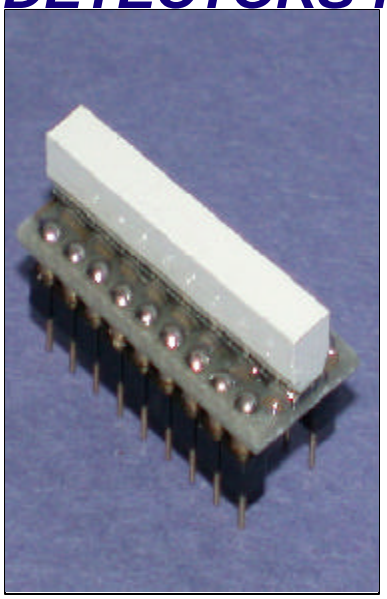
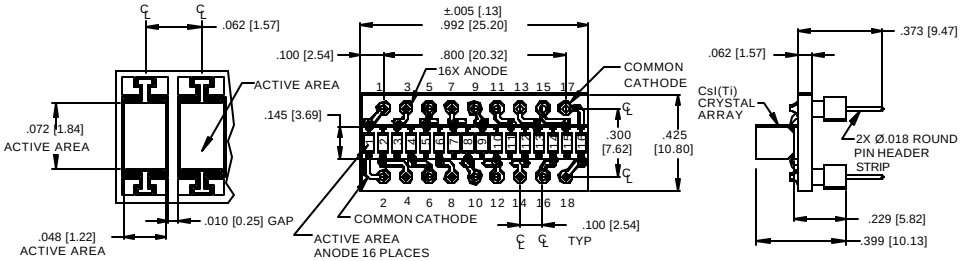
PHOTONIC DETECTORS INC.

X-RAY, Silicon Photodiode Array, Photoconductive (with CsI(Ti) scintillation crystals) Type PDB-C216-C



PACKAGE DIMENSIONS INCH [mm]



PIN CONNECTIONS			
ELEMENT NO.	PIN NO.	ELEMENT NO.	PIN NO.
1	1	10	12
2	4	11	11
3	3	12	14
4	6	13	13
5	5	14	16
6	8	15	15
7	7	16	18
8	10	CATHODE	2
9	9	CATHODE	17

X-RAY SCINTILLATOR IS A CESIUM IODIDE, THALLIUM DOPED, CsI(Ti) CRYSTAL. THE EMISSION IS 565 nm AND HAS 99% ABSORPTION OF X-RAY ENERGY.

16 ELEMENT X-RAY PACKAGE

ACTIVE AREA = 2.31mm^2

FEATURES

- .062 inch centers
- Stackable
- CsI(Ti) crystals
- Low capacitance

DESCRIPTION

The **PDB-C216-C** is a common cathode, monolithic silicon PIN photodiode 16 element array. Designed to be stacked end to end to form a line of pixels. Supplied with X-Ray CsI(Ti) scintillation crystals.

APPLICATIONS

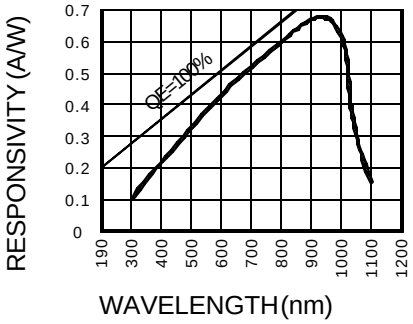
- Luggage X-ray
- X-Ray scanner
- X-Ray inspection

ABSOLUTE MAXIMUM RATING (TA=25^{O}C unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS
V_{BR}	Reverse Voltage		50	V
T_{STG}	Storage Temperature	-40	+100	^{O}C
T_{O}	Operating Temperature Range	-20	+75	^{O}C
T_{S}	Soldering Temperature*		+265	^{O}C
I_{L}	Light Current		500	mA

*1/16 inch from case for 3 secs max

SPECTRAL RESPONSE



ELECTRO-OPTICAL CHARACTERISTICS (TA=25^{O}C unless otherwise noted, without scintillator)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{SC}	Short Circuit Current	H = 100 fc, 2850 K	18	28		μA
I_{D}	Dark Current	H = 0, V_R = 5 V		5	50	nA
R_{SH}	Shunt Resistance	H = 0, V_R = 10 mV	100	200		MΩ
TCR_{SH}	RSH Temp. Coefficient	H = 0, V_R = 10 mV		-8		% / ^{o}C
C_{J}	Junction Capacitance	H = 0, V_R = 0 V**		40	60	pF
λrange	Spectral Application Range	Spot Scan	350		1100	nm
λp	Spectral Response - Peak	Spot Scan		950		nm
V_{BR}	Breakdown Voltage	I = 10 μA	15	30		V
NEP	Noise Equivalent Power	V_R = 10 V @ Peak		$2x10^{-14}$		W/$\sqrt{Hz}$
tr	Response Time	RL = 50 Ω V_R = 10 V		15		nS