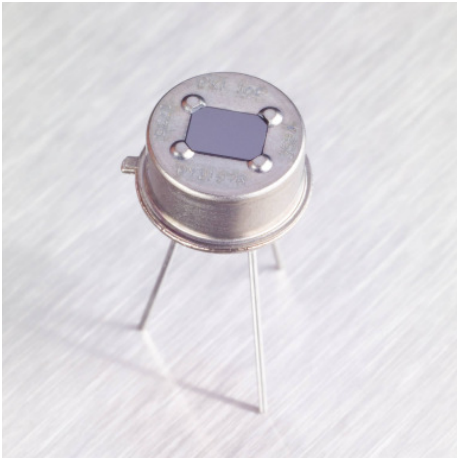


# DigiPyro® PYD 1978

## Dual Element Pyrodetector by PerkinElmer



The DigiPyro® PYD 1978, with its 3 x 4 mm<sup>2</sup> window size, provides you with a low-cost digital solution to motion detection.

### Introduction

The DigiPyro® line is the first family of digital pyroelectric infrared detectors, brought to you from PerkinElmer.

It combines the time-proven, ceramic dual element configuration with a fully integrated A/D converter. An internal clock and control unit enable the digital output pyrodetectors to open a dialog with any outside microprocessor without additional components. The DigiPyro line offers the benefits of a standard three-pin TO-5 housing.

The move from analog to digital technology enables the DigiPyro to deliver a number of advantages including space savings from fewer components and significantly improved EMI immunity.

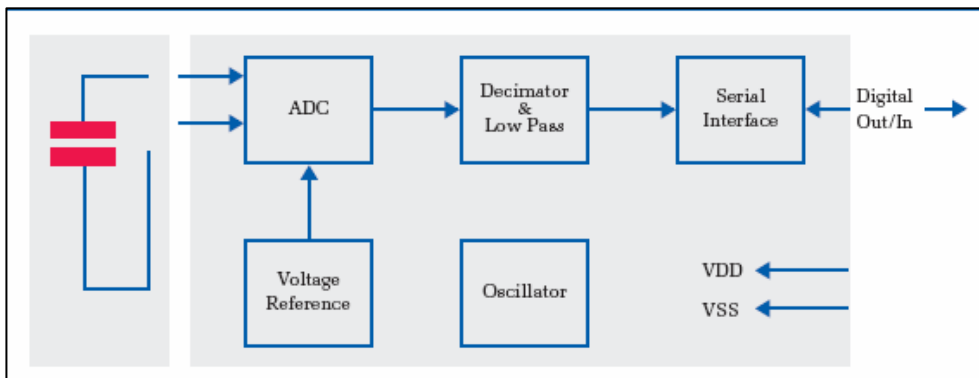
The DigiPyro family continues the high quality standard tradition that customers have come to rely upon with PerkinElmer's analog pyrodetectors. With the introduction of the DigiPyro family, PerkinElmer is making a fundamental step-change in motion detection.

### Features and Benefits

- Digital Output Sensor
  - 15 Bit Output "direct link"
  - 3 Pin TO-5 Housing
- Dual Element Design
  - 2 x 1 mm<sup>2</sup> Elements
  - 1 mm Spacing
- Infrared Window
  - 5.5...14 μm Transmission
- Window Size 3 x 4 mm<sup>2</sup>
- High level electrical performance
  - Low EMI Sensitivity
  - Unique Responsivity

### Applications

- Intrusion Alarm Applications
- Motion Activated Light Switches
- Door Openers

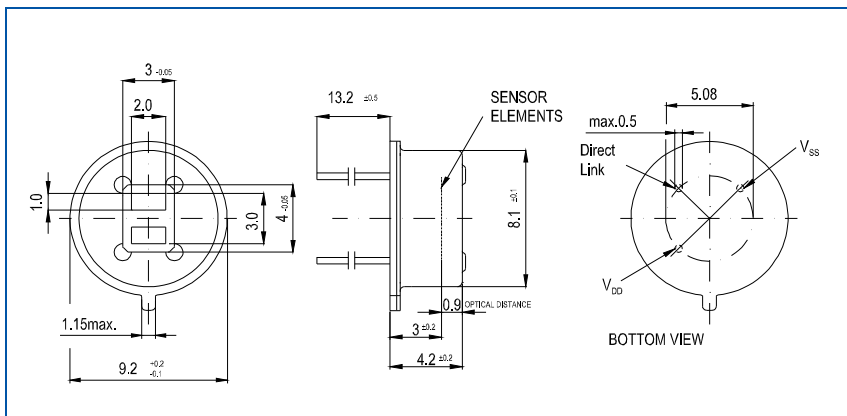


## 1 Technical Data

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Responsivity		3.3	4.0		kV/W	
Noise			20	50	$\mu\text{V}_{\text{pp}}$	
Operating Voltage	$V_{\text{DD}}$	3.0	5.0	5.5	V	
Supply Current	$I_{\text{DD}}$		30	40	$\mu\text{A}$	$V_{\text{DD}} = 5\text{ V}$
Field of View			135		Degree	From center of detector
Operating Temperature	$T_o$	-40		85	$^{\circ}\text{C}$	Electrical parameters may vary from specified values acc.to their temperature dependence.
ADC Resolution			14		Bits	Max Count = $2^{14}$
ADC Sensitivity		6.1	6.5	7	$\mu\text{V}/\text{count}$	
ADC Offset		6200	8250	11000	Bit	
Input Low Voltage	$V_{\text{IL}}$			$0.2 V_{\text{DD}}$	V	
Input High Voltage	$V_{\text{IH}}$	$0.8 V_{\text{DD}}$			V	
Pull Up / Down Current		220	280	350	$\mu\text{A}$	Input to $V_{\text{SS}} / V_{\text{DD}}$
Data Setup Time	$t_s$	25			$\mu\text{s}$	
Match				10	%	
LPF Cut-Off Frequency			10		Hz	
Internal Clock Frequency	$f_{\text{CLK}}$	60	70	90	kHz	
Storage Temperature	$T_s$	-40		85	$^{\circ}\text{C}$	Avoid storage in humid environment.

All values are nominal; specifications subject to change without notice.

## 2 Physical Configuration



**Figure 4**

PIN Layout.

All measurements are in mm.

Housing: TO-5 metal housing with infrared transmissive window.

## DigiPyro Application Kit

PerkinElmer Optoelectronics has designed an Application Kit that helps customers perform their first measurements with the DigiPyro. It is easy to use and does not require specialized technical know how. Please contact us to receive additional information on how to obtain the Application Kit.

## DigiPyro Family

PerkinElmer Optoelectronics offers a range of DigiPyro Dual Element models (PYD 1998, PYD 1988, PYD 1978) as well as a Quad Element, Triple Channel model (PYQ 2898) to meet your specific motion detection needs. Please consult with your PerkinElmer sales representative for the digital motion detection solution that best meets your design requirements.

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