

Smart Dual Output Load Switch with Current Regulation

Features

- Low Input Voltage: 2.2V to 5.5V
- Enable/Disable and current regulation setting from ISNS pins.
- ACMD single wire communication supporting.
- 20uA Supply Current
- 500nA Shutdown Current
- Ultra-Low On-State Resistance (R_{ON})
 - $R_{ON} = 76m\Omega$ at $V_{IN} = 5.0V$
 - $R_{ON} = 76m\Omega$ at $V_{IN} = 1.8V$
- 2A Maximum Total Continuous Current
- Quick Output Discharge
- Reverse Current Blocking for both channels.
- Tiny 0.67mm x 1.02mm 6-pin WLP with 0.35mm pitch

Applications

- Wearables
- Smartphones
- Tablets
- Portable Device

General Description

YHM2510 is a dual output, ultra-small, low R_{ON} and active low load switch. The device contains a N-channel MOSFET that operates over an input voltage range of 2.2V to 5.5V. The switch is controlled by ISNS pin and internal register.

YHM2510 device limits the output current to a safe level by using a constant current mode when the output load exceeds the current regulation threshold. The current regulation threshold is adjusted by an internal or external resistor added to ISNS pin. It has hard short protection for some abnormal situation at OUTx pins.

An internal reverse voltage comparator disables the power switch when the output voltage is driven higher than the input to protect devices on the input side of the switch.

Level shift function is integrated into YHM2510 for UART communication. Low side voltage can be set by internal registers.

YHM2510 support ACMD protocol and MCU can access internal registers and control the actions of the device. At this time, ISNS1 pin is served as ACMD command pin. ISNS2 pin is analog output and UART communication pin.

YHM2510 is available in a 6-bump, 0.35mm pitch, 0.67mm x 1.02mm wafer-level package (WLP).

YHM2510

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YHM2510 Pin Configurations

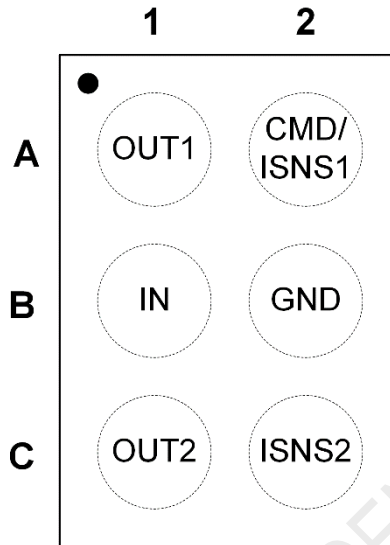


Figure 2. YHM2510 WLP-6 Pin Assignment (Top Through View)

YHM2510 WLP Pin Descriptions

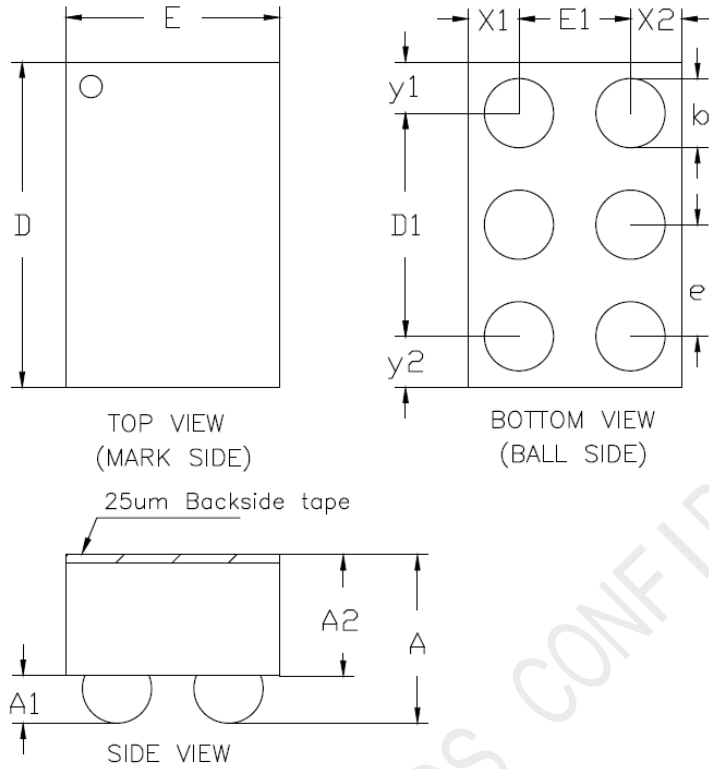
WLP	Name	Description
A1	OUT1	Output 1. Internal pull down to GND when switch off.
B1	IN	Input and Power Supply. Bypass this input with 1 μ F or greater ceramic capacitor to ground.
C1	OUT2	Output 2. Internal pull down to GND when switch off.
A2	CMD/ISNS1	Enable and current regulation setting for output 1. <ul style="list-style-type: none">• Connect external 0.1% resistor to set current regulation threshold.• Pull high to disable the switch 1.• Pull to GND to disable current regulation. This pin can also be used as command pin to configure YHM2510.
B2	GND	Ground.
C2	ISNS2	Enable and current regulation setting for output 2. <ul style="list-style-type: none">• Connect external 0.1% resistor to set current regulation threshold.• Pull high to disable the switch 2.• pull to GND to disable current regulation.• Analog signal output pin.• UART communication pin.

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7 Package Dimensions

WLCSP-6 0.67mmx1.02mm



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.483	0.528	0.573
A1	0.130	0.150	0.170
A2	0.353	0.378	0.403
D	1.000	1.020	1.040
D1	0.700BSC		
E	0.650	0.670	0.690
E1	0.350BSC		
b	0.200	0.220	0.240
e	0.350BSC		
x1	0.160 REF		
x2	0.160 REF		
y1	0.160 REF		
y2	0.160 REF		

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8 Order Information

Part Number	Package	ACMD IO Voltage	ACMD Speed	Slave Address	Top Mark (Note 1)	MOQ
YHM2510W6T	6 WLCSP	1.8V	3.3MHz	0x02	xxxG	3000
YHM2510AW6T	6 WLCSP	3.3V	400KHz	0x02	xxxH	3000
YHM2510BW6T	6 WLCSP	3.3V	3.3MHz	0x02	xxxJ	3000

Note 1: The first three letters are Lot id and production date information.

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