



Photodiode

EPD-440-0/3.6

Preliminary

11.04.2007

rev. 03/07

Wavelength	Type	Technology	Case
UV	Schottky Contact	GaP	TO-39 + UV-glass

The drawings show a cross-section of the photodiode with dimensions: 5.08 mm total height, 0.45 mm top layer thickness, 3.25 mm chip width, 5.90 mm chip length, 8.13 mm package length, 13.5 mm anode diameter, and 2.00 mm chip offset. The top view shows a circular package with a 9.50 mm diameter, 0.762 mm chip diameter, 0.80 mm chip offset, and a 45.00 degree angle. Labels include 'Anode', 'Chip Location', and 'EUC-69'.

Description
 Wide bandwidth and high spectral sensitivity in the UV and visible range (190 nm - 570 nm), mounted in hermetically sealed TO-39 package with UV-glass window

Applications
 Medical engineering (dermatology), output check of UV - lamps and oil or gas burner flame, measurement and control of ecological parameters, radiation control for a solarium, UV water purification facilities

Miscellaneous Parameters

T_{amb} = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Active area		A	10.9	mm ²
Temperature coefficient of I _D		T _C (I _D)	7.0	%/K
Operating temperature range		T _{amb}	-40 to +125	°C
Storage temperature range		T _{stg}	-40 to +125	°C
Acceptance angle at 50% S _λ		φ	135	deg.

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Breakdown voltage ¹⁾	I _R = 10 μA	V _R	5			V
Dark current	V _R = 5 V	I _D		20	80	pA
Peak sensitivity wavelength	V _R = 0 V	λ _p		440		nm
Responsivity at λ _p	V _R = 0 V	S _λ		0.17		A/W
Sensitivity range at 1%	V _R = 0 V	λ _{min} , λ _{max}	190		570	nm
Spectral bandwidth at 50%	V _R = 0 V	Δλ _{0.5}		180		nm
Shunt resistance	V _R = 10 mV	R _{SH}	50	70		GΩ
Noise equivalent power	λ = 440 nm	NEP		1.5x10 ⁻¹⁴		W/√Hz
Specific detectivity	λ = 440 nm	D*		2.2x10 ¹²		cm · √Hz · W ⁻¹
Junction capacitance	V _R = 0 V	C _J		2.6		nF
Switching time (R _L = 50 Ω)	V _R = 5 V	t _r , t _f		1/130		ns
Photo current at λ = 440 nm ^{1,2)}	V _R = 0 V E _e = 1 mW/cm ²	I _{ph}		14		μA

¹⁾for information only

²⁾measured with common halogen lamp source and appropriate filter



Typical responsivity

EPD-440-0

