

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# First Sensor PIN PD Data Sheet

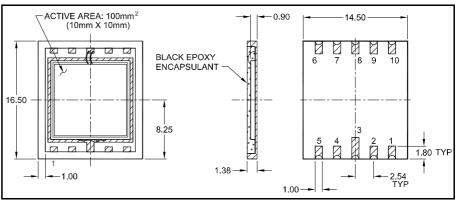
Part Description X100-7 SMD

International / US Order # 501401 / 01-163

Version 26-11-13



First Sensor



#### **Features**

- 100 mm<sup>2</sup> PIN detector
- Light blocking encapsulant
- Low dark current
- Low capacitance
- High shunt resistance
- High sensitivity

#### Description

Square active area PIN photodiode with 100 mm² active area. Ceramic carrier type LCC10 package with light blocking black epoxy encapsulant. Reflow solderable. Nonhermetic.

#### **Application**

- Ionizing radiation detector
- Medical equipment
- Personal dosimeter

### RoHS

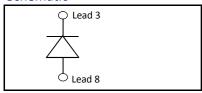
2002/95/EC



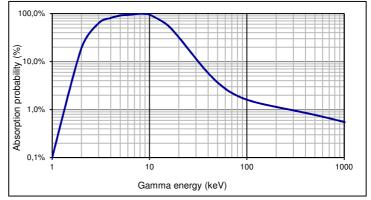
#### Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit			
T <sub>STG</sub>	Storage temp	-40	100	°C			
T <sub>OP</sub>	Operating temp	-20	70	°C			
$V_{max}$	Max reverse voltage		50	V			
I <sub>PEAK</sub>	Peak DC current		10	mA			

#### **Schematic**



# Absorption of gamma radiation (23 °C)



# Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Тур	Max	Unit
	Active area			10 x 10		mm
	Active area			100		mm²
	Energy range of	Gamma radiation	5		1000	keV
	detectable radiation					
$I_D$	Dark current	V <sub>R</sub> = 12 V		1.5	3	nA
$T_K(I_D)$	Temperature coefficient	V <sub>R</sub> = 12 V; change of dark current		13		%/K
С	Capacitance	$V_R = 0 \text{ V; } f = 10 \text{ kHz}$		500		рF
		V <sub>R</sub> = 12 V; f = 10 kHz		80		рF
t <sub>R</sub>	Rise time	$V_R = 12 \text{ V; E} = 10 \text{ keV; R}_L = 50 \Omega$			500	ns
	Shunt Resistance	V <sub>R</sub> = 10 mV		40		МΩ
	Noise current	V <sub>R</sub> = 12 V		6.1 E-14		A/√Hz
$V_{BR}$	Breakdown voltage	$I_R = 2 \mu A$	50	80		V

European, International Sales:



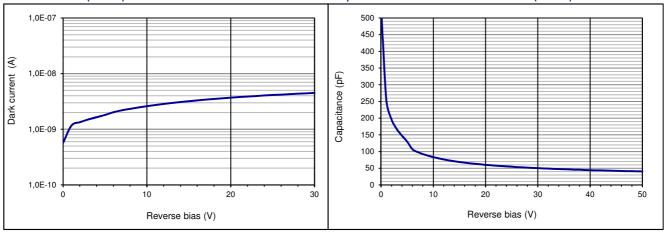


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# Dark current (23 °C)

# 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"

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



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