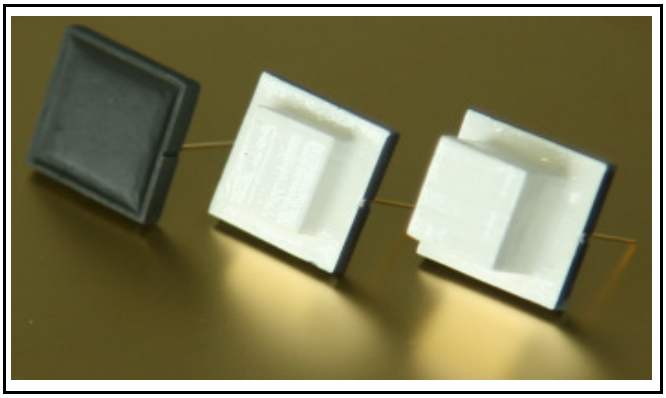
First Sensor

First Sensor PIN PD Data Sheet

Part Description X100-7 THD

Order # 50147701; 50147702

Version 07-10-13



Features

- 100 mm² PIN detector
- CsI:Tl scintillator
- Low dark current
- Low capacitance
- High shunt resistance
- High sensitivity

Description

Square active area PIN photodiode with 100 mm² active area. Ceramic carrier type 2-pin package with CsI:Tl scintillator (8 mm #50147701; 4 mm #50147702).

Application

- Ionizing radiation detector
- Medical equipment
- Personal dosimeter

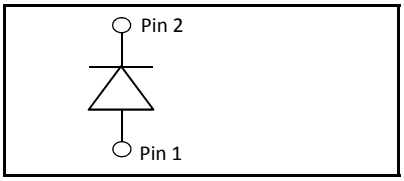
RoHS

2002/95/EC

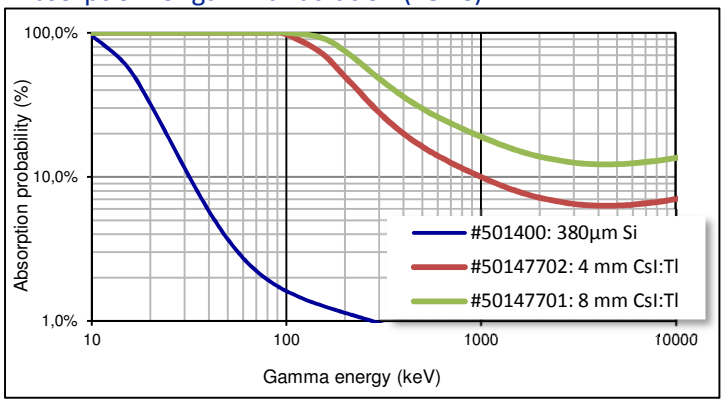
Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-40	65	°C
T_{OP}	Operating temp	-20	60	°C
V_{max}	Max reverse voltage		50	V
I_{PEAK}	Peak DC current		10	mA

Schematic



Absorption of gamma radiation (23 °C)



Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area			10 x 10		mm
	Active area			100		mm²
	Detectable radiation	Gamma radiation	1		10000	keV
	Scintillator thickness	**# 50147702**; Material: CsI:Tl		4		mm
		# 50147701; Material: CsI:Tl		8		mm
	Count rate Cs-137	**# 50147702;** V_R = 10 V	500		750	cpm /
		# 50147701; V_R = 10 V	800		1200	µSv/h
I_D	Dark current	V_R = 10 V		1.5	2.5	nA
S_{abs}	Responsivity	V_R = 10 V; λ = 550 nm (emission peak of CsI:Tl)		0.27		A/W
C	Capacitance	V_R = 0 V; f = 10 kHz		500		pF
		V_R = 10 V; f = 10 kHz		80	105	pF
t_R	Rise time	V_R = 10 V; E = 622 keV; R_L = 50 Ω			1	µs
	Shunt Resistance	V_R = 10 mV		40		MΩ
	Noise current	V_R = 10V		6.1 E-14		A/√Hz
V_{BR}	Breakdown voltage	I_R = 2 µA	50	80		V

European, International Sales:

First Sensor

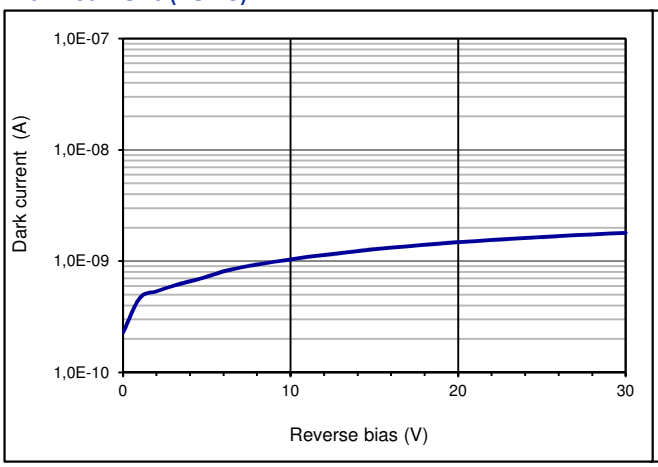
First Sensor AG
Peter-Behrens-Strasse 15
12459 Berlin
Germany
T +49 30 6399 2399
F +49 30 639923-752
sales.opto@first-sensor.com

USA:

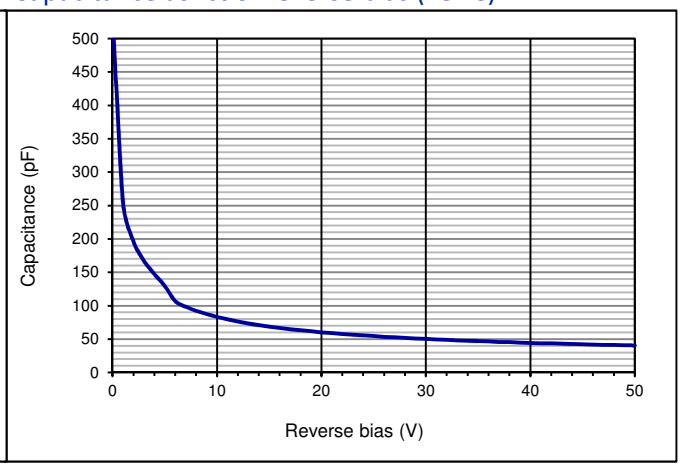
First Sensor

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5700 Corsa Avenue #105
Westlake Village
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F +1 818 889 7053
sales.us@first-sensor.com

Dark current (23 °C)



Capacitance as fct of reverse bias (23 °C)



Package dimension:

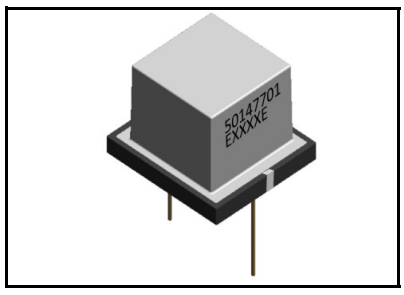
Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

Handling:

Please refer to document "Instructions for handling and processing"
Only suitable for hand soldering. Keep temperature of device below 65 °C

Labeling:

Each detector with scintillator is ink-jet labled with order number and lot number.
The lable is situated on the coated scintillator at the side of the anode pin.
A notch marks the side with anode pin and lable.
The lable size is approx. 8 mm x 3 mm.



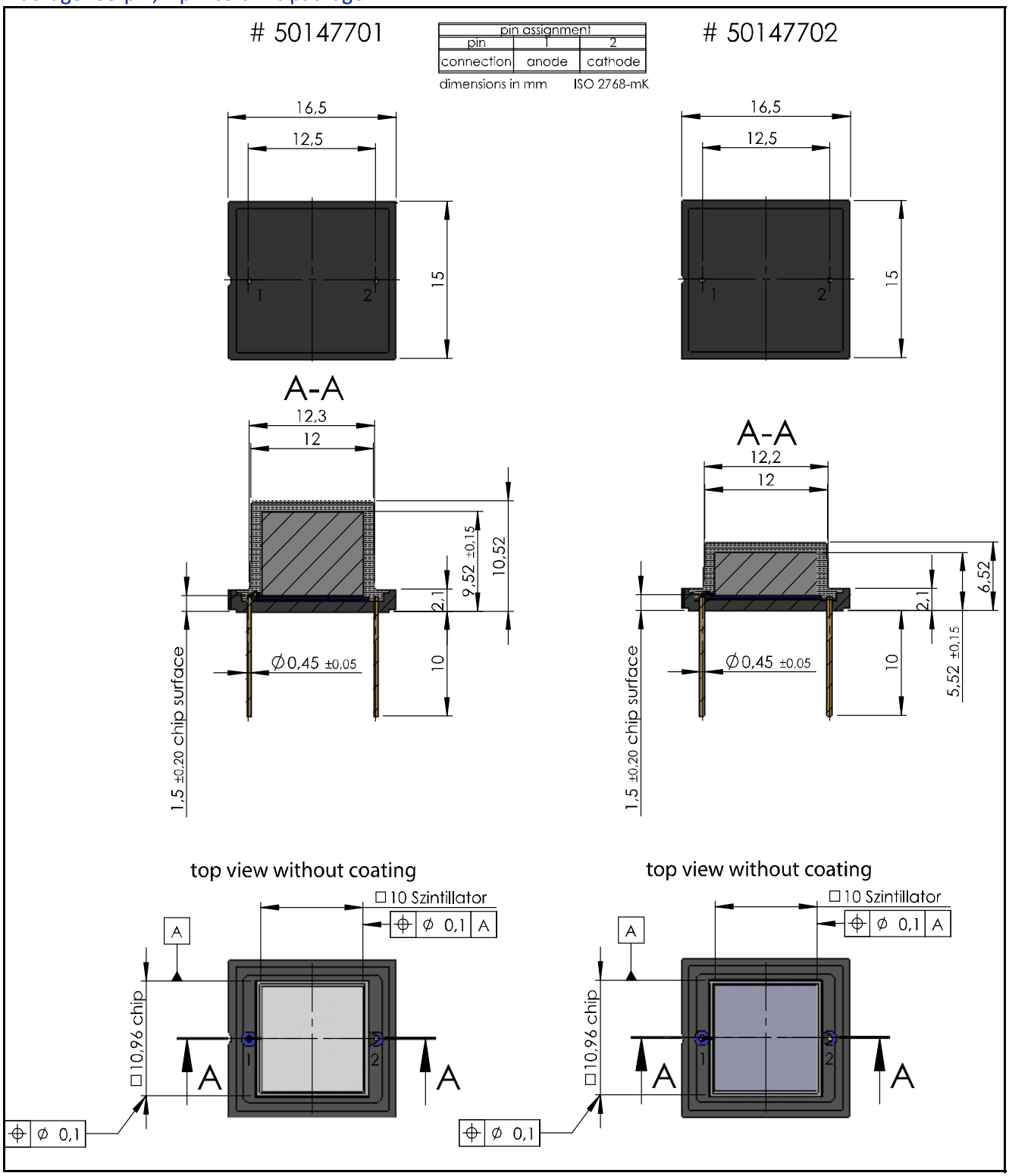
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Package: Cerpin, 2 pin ceramic package



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

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