

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

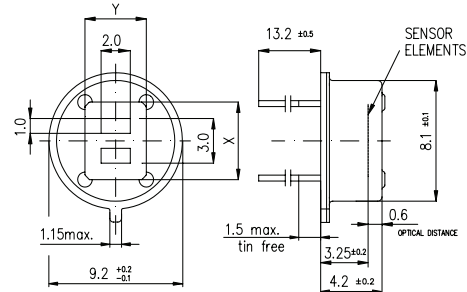
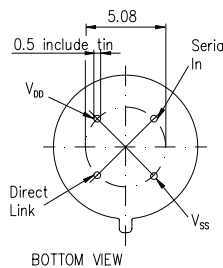
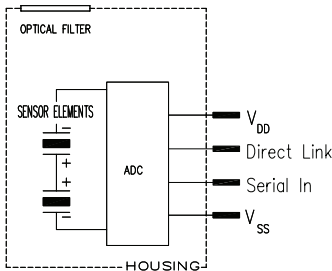
Product Description

The LowPower DigiPyro® is our latest introduction addressing the requirements 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 signals 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	
Window 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

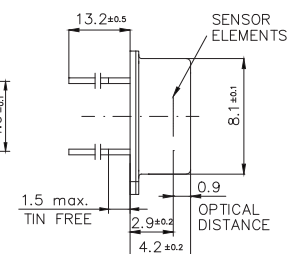
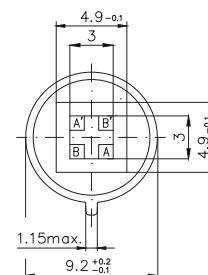
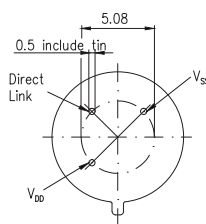
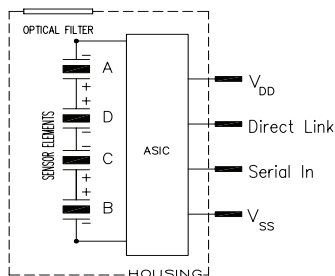
The LowPower *DigiPyro*® family has been developed for use in both residential and commercial products for applications of less power consumption.

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 configuration 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		