

## PS0.25-5 SMD

### Description

High speed epitaxy PIN photodiode with 0.25 mm<sup>2</sup> square active area. PCB carrier type non hermetic SMD package with epoxy moulding. Reflow solderable.

### Features

- 500 µm x 500 µm active area
- Low dark current
- Fast response time
- High speed epitaxy

### Applications

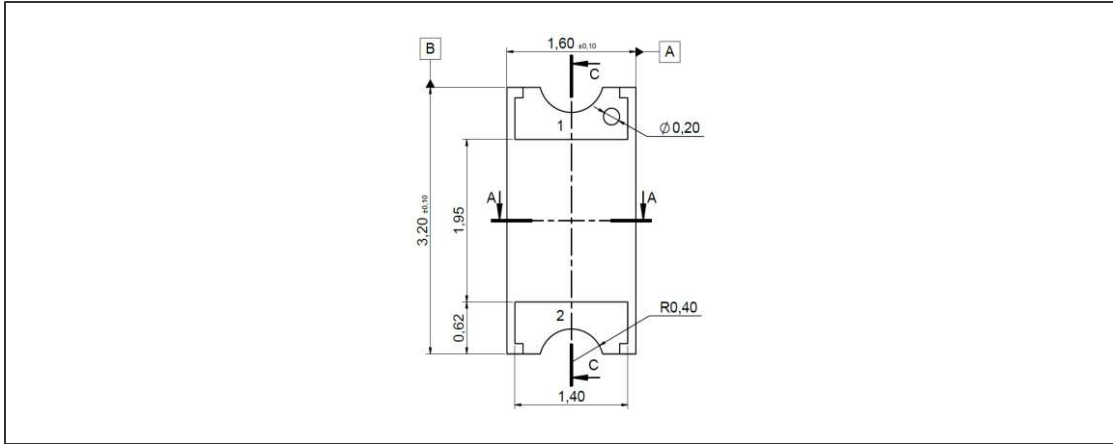
- Pulsed light detection
- High speed photometry
- High speed optical communications
- Fiber optic light monitoring

### RoHS

2011/65/EU

2015/863

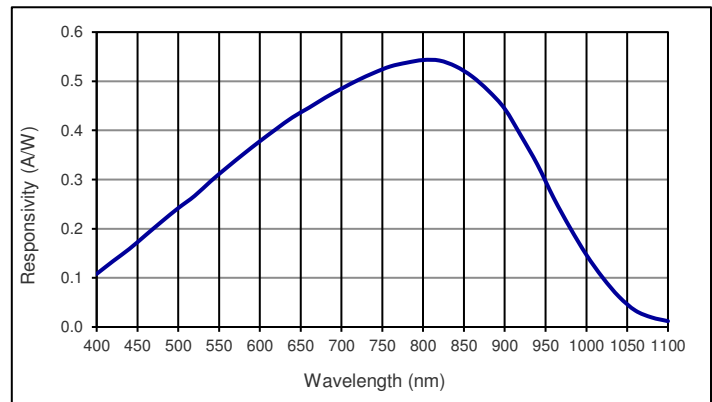
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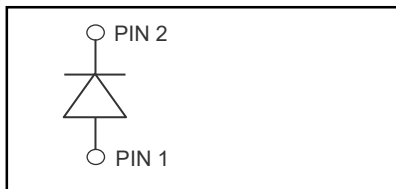
Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
$T_{STG}$	Storage temp	-45	100	°C
$T_{OP}$	Operating temp	-40	85	°C
$V_{max}$	Max reverse voltage		30	V
$I_{PEAK}$	Peak DC current		10	mA

Spectral response (23 °C)



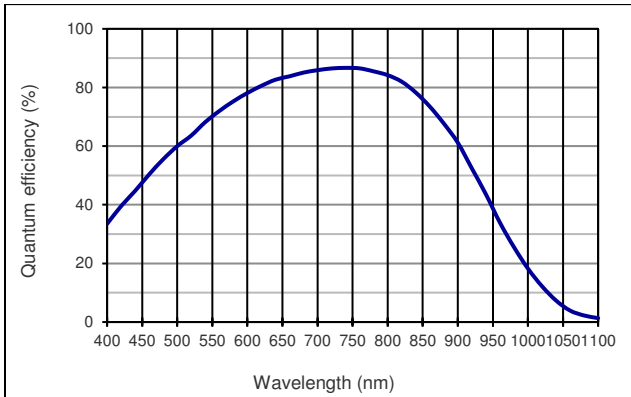
Schematic



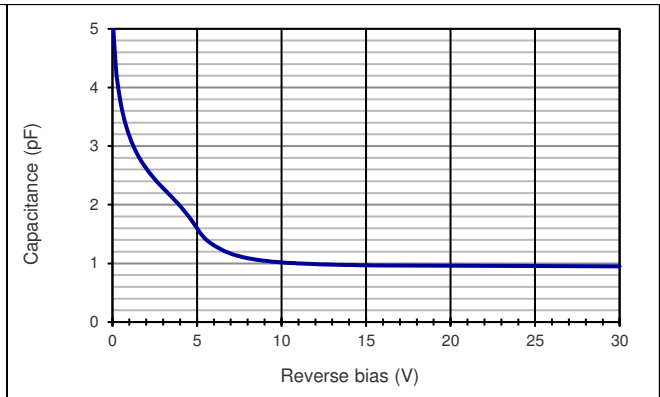
Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area		500 x 500			μm
	Active area		0.25			mm <sup>2</sup>
$I_D$	Dark current	$V_R = 20\text{ V}$		0.1	0.8	nA
C	Capacitance	$V_R = 0\text{ V}$		6	10	pF
C	Capacitance	$V_R = 20\text{ V}$		1.8		pF
	Responsivity	$\lambda = 635\text{ nm}$		0.4		A/W
	Responsivity	$\lambda = 800\text{ nm}$		0.52		A/W
$t_R$	Rise time	$V_R = 20\text{ V}; \lambda = 850\text{ nm}; R_L = 50\ \Omega$		0.4		ns
$V_{BR}$	Breakdown voltage	$I_R = 2\ \mu\text{A}$	30	50		V
	Shunt resistance	$V_R = 10\text{ mV}$		1000		MΩ
	N.E.P.	$V_R = 20\text{ V}; \lambda = 850\text{ nm}; \text{calculated}$		1.1 E-14		W/√Hz

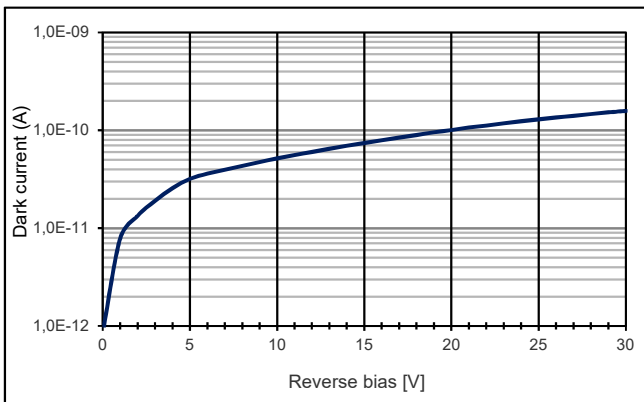
Quantum efficiency (23 °C)



Capacitance as fct of reverse bias (23 °C)



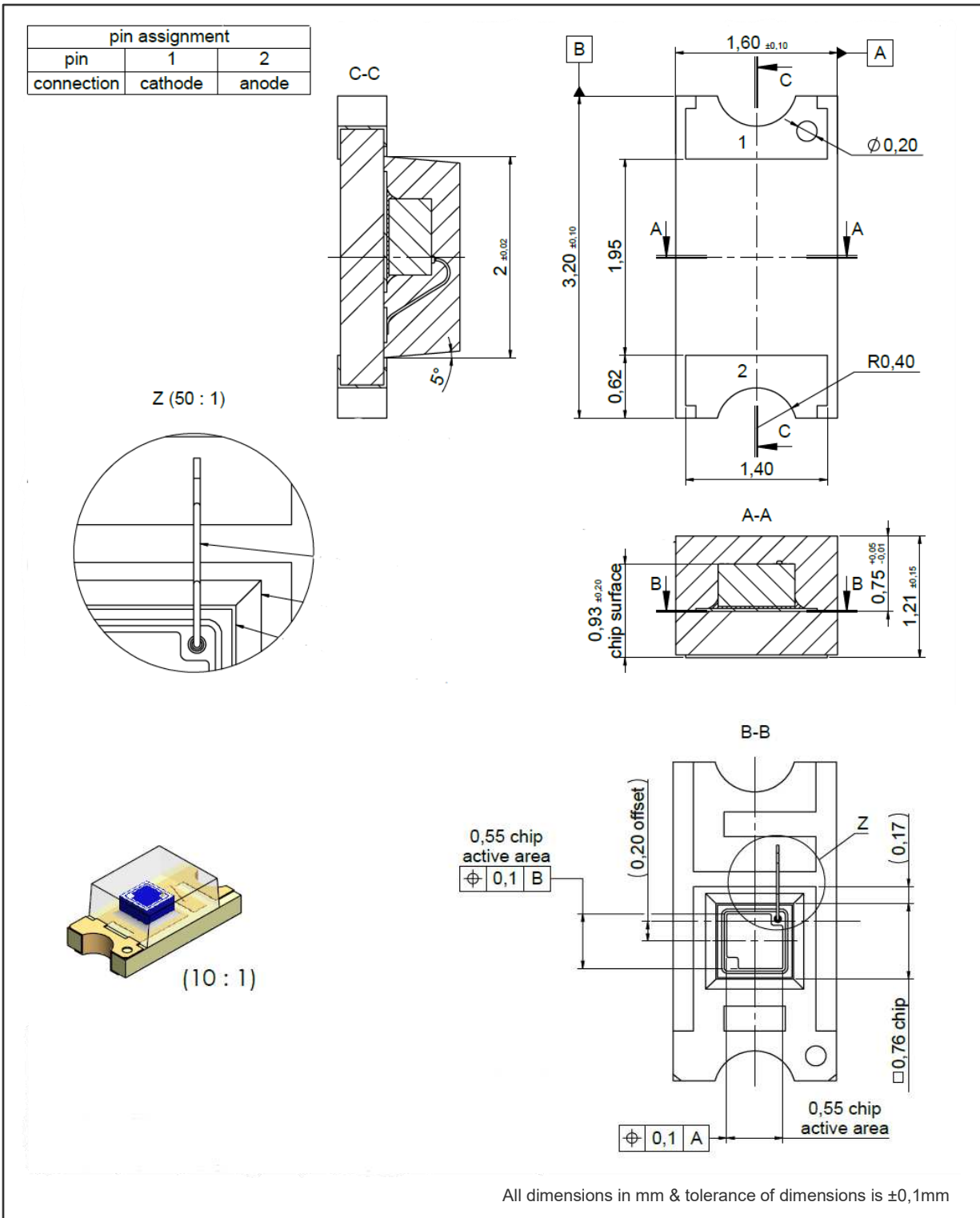
Dark current as fct of bias (23 °C)



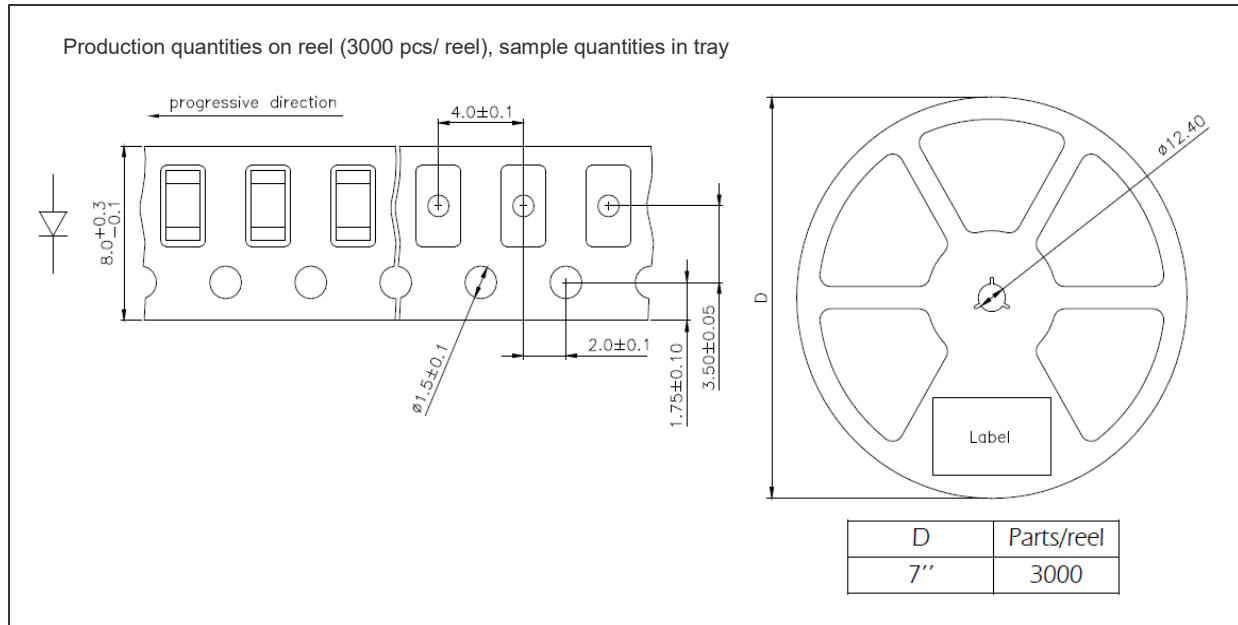
Application hints:

Please refer to document "Instructions for handling and processing"

Technical Drawing, Package: SMD1206



Package Dimension



Application hints moisture sensitivity

- This product has MSL 3 according to JEDEC, i.e. a floor life of 168h at 30°C and 60% relative humidity
- The reels are shipped in dry packs. Once dry packs are opened or damaged the floor life has to be considered.
- Reflow soldering after floor life is exceeded might cause damage to the component.
- After floor life is exceeded the reel has to be baked or dried before reflow soldering to avoid failures.
- The recommended baking condition according to JEDEC STD-033C is 13 days at 40°C and 5% relative humidity.

Application hints

Please refer to document "Instructions for handling and processing"

Optical inspection

Optical inspection according to First Sensor/ TE failure catalogue for optical "FK INS 203"

Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.

## PS0.25-5 SMD

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### Ordering information (standard configurations)

Description	TE Part Number	MPQ
PS0.25-5 SMD (moulded 1206)	3006742-F	1000 pcs

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