LA PD60HP1

PIN diode 60 mil

Light Avenue Premium Edition detector series is designed for high performance consumer applications. This chip is a high sensitive PIN photodiode chip with 1.65 mm^2 sensitive area detecting visible and near infrared radiation. Anode and cathode are both located on top of the chip.

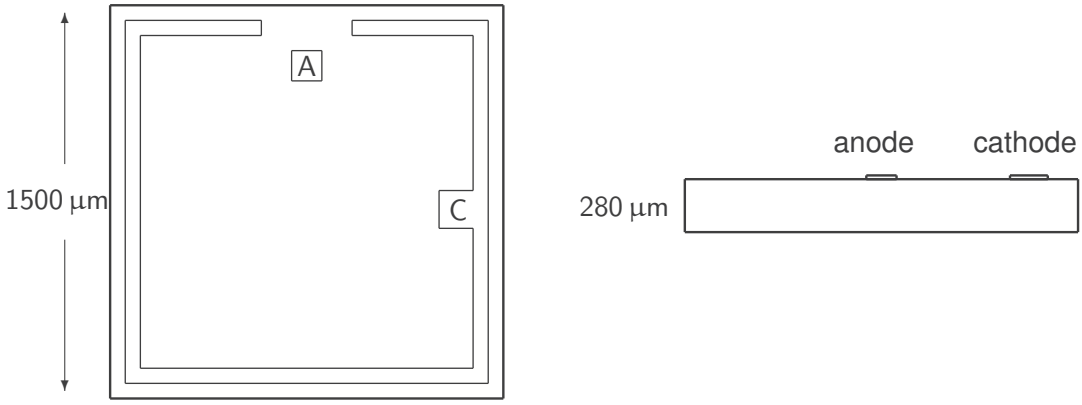
Features

- High sensitivity silicon PIN photodiode
- Cathode and anode on top of the chip
- Low dark current
- Substrate Si, n-type, high resistivity
- Radiant sensitive area: 1.65 mm^2

Applications

- Industrial electronics
- Photomodule applications
- Sensors

Delineation



Mechanical characteristics

DESCRIPTION		MINIMUM	TYPICAL[1]	MAXIMUM
Chip size	(µm)	1450	1500	1550
Chip height	(µm)	255	280	305
Bond pad anode	(μm^2)		140 x 140	
Bond pad cathode	(μm^2)		160 x 190	
Anode contact		AlSi		
Cathode contact		AlSi		
Die attach		Epoxy bonding		

Electro-optical characteristics ($T_A = 25°C$)[2]

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.[1]	MAX.	UNIT
Reverse dark current	I_{r01}	$V_R = 10\,V$, E = 0			3	nA
	I_{r02}	$V_R = 32\,V$, E = 0			5	nA
Junction capacitance	C_D	$V_R = 0\,V$, E = 0, $f = 1\,MHz$		18		pF
	C_D	$V_R = 3\,V$, E = 0, $f = 1\,MHz$		7		pF
	C_D	$V_R = 5\,V$, E = 0, $f = 1\,MHz$		6		pF
Reverse light current	I_{ra}	$E_e = 1\,mW/cm^2$, $\lambda = 950\,nm$, $V_R = 5\,V$	11			μA
Wavelength of peak sensitivity	λ_p	$V_R = 5\,V$		950		nm
Range of spectral bandwidth	$\lambda_{0.5}$			590 - 1070		nm
Rise time	t_r	$V_R = 5\,V$, $\lambda = 870\,nm$, $R_L = 1\,k\Omega$		625		ns
Fall time	t_f	$V_R = 5\,V$, $\lambda = 870\,nm$, $R_L = 1\,k\Omega$		670		ns

Maximum ratings ($T_A = 25°C$)[3]

PARAMETER	SYMBOL	VALUE	UNIT
Operating temperature range	T_{op}	-40...+85	°C
Reverse voltage	V_R	40	V
Detector junction temperature	T_j	100	°C

Notes:

- The measurements are based on samples of die which are mounted on a TO-header without resin coating
- The usage of detectors in life-support devices or systems has to be expressly and written authorized by the supplier!
- Dice are shipped on blue foil with or without frame and have therefore to be stored between 15 and 30°C and below 60% relative humidity.
- Lead free product - RoHS compliant.
- The information in this document is subject to change without notice and describes the die generally. It shall not be considered as assured characteristics or detailed specification.

- The quality level of the final visual inspection shall comply to an AQL of 1.0 (according to MIL-STD-105E, level II), if the customer performes an incoming visual inspection of a shipment.
- All chips are checked according to the "Failure Catalog of Light Avenue dice" dated 2009-11-14. The visual inspection shall be made in accordance with the "specification of visual inspection as referenced". The visual inspection of chip backside is performed with stereo microscope with incident light and 40x to 80x magnification. The quality inspection (final visual inspection) is performed by production. An additional visual inspection step as special release procedure by QM is not installed.If this document is not familiar to you, please request it at your next sales office.
- The hermetically sealed shipment lots shall be opened in temperature and moisture controlled cleanroom environment only. It is mandatory to follow the rules for disposition of material that can be hazardous for humans and environment.
- Product must be handled only at ESD safe workstations. Standard ESD precautions and safe work environments are as defined in MIL-HDBK-263.
- Singulated die are not to be handled with tweezers. A vacuum wand with non metallic ESD protected tip should be used.

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[1] Typical (Typ) data are defined as long-term production mean values. These values are not specified and only given for information.

[2] Measurements are done with an accuracy of $\pm$15%. Correlation to customer's equipment and products is required.

[3] Maximum ratings are package dependent and may differ between packages.