

HM 612 Digital 6Pins Long Range Human Motion Detector PIR Sensor for Smart Light Switch (ROBU SKU: 815423)

1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Working Temperature	TST	-20	85	°C	
Max. Current	Into	-100	100	mA	
Storage Temperature	TST	-40	125	°C	

2. Working Conditions (T=25°C, VDD=3V , Except other requirements)

Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	VDD	2.2	3	3.7	V	IR=0.5mA
Working Current	IDD	9	9.5	11	µA	
Sensitivity threshold value	VSENS		80		µV	
Output REL						
Output Low Current	IOL	10			mA	VOL<1V
Output High Current	IOH			-10	mA	VOL>(VDD-1V)
Output Low current Lock time	TONL		2		s	Non-adjustable
Output High current Lock time	TOH	2		3600	s	
Input SENS/ONTIME						
Voltage Input Range		0		VDD	V	0V to ¼ VDD
Input Bias Current		-1		1		

OEN						
Input Low Voltage	VIL		0.3	V	OEN Threshold Value From High Voltage to Low Voltage	
Input High Voltage	VIH	1.5		V	OEN Threshold Value From High Voltage to Low Voltage	
Input Current	II	-1	1	μA	V _{SS} <V _{IN} <V _{DD}	
Oscillator & Filter						
Low pass filter cut-off frequency			7	Hz		
High pass filter cut-off frequency			0.44	Hz		
Oscillator frequency on Chip	FCLK		64	kHz		
Interior Block Diagram					<p>The diagram illustrates the internal architecture of the sensor chip. It starts with a photodiode connected to a preamplifier stage. The preamplifier's output is fed into an ADC (Analog-to-Digital Converter). The ADC also receives a reference voltage from a bandgap reference circuit. The ADC's output is processed by a digital signal processing block containing a BPF (Band Pass Filter), an oscillator (OSC), and a VTEMP (Temperature) sensor. This block also provides feedback to the ADC. The digital logic includes a Test Control Logic and a PIN ADC. The final outputs are the REL (Relay) and OEN (Open Drain Enable) pins, along with power supply pins VDD and GND, and ground connection pins.</p>	