	Normally Open Terminal for SPST Switch 2
A2	NO1	Normally Open Terminal for SPST Switch 1
A3	VCCEN	Supply Voltage Enable Input, bypass VCCEN to GND with 0.1uF capacitor as close to the chip as possible
B1	COM2	Common Terminal for SPST Switch 2
B2	COM1	Common Terminal for SPST Switch 1
B3	GND	Ground

Function Table

VCCEN	SPST SWITCH 1	SPST SWITCH 2
0	COM1 TO NO1 SWITCH OFF	COM2 TO NO2 SWITCH OFF
1	COM1 TO NO1 SWITCH ON	COM2 TO NO2 SWITCH ON

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1 Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameters	Min.	Max.	Unit
VCCEN	VCCEN to GND	-0.3	6	V
V _{COM1/2} , V _{NO1/2}	Voltage of COM1/2 and NO1/2 to GND	-5	18	V
I _{IN}	SPST Switch I/O Current (Continuous) each path		±1.5	A
I _{IN_PEAK}	SPST Switch I/O Current (Peak, <1ms) each path		±2.5	A
t _{PD}	Total Power Dissipation at T _A =25°C			
T _{STG}	Storage Junction Temperature	-65	+150	°C
T _J	Operating Junction Temperature		+150	°C
T _L	Lead Temperature (Soldering, 10 Seconds)		+260	°C
θ _{JA}	Thermal Resistance, Junction-to-Ambient (100mm ² pad of 1 oz. copper)			
All Pin	Electrostatic Discharge Capability	Human Body Model, EIA/JESD22-A114	2	KV
		Charged Device Model, JESD22-C101	1	

Note 1. Refer to JEDEC JESD51-7, use a 4-layerboard

2 Recommended Operating Conditions

The Recommended Operating Conditions table defines the conditions for actual device operation. Recommended operating conditions are specified to ensure optimal performance.

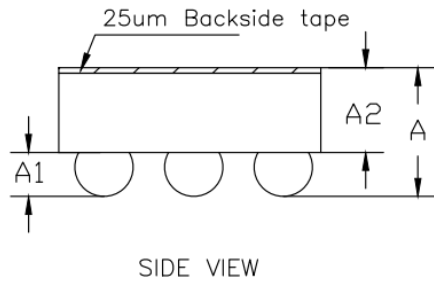
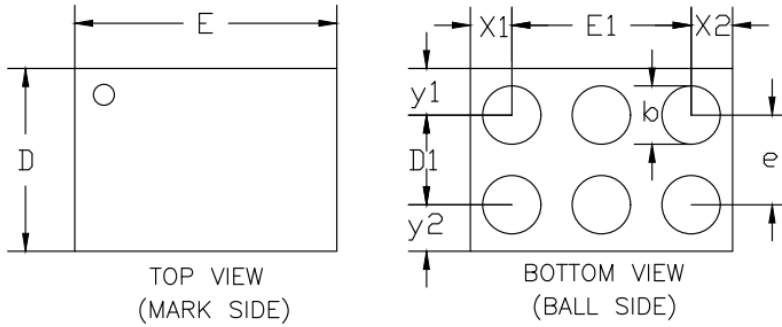
Parameters	Min.	Max.	Unit
Supply Voltage to Enable the Chip: VCCEN	1.1	5.5	V
Signal Swing Range through SPST Switch: COM1/2, NO1/2	-3	16	V
SPST Switch I/O Current (Continuous) each path: I _{IN}		1.5	A
SPST Switch I/O Current (Peak, <1ms) each path: I _{IN_PEAK}		2.5	A
Ambient Operating Temperature, T _A	-40	85	°C
VCCEN Capacitor	0.1		μF

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Package Dimensions

WLCSP-6 0.815x1.17x0.574



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.534	0.574	0.614
A1	0.176	0.196	0.216
A2	0.358	0.378	0.398
D	0.795	0.815	0.835
D1	0.400BSC		
E	1.150	1.170	1.190
E1	0.800BSC		
b	0.240	0.260	0.280
e	0.400BSC		
x1	0.185 REF		
x2	0.185 REF		
y1	0.208 REF		
y2	0.208 REF		

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Ordering Information

Part Number	Temp Range	Pin Package	Top Mark	MOQ
YHM1106W6T	-40°C to 85°C	6 WLCSP	YWW LOT	3000

T = Tape and reel.

YWW: Date Code. Y = year, WW = week.

LOT: The last three number of LOTID.

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