



FEATURES

- Ambient temperature operation
- No bias required
- Short time constant
- No flicker noise
- Operation from DC to VHF
- Perfect match to fast electronics
- Wide dynamic range
- Low cost
- Custom design upon request

DESCRIPTION

PV-λ_{opt} photodetectors series (λ_{opt} - optimal wavelength in micrometers) feature IR photovoltaic detector. 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 can be optimized upon request. Reverse bias may significantly increase speed of response and dynamic range. It results also in improved performance at high frequencies, but 1/f noise that appears in biased devices may reduce performance at low frequencies. 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	PV-3	PV-3.4	PV-4	PV-5	PV-6	PV-8
λ _{opt}	μm	3	3.4	4	5	6	8
Detectivity ¹⁾ : @ λ _{peak} @ λ _{opt}	cmHz ^{1/2} /W	≥8×10 ⁹ ≥6.5×10 ⁹	≥7×10 ⁹ ≥5×10 ⁹	≥5×10 ⁹ ≥3×10 ⁹	≥2×10 ⁹ ≥1×10 ⁹	≥1×10 ⁹ ≥5×10 ⁸	≥8×10 ⁷ ≥4×10 ⁷
Responsivity @ λ _{opt}	A/W	≥0.5	≥0.8	≥1	≥1	≥1	≥0.3
Time Constant ²⁾	ns	≤20	≤20	≤20	≤20	≤15	≤8
Resistance-optical area product	Ω×cm ²	≥1	≥0.5	≥0.1	≥0.01	≥0.002	≥0.0001
Operating temperature	K	~300					
Acceptance angle, F/#	deg, -	>90, 0.71					

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

²⁾Faster response may be achieved at reverse bias and with high-frequency-optimized custom detectors.

Type	Length or diameter [mm]									
	0.025	0.05	0.1	0.2	0.25	0.5	1	2	3	4
PV-3	O	X	X	O		O	O			
PV-3.4	O	X	X	O		O	O			
PV-4	O	X	X	O		O	O			
PV-5	O	X	X	O		O	O			
PV-6	O	X	X ¹⁾	O		O				
PV-8	X	X ¹⁾	P							

¹⁾ Custom detector may require reverse bias in order to increase dynamic resistance and improve frequency response.

X – standard detector

P – default with reverse bias

O – detectors available on request, parameters may vary from these in data sheets