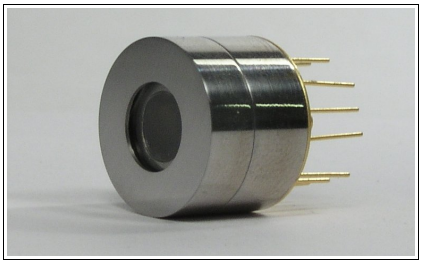
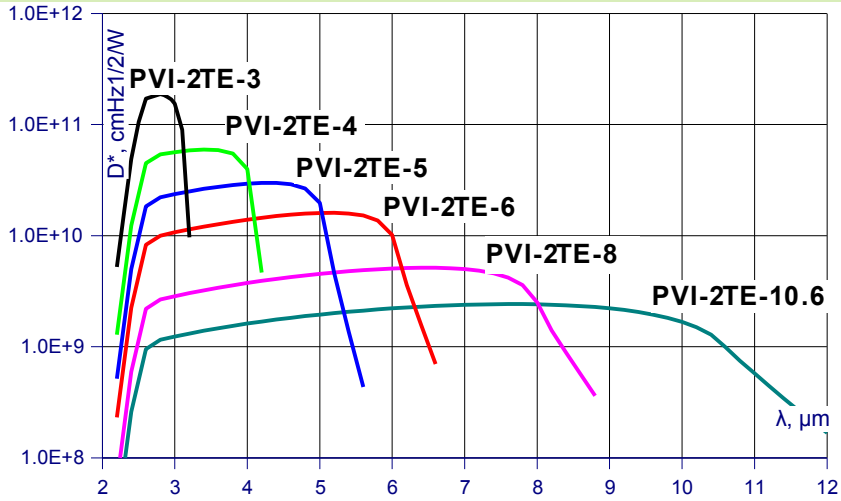
SERIES PVI-2TE 2-12 µm IR PHOTOVOLTAIC DETECTORS
THERMOELECTRICALLY COOLED / OPTICALLY IMMERSED





FEATURES

- High performance in the 2-12 µm range without LN-cooling!
- Fast response
- No flicker noise
- Convenient to use
- Wide dynamic range
- Compact, rugged and reliable
- Low cost
- Prompt delivery
- Custom design upon request

DESCRIPTION

The PVI-2TE-n (where n is wavelength λ_{op}, in micrometers, to which the detector is optimized) series photodetectors are two-stage TE-cooled IR photovoltaic detectors, which have been optically immersed to high refractive index GaAs (or CdZnTe) hyperhemispherical (standard) or hemispherical (option) lenses. These devices can be optimized for the maximum performance anywhere within 2 to 11 µm range. High performance and stability were achieved by using a variable gap (Hg,Cd,Zn)Te semiconductors, optimized doping and improved surface processing. Custom devices with quadrant cells, multielement arrays, various immersion lenses, windows and optical filters are available on request.

Standard detectors are available in modified TO-8 packages with BaF_2 windows. Other packages, windows and connectors are available upon request. See application notes for more details.

Multiple cells connected in series are preferable for large area devices. They are characterized by similar D*, larger parallel resistance and lower R_i.

SPECIFICATION* @ 20ºC

CHARACTERISTICS	UNITS	PVI-2TE-3	PVI-2TE-4	PVI-2TE-5	PVI-2TE-6	PVI-2TE-8	PVI-2TE-10.6
λ_{op}	µm	3	4	5	6	8	10,6
Detectivity:							
at λ_{peak}	$cmHz^{1/2}/W$	≥2E11	≥6E10	≥3E10	≥2E10	≥5E9	≥3E9
at λ_{op}		≥1.5E11	≥4E10	≥2E10	≥1E10	≥2E9	≥1E9
Responsivity	A/W	≥1.2	≥1.3	≥1.3	≥1.2	≥1	≥0.7
Response time	ns	≤15**	≤20**	≤20**	≤10**	≤7**	≤3**
Parallel resistance-optical area product	$\Omega \times cm^2$	≥30	≥10	≥2	≥0.60	≥0.1	≥0.01
Optical area length × width or diameter for round devices	mm×mm mm	0.2×0.2; 0.25×0.25; 0.5×0.5; 1×1; 2×2; ø0.2; ø0.25; ø0.5; ø1; ø2; ø3					See PVMI-2TE-10.6 for large areas
Operating temperature	K	220÷240					
Acceptance angle, F#	deg	35, 1.65					

* Data sheet states minimum D* values for each detector model. Higher performance detectors can be provided upon request.
** Faster response may be achieved at reverse bias and with high-frequency-optimized devices.
See application notes for more details.

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