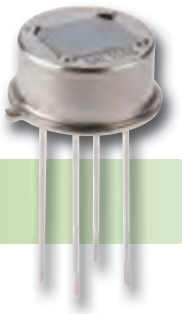
Digital Pyrodetector

For Battery Operated Applications



PYD 1688, PYD 1698 – Low Power *DigiPyro*®

Target Applications

- Intrusion Alarm, wireless
- Battery operated Motion Detection

Features and Benefits

- Wake up/ Sleep Mode
- Low power consumption
- Band pass included
- Pulse count option

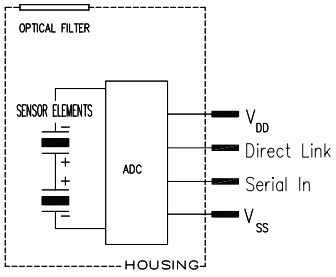
Product Description

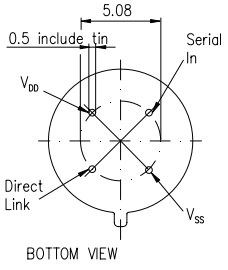
The LowPower DigiPyro® is our latest introduction addressing the rquirements of further reduced power consumption. With its further reduced current requirement at 3V supply the PYD 16 series offers new programmable features: The Wake-up/Sleep mode enables to save unit power, making it ideal for battery operated motion detection applications.

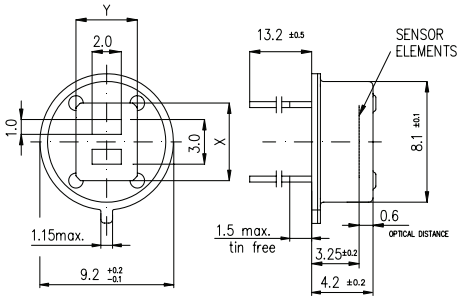
Continuous motion sensing, signal processing and event/motion detection is handled by the Low-Power DigiPyro while the hosting microcontroller can be set into a power saving mode. Only upon detection of a motion per its programmed settings, the LowPower DigiPyro signalizes the microcontroller to wake up.

Further options are selectable pulse count and electrical band pass.

The PYD 1688 /PYD 1698 include Dual Element Pyroelectric Detector design and the digital signal processor, all built into a TO-5 housing..







PYD 1688 and PYD 1698						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Responsivity		3,3	4,0		kV/W	f = 1 Hz
Match			10		%	
Noise			20	78	μV_{pp}	
Field of View, vertical		PYD 1688: 95°		PYD 1698: 110°		unobstructed
Field of View, horizontal		PYD 1688: 90°		PYD 1698: 110°		unobstructed
Mechanical Data						
Window size x		PYD 1688: 4,6		PYD 1698: 5,2	mm	
Wiindow size y		PYD 1688: 3,4		PYD 1698: 4,2	mm	
Operation Data						
Operating Voltage	V_{DD}	2,5	3,3	3,6	V	
Supply Current	I_{DD}		3		µA	V_{DD} = 3,3V, no load
ADC Data						
ADC Resolution			14		Bits	Max Count = 2^{14} -1
PIR ADC Sensitivity			6,5			µV/Count
Output Range				2^{14} –511	Counts	
LPF cutoff frequency	f_1		7		Hz	
HPF cutoff frequency	f_2		0,44		Hz	

Digital 4-Element Pyrodetector

For Battery Operated Applications

PYQ 1648 – Low Power *DigiPyro*®, Quad Element Design

Target Applications

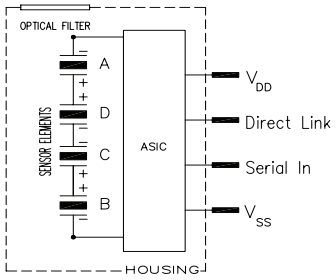
- G Intrusion Alarm
- Ceiling Mount Motion Detection

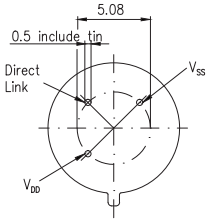
Features and Benefits

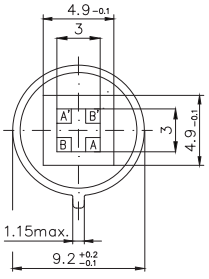
- 4 Sensing Elements
- Single Output
- Pulse count option
- Low current consumption

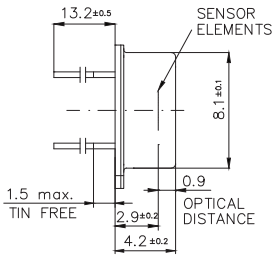
Product Description

The LowPower *DigiPyro*® family has been developped for use in both residdential and commercial products for applications of less power consumption.
This new PYQ series offers the same electrical configuration as PYD 16.. series, but includes four elements in Quad design pyroelectric element, all connected in series. This series offers a number of new programmable features:
The Wake-up/Sleep Mode enables to save unit power. All motion sensing, signal processing and event/motion detection is continuously processed by the LowPower *DigiPyro* while the host microcontroller can be set into power saving (Sleep-) mode. Upon detection of a motion per programmed settings, the LowPower *DigiPyro* will sent a signal to the microcontroller to wake up and request the motion data.
Further options are selectable pulse count and electrical band pass.
The complete cofigutation with the sensing elements and digital signal processor is included in a TO-5 housing.









PYQ 1648						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Responsivity		5,4	6,5		kV/W	f = 1 Hz
Match			5	10	%	
Noise			30	140	μV_{pp}	
Field of View, vertical			95°			unobstructed
Field of View, horizontal			95°			unobstructed
Operation Data						
Operating Voltage	V_{DD}	2,5	3,3	3,6	V	
Supply Current	I_{DD}		3		µA	V_{DD} = 3,3V, no load
Input Low Voltage	V_{SIL}			$0,2V_{DD}$	V	
Input High Voltage	V_{SIH}	$0,8V_{DD}$			V	
ADC Data						
ADC Resolution			14		Bits	Max Count = 2^{14} -1
PIR ADC Sensitivity			6,5			µV/Count
Output Range				2^{14} –511	Counts	
LPF cutoff frequency	f_1		7		Hz	
HPF cutoff frequency	f_2		0,44		Hz	