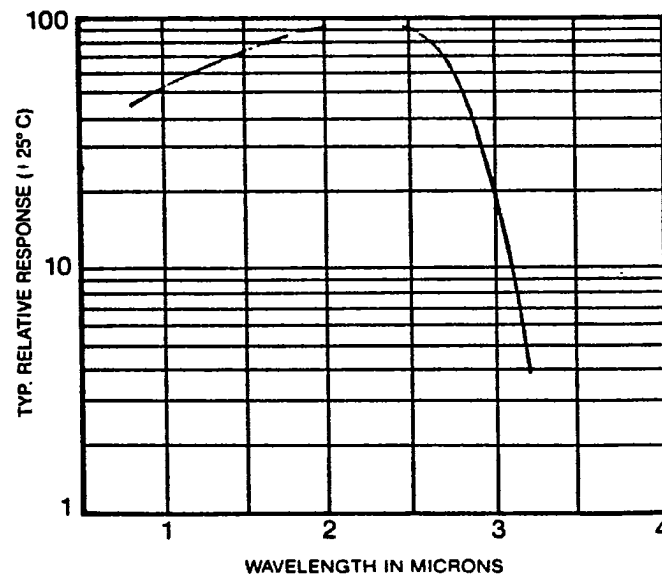


## AP SERIES PbS Packaged Detectors

T-41-41

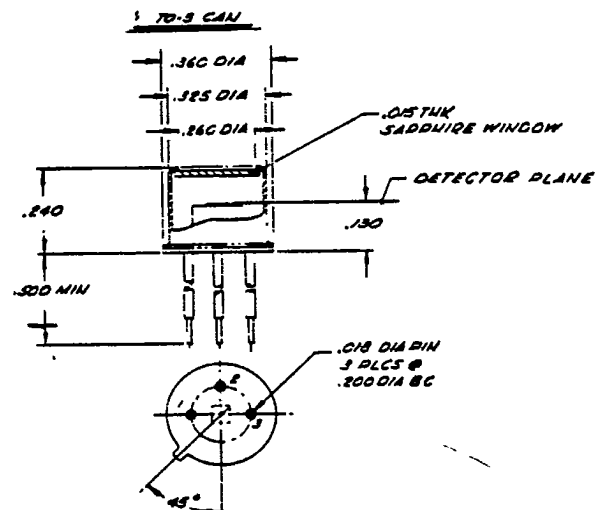


### DESCRIPTION:

AP series Lead Sulfide (PbS) detectors are packaged in either TO-5 or TO-8 cans. P/N AP-25 - TC Example PbS 2mm sq TO-5 with Calibrated Thermistor. (See order data)

These detectors offer an economical choice in the 1 to 3 micron spectral region. The package provides an excellent means for providing performance in a hostile environment which may downgrade the performance or life of an unpackaged detector.

CTA series detectors are hermetically sealed using the latest packaging techniques to assure a long productive operation.



**AP SERIES PbS DETECTORS FEATURE:**

High sensitivity over 1 to 3 $\mu$ m spectral region  
 Room temperature operation  
 Hermetically sealed - excellent stability and reliability  
 Low cost - fast delivery

**SPECIFICATIONS**

Characteristic	Operating Conditions	Performance			Units
		Minimum	Typical	Maximum	
Ambient temperature			+25	+65	°C
Element temperature	All specifications apply at		+25		°C
D* (detectivity)	500°K, 650Hz, 1Hz	$7.5 \times 10^8$	$9.4 \times 10^8$		$\text{cmHz}^{1/2}\text{W}^{-1}$
D* (detectivity)	$\lambda_{pk}$ , 650Hz, 1Hz	$8.0 \times 10^{10}$	$1.0 \times 10^{11}$		$\text{cmHz}^{1/2}\text{W}^{-1}$
Wavelength of max. response		2.2	2.4		$\mu\text{m}$
Element resistance (dark)		0.2	0.4	2.0	Meg ohms/ $\square$
Time constant (see Note 5)	(not measured)		250	400	$\mu\text{sec}$
Responsivity	$\lambda_{pk}$ , 650Hz				$\text{VW}^{-1}$
Element size 1mm x 1mm		$2.0 \times 10^5$	$3.0 \times 10^5$		
Element size 2mm x 2mm		$1.0 \times 10^5$	$1.5 \times 10^5$		
Element size 3mm x 3mm		$6.0 \times 10^4$	$1.0 \times 10^5$		
Optimum detector bias	With 1M $\Omega$ load resistor				Volts
Element size 1mm x 1mm			60	125	
Element size 2mm x 2mm			100	200	
Element size 3mm x 3mm			125	250	
Field of view					Degrees
Element size 1mm x 1mm	TO-18		50		
Element size 1mm x 1mm	TO-5		80		
Element size 2mm x 2mm	TO-5		70		
Element size 3mm x 3mm	TO-5		55		

When ordering standard detectors, specify:

Type	Element size	Package
AP-15	1mm x 1mm	TO-5
AP-25	2mm x 2mm	TO-5
AP-35	3mm x 3mm	TO-5

- Other standard element sizes, including rectangular elements, are also readily available.
- Max. element size for TO-18 is 1mm x 1mm.
- Max. element size for TO-5 is 4mm x 4mm.
- Please inquire about standard packages which are built to accommodate element sizes larger than 4mm x 4mm.
- Field of view of detectors may be increased by raising the detector plane height.
- Detectors on special order may be produced with faster time constants, e.g., less than 100 $\mu\text{sec}$ .
- Refer to other data sheets for cooled detectors.