PRODUCT BRIEF

LEAD SULFIDE INFRARED DETECTORS (1 - 3 microns)

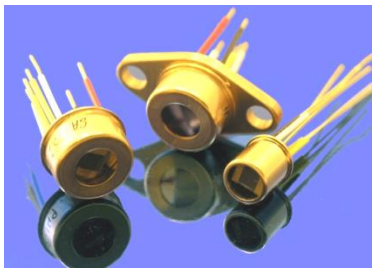
Advantages

- New Automated Chemical Processing (ACP) produces higher yield at lower cost.
- Extremely high reliability under extreme conditions.
- Long shelf life.
- Hermetically sealed package to completely eliminate humidity attack on detection area.
- Wide range of electrical characteristics available.
- Wide range of sizes available.
- Immediate delivery.
- Compact integrated filter/detector combinations.
- 100% tested.
- State of the art microelectronics fabrication capability.
- Specializing in high density arrays.

Overview

Agiltron manufactures state-of-the-art lead sulfide devices (PbS) for room temperature operation as well as enhanced sensitivity thermoelectrically cooled operation. These devices can be supplied with integrated optical filters, pre-amplifiers or multiplexed amplifiers for high density arrays.

Listed below are typical room temperature electrical characteristics of Agiltron Automated Chemical Processing (ACP) PbS detectors.



Element Size	Resistance (MΩ)	Time Constant (μ sec)	D* (λ, 200, 1) x 10^{11} (cm•Hz^{½}•W^{-1})	D* (λ, 620, 1) x 10^{11} (cm•Hz^{½}•W^{-1})	D* (λ,2000, 1) x 10^{11} (cm•Hz^{½}•W^{-1})
1x1mm	0.5 - 2.0	200~400	0.5 - 0.6	0.7 - 1.0	0.6 – 0.8

Mechanical Features

Detectors are typically manufactured on 0.020” - 0.030” quartz substrates. Devices can be supplied integrated with optical condenser elements, thermoelectric (TE) coolers, and processing electronics, all in a miniature package.

Aging Characteristics

All stock detectors undergo a minimum four week aging period. Experience with detectors manufactured by the proprietary process, including the above aging period, has shown the electrical characteristics to be stable to within 10% for over a year.

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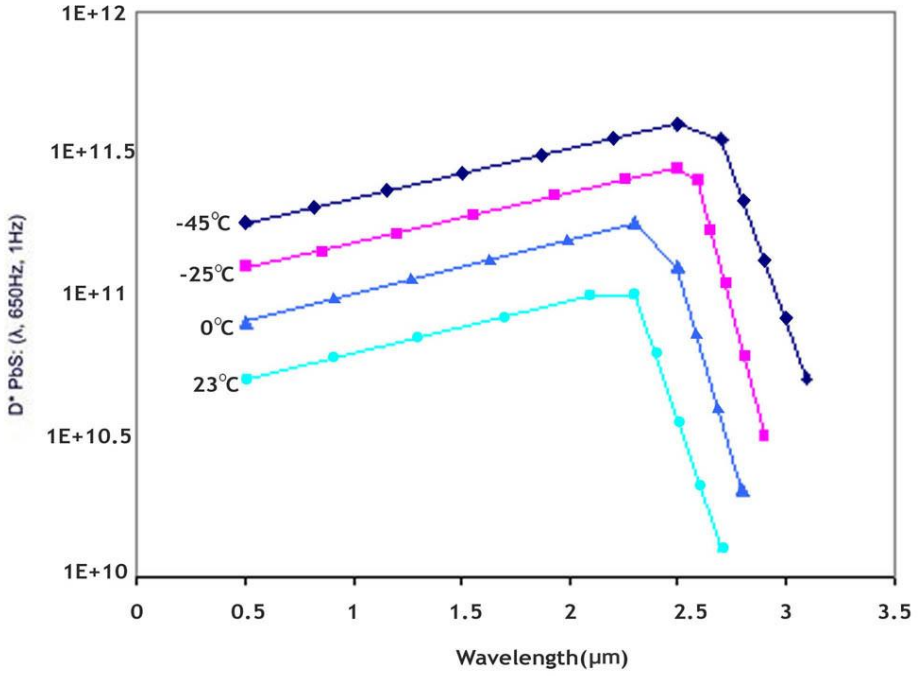
Response of PbS Detectors

The typical response for PbS operates in 0.5 to 3 micron spectral region with time constants below 400 µsec. TE-cooled packages are available with a response in the 0.5 to 3 micron region with increased D*. Typical spectral response of standard PbS detector is shown below.



Ordering Information

PBAD-	☐	☐ ☐	☐	☐	☐	☐	☐ ☐
	Material Type	**Type**	**Package**	**Element size**	**Window**	**AR Coated**	**Temperature Sensor**
Ambient Detector	2=Lead Sulfide (PbS)	00=Flat Plate 01=Packaged IP=Integrated preamp.	0=special 1=TO-18 5=TO-5 7=TO-37 8=TO-8 9=TO-39	0=Special 1=1x1mm 2=2x2mm 3=3x3mm 4=4x4mm 5=5x5mm 6=6x6mm	0=Special 1=Spectral Filter 2=Quartz 3=Sapphire 4=Germanium 5=Silicon	0=No 1=Yes	00=No Themistor TH=Thermistor TC=Thermistor Calibrated

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