



FEATURES

- Ambient temperature operation
- Time constant of 1 ns or less
- Wide dynamic range
- Perfect match to fast electronics
- Convenient to use
- Low cost
- Prompt delivery
- Custom design upon request

DESCRIPTION

PCI- λ_{opt} photodetectors series (λ_{opt} - optimal wavelength in micrometers) feature IR photoconductive detector, optically immersed to high refractive index GaAs hyperhemispherical (standard) or hemispherical or any intermediate lens (as option) for different acceptance angle and saturation level. This series is easy to use, no cooling or heatsink needed. The devices are optimized for the maximum performance at λ_{opt} . Cut-on wavelength is limited by GaAs transmittance ($\sim 0.9 \mu\text{m}$). Bias is needed to operate photocurrent. Performance at low frequencies ($< 20 \text{ kHz}$) is reduced due to $1/f$ noise. Highest performance and stability are achieved by application of variable gap (HgCd)Te semiconductor, optimized doping and sophisticated surface processing. Standard detectors are available without window in TO-39 or BNC based package. Various windows, other packages and connectors are available upon request.

SPECIFICATION

@20°C

CHARACTERISTICS	UNITS	PCI-4	PCI-5	PCI-6	PCI-9	PCI-10.6
λ_{opt}	μm	4	5	6	9	10.6
Detectivity ¹⁾ : @ λ_{peak} , 20kHz @ λ_{opt} , 20kHz	$\text{cmHz}^{1/2}/\text{W}$	$\geq 1 \times 10^{10}$ $\geq 6 \times 10^9$	$\geq 6 \times 10^9$ $\geq 4 \times 10^9$	$\geq 2.5 \times 10^9$ $\geq 1 \times 10^9$	$\geq 5 \times 10^8$ $\geq 1 \times 10^8$	$\geq 1 \times 10^8$ $\geq 8 \times 10^7$
Responsivity-Width product @ λ_{opt} 1x1 mm	Vmm/W	> 600	> 300	> 60	> 3	> 1
Time Constant	ns	< 1000	< 500	< 200	< 2	< 1
1/f Corner Frequency	kHz	1 to 10	1 to 10	1 to 10	1 to 10	1 to 20
Bias current-Width Ratio	mA/mm	1 to 2	2 to 4	3 to 10	3 to 15	5 to 20
Sheet Resistance	Ω/sqr	300 to 1000	200 to 400	100 to 300	50 to 150	40 to 120
Operating Temperature	K	~ 300				
Acceptance angle, F/#	deg, -	36, 1.62				

¹⁾Data sheet states minimum guaranteed D^* values for each detector model. Higher performance detectors can be provided upon request.

Type	Length [mm]									
	0.025	0.05	0.1	0.2	0.25	0.5	1	2	3	4
PCI-4					X	X	X	X		
PCI-5					X	X	X	X		
PCI-6					X	X	X	X		
PCI-9					X	X	X	X		
PCI-10.6					X	X	X	X		

X – standard detectors

