

# YHM4207

## Single Channel Bi-direction Voltage-Level Translator

### Features

- Single 1.6V to 5.5V Supply Voltage
- Enable and High Voltage Supply from VCCEN
- Low Voltage Decided by Internal LDO, down to 0.9V
- Supports 10MHz Open-Drain Operation without external pull up resistor
- Low Transmission Gate Ron: 20Ω
- Pullup Resistor Enabled for High Voltage Side
- 1.3uA Supply Current
- 2.07mm x 2.30mm 6-pin SC70

### Applications

- UART, GPIO, and other signal interfaces

### General Description

The YHM4207 is a single channel, bidirectional UART or GPIO voltage-level translator, designed specifically for low power consumption making it suitable for portable and battery powered equipment. Externally applied voltages VH and VL, set the logic levels on either side of the device. A logic signal present on the VL side of the device appears as the same logic signal on the VH side of the device, and vice-versa.

The device is operational from 0.9V to 3.3V VL and 1.6V to 5.5V VH, with only one VCCEN pin which is tied to VH for enable and internal LDO input. The VL is decided by internal LDO output, which can be used for 0.9V/1.2V/1.8V/2.5V/3V/3.3V system IO by different device version A/B/C/D/E. When VCCEN is low, the translator switch is off, and a high-impedance state exists between ports.

The Device also integrate one shot block to reduce the rise time for high speed application.

The YHM4207 comes in a 6 PIN, 2.07mm x 2.30mm SC70-6 package.

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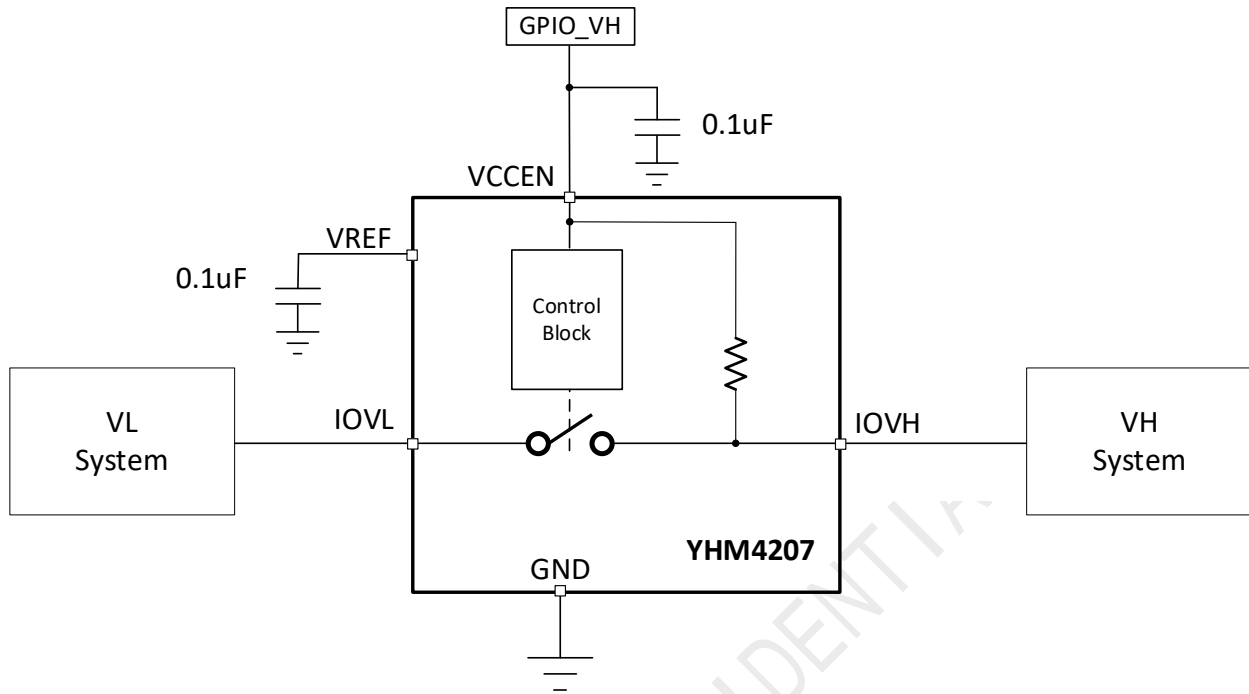


Fig 1. YHM4207 Internal Block Diagram

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### YHM4207 Pin Configurations

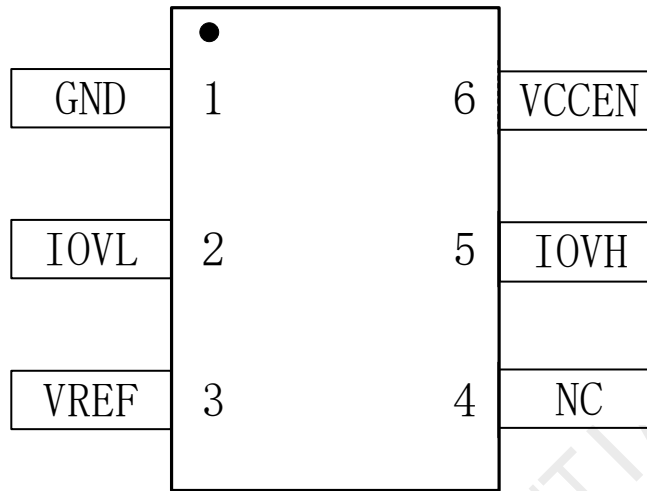


Fig 2. YHM4207 SC70-6 Pin Assignment(Top Through View)

### YHM4207 SC70 Pin Descriptions

SC70	Name	Description
1	GND	Ground.
2	IOVL	Low Voltage Input/Output. Reference to VL.
3	VREF	Connect a 0.1uF capacitor to ground.
4	NC	Not Connected.
5	IOVH	High Voltage Input/Output. Reference to VH.
6	VCCEN	Power Supply and Enable. Connect to VH GPIO. Bypass a 0.1uF capacitor.

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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.

Disclaimer: YHMICROS reserves the right to make any change in circuit design, specification or other related things if needed without notice at any time.

Symbol	Parameters		Min.	Max.	Unit
VCCEN	VCCEN to GND		-0.3	6	V
VIOVH	IOVH to GND		-0.3	6	V
VREF	VREF to GND		-0.3	6	V
VIOVL	IOVL to GND		-0.3	6	V
IVCCEN	Continuous Input Current			100	mA
I <sub>IO</sub>	Continuous channel current			±100	mA
t <sub>PD</sub>	Total Power Dissipation at T <sub>A</sub> =25°C				mW
T <sub>STG</sub>	Storage Junction Temperature		-65	+150	°C
T <sub>J</sub>	Operating Junction Temperature			+150	°C
T <sub>L</sub>	Lead Temperature (Soldering, 10 Seconds)			+260	°C
θ <sub>JA</sub>	Thermal Resistance, Junction-to-Ambient (100mm <sup>2</sup> pad of 1 oz. copper)				°C/W
All Pins	Electrostatic Discharge Capability	Human Body Model, EIA/JESD22-A114	2		KV
		Charged Device Model, JESD22-C101	1		

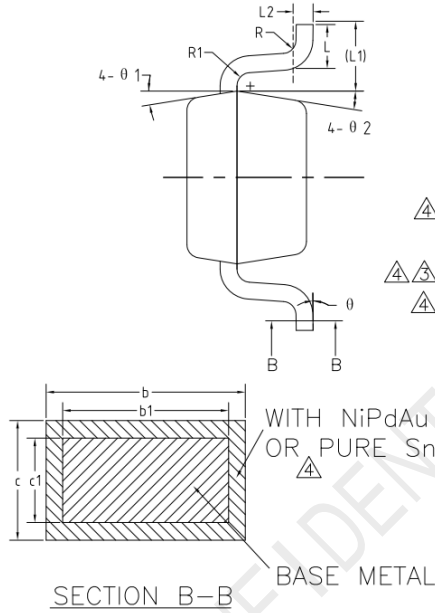
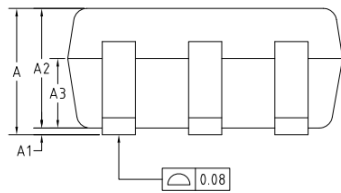
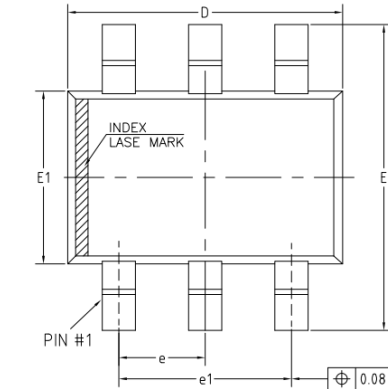
Note 1. Refer to JEDEC JESD51-7, use a 4-layerboard

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## Single Channel Bi-direction Voltage-Level Translator

### Package Dimensions

SC70-6 2.07 x 2.30 x 0.95



COMMON DIMENSIONS  
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.85	—	1.05
A1	0	—	0.10
A2	0.80	0.90	1.00
A3	0.47	0.52	0.57
b	NiPdAu 0.22 PURE Sn 0.23	—	0.29 0.33
b1	0.22	0.25	0.28
c	NiPdAu 0.115 PURE Sn 0.12	—	0.15 0.18
c1	0.115	0.13	0.14
D	2.02	2.07	2.12
E	2.20	2.30	2.40
E1	1.25	1.30	1.35
e	0.60	0.65	0.70
e1	1.20	1.30	1.40
L	0.28	0.33	0.38
L1	0.50REF		
L2	0.15BSC		
R	0.10	—	—
R1	0.10	—	0.25
θ	0°	—	8°
θ 1	6°	9°	12°
θ 2	6°	9°	12°

NOTES:  
ALL DIMENSIONS REFER TO JEDEC STANDARD MO-203 AB  
DO NOT INCLUDE MOLD FLASH , PROTRUSIONS OR GATE BURRS.  
MOLD FLASH , PROTRUSIONS OR GATE BURRS WILL NOT EXCEED 0.15mm PER SIDE.

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## Single Channel Bi-direction Voltage-Level Translator

### Ordering Information

Part Number	Temp Range	Pin Package	Top Mark	MOQ
YHM4207AS6T	-40°C to 85°C	6 SC70	XXX5A	3000
YHM4207BS6T	-40°C to 85°C	6 SC70	XXX5B	3000
YHM4207CS6T	-40°C to 85°C	6 SC70	XXX5C	3000
YHM4207DS6T	-40°C to 85°C	6 SC70	XXX5D	3000
YHM4207ES6T	-40°C to 85°C	6 SC70	XXX5E	3000

T = Tape and reel.

XXX = The last three number of LOTID.

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