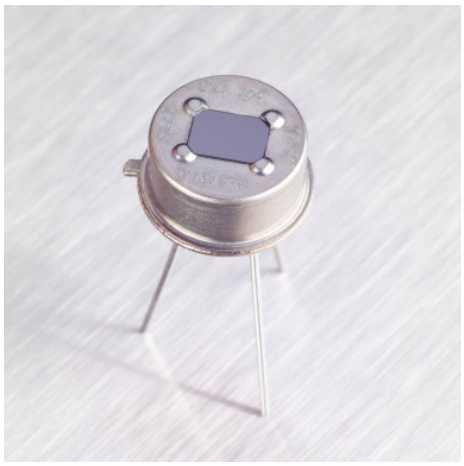
DigiPyro® PYD 1978

Dual Element Pyrodetector by PerkinElmer

SENSOR SOLUTIONS

D A T A S H E E T

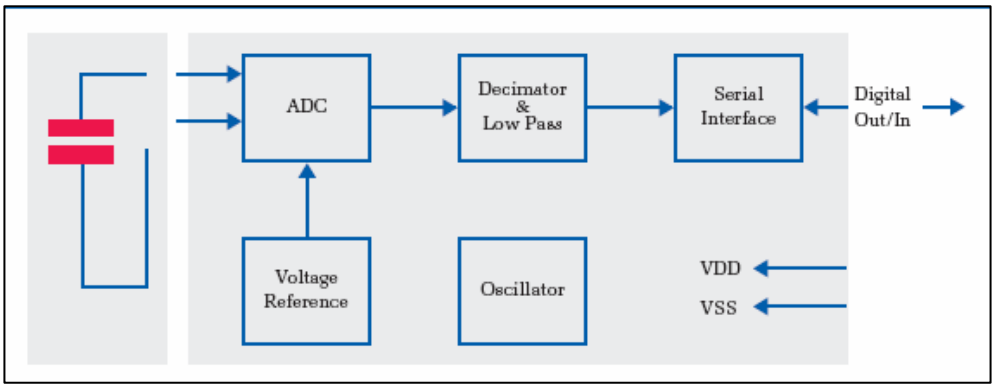


The DigiPyro® PYD 1978, with its 3 x 4 mm² window size, provides you with a low-cost digital solution to motion detection.

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 mm² Elements
  1 mm Spacing
- Infrared Window
  5.5...14 µm Transmission
- **Window Size 3 x 4 mm²**
- 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	µVpp	
Operating Voltage	V_{DD}	3.0	5.0	5.5	V	
Supply Current	I_{DD}		30	40	µA	V_{DD} = 5 V
Field of View			135		Degree	From center of detector
Operating Temperature	T_o	-40		85	°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	µV/count	
ADC Offset		6200	8250	11000	Bit	
Input Low Voltage	V_{IL}			0.2 V_{DD}	V	
Input High Voltage	V_{IH}	0.8 V_{DD}			V	
Pull Up / Down Current		220	280	350	µA	Input to V_{SS} / V_{DD}
Data Setup Time	t_s	25			µs	
Match				10	%	
LPF Cut-Off Frequency			10		Hz	
Internal Clock Frequency	f_{CLK}	60	70	90	kHz	
Storage Temperature	T_s	-40		85	°C	Avoid storage in humid environment.

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

2 Physical Configuration

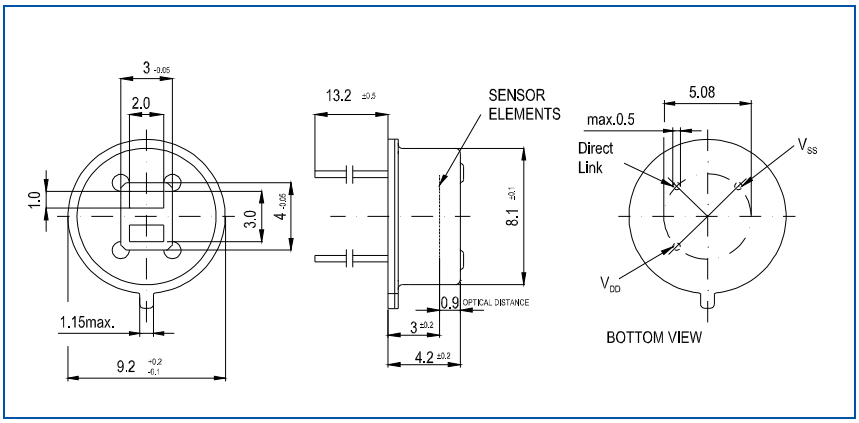


Figure 4
PIN Layout.
All measurements are in mm.

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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