YHM2012

2A High Voltage Load Switch with Current Sense

Features

- Input voltage range: 3.6V ~ 29V
- Low on-resistance for IN-OUT: typical 27mΩ
- Over voltage protection: Default 22V
- Super-fast OVP response time: typical 50ns
- Programmable Over Current Protection
- Output Discharge
- Short Circuit Protection
- Robust ESD and surge immunity capability
  HBM > ±2KV
  CDM > ±1kV
- Tiny 6-bumps WLCSP 1.17mm x 0.815mm

Applications

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

General Description

YHM2012 is a low 27mΩ (TYP) on-resistance high current integrated MOSFET load switch which actively protect low-voltage systems against voltage supply faults up to +29VDC. An input voltage exceeding the over-voltage threshold will cause the internal MOSFET to turn off, preventing excessive voltage from damaging downstream devices.

The over-voltage protection threshold is default 22V. There are other OTP versions for 6V/11V/16V OVP and no OVP. YHM2012 device enters hiccup mode when the output load exceeds the over current threshold. The over current threshold is programed by R_{SNS}.

YHM2012 is available in tiny 6-bumps WLCSP 1.17mm x 0.815mm, 0.4mm pitch, and operates over an ambient temperature range of -40°C to +85°C.

Typical Application

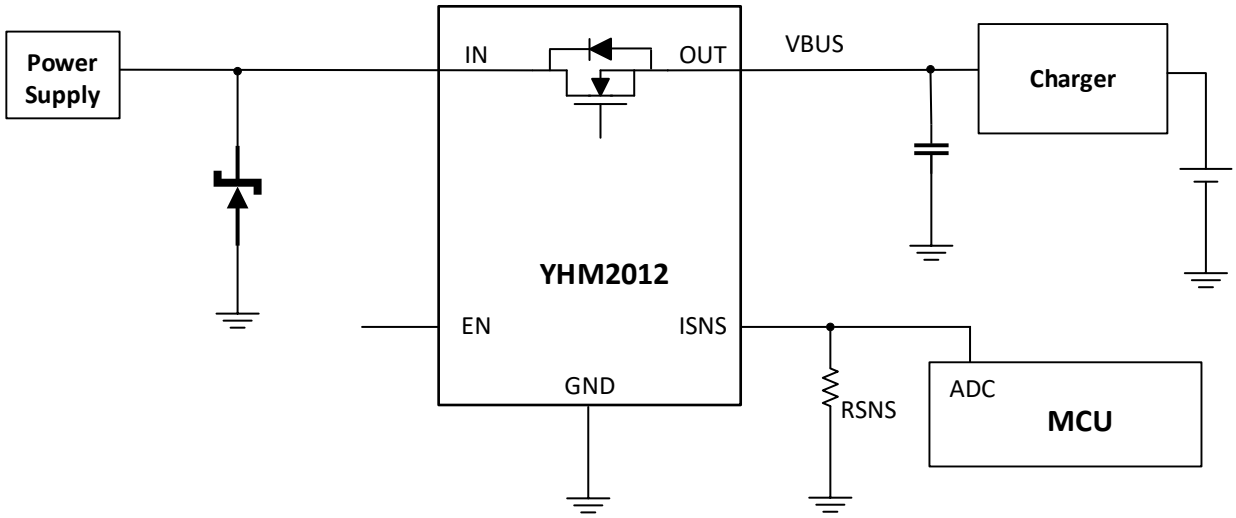


Fig 1. Load switch with OCP/SCP/Current sense Application Diagram

Internal Block Diagram

Fig 2. YHM2012 Functional Block Diagram

YHM2012 Pin Configurations

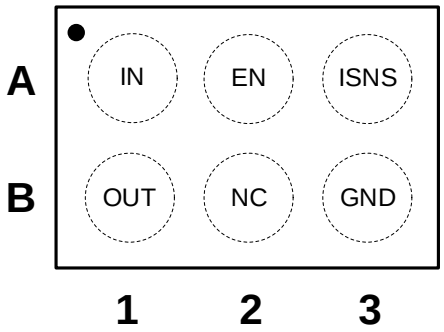


Fig 3. YHM2012 WLP-6 Pin Assignment (Top Through View）

YHM2012 WLP Pin Descriptions

Bump	Name	Description
A1	IN	Power Input.
A2	EN	Chip enable.
A3	ISNS	Connect to system GPIO for communication function.
B1	OUT	Power Output.
B2	NC	Not Connected.
B3	GND	Device Ground.

Absolute Maximum Ratings

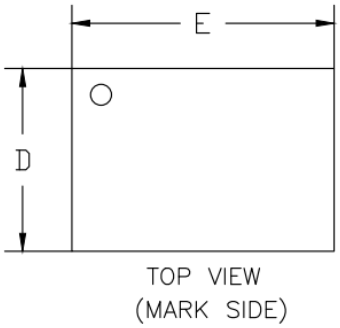
Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions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

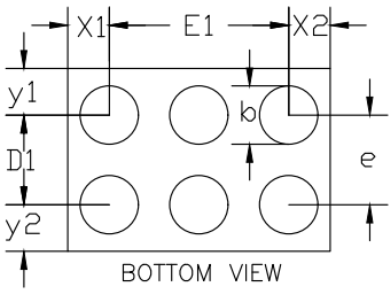
Symbol	Parameter		Min.	Max.	Unit
V_{IN}	IN to GND		-0.3	31	V
V_{OUT}	OUT to GND		-0.3	V_{IN}+0.3	V
V_{ISNS}	ISNS to GND		-0.3	6.0	V
I_{IN}	Input Current (Continuous)			2.0	A
I_{OUT}	OUT Current			2.0	A
t_{PD}	Total Power Dissipation at T_A = 25°C			TBD	W
T_{STG}	Storage Temperature Range		-65	+150	°C
T_J	Maximum Junction Temperature			+150	°C
T_L	Lead Temperature (Soldering, 10 Seconds)			+260	°C
ESD	Human Body Model, ANSI/ESDA/JEDEC JS-001-2012	All Pins	2		kV
	Charged Device Model, JESD22-C101	All Pins	1		

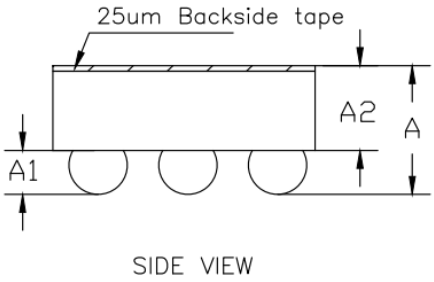
Note 1. Refer to JEDEC JESD51-7, use a 4-layerboard

Package Dimensions

WLCSP-6 1.17mm x 0.815mm x 0.574mm







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	

Ordering Information

Part Number	Temp Range	Pin Package	Top Mark	MOQ
YHM2012W6T	-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.