Fermionics *Opto-Technology*

SERIES NUMBER
FD100

High Speed InGaAs PIN Photodiodes
diameter of active area=100 μm

DESCRIPTION

High-speed, low dark current, low capacitance photodiode for high speed communication systems, LANs, and FDDI applications. The photosensitive area is 100 microns in diameter. Planar-passivated device structure.

ABSOLUTE MAXIMUM RATINGS (T=25°C)

PARAMETER	RATING	UNITS
Storage Temperature	-40 to +100	°C
Operating Temperature	-40 to +85	°C
Forward Current	5	mA
Reverse Current	0.5	mA
Reverse Voltage	30	V

OPTICAL AND ELECTRICAL CHARACTERISTICS (T=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Responsivity	R	λ = 1300 nm	0.80	0.90	-	A/W
		λ = 1550 nm	0.85	0.95	-	
Dark Current	I_d	V_R=5V	-	0.5	3	nA
Rise/Fall Time	t_R/t_F	V_R=5V	-	0.3	0.7 ❶	ns
Capacitance	C	V_R=5V	-	1.1	1.5 ❷	pF

❶ t_R/t_F<0.4 ns for diodes mounted on ceramic submounts
❷ C<1.2 pF for diodes mounted on ceramic submounts

PACKAGE OPTIONS

PART NUMBER	PACKAGE DESCRIPTION
FD100W	TO-18 with AR-coated flat window cap
FD100L	TO-18 with lens cap
FD100S2	type S2 alumina ceramic submount
FD100S3	type S3 alumina ceramic submount
FD100FC	TO-style diode installed in FC-connector receptacle
FD100SC	TO-style diode installed in SC-connector receptacle
FD100ST	TO-style diode installed in ST-connector receptacle
FD100F(core/cladding)	TO-style diode with integral fiber pigtail (specify fiber core/cladding)

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TYPICAL CHARACTERISTICS

Fig. 1 Spectral Response (R vs λ)

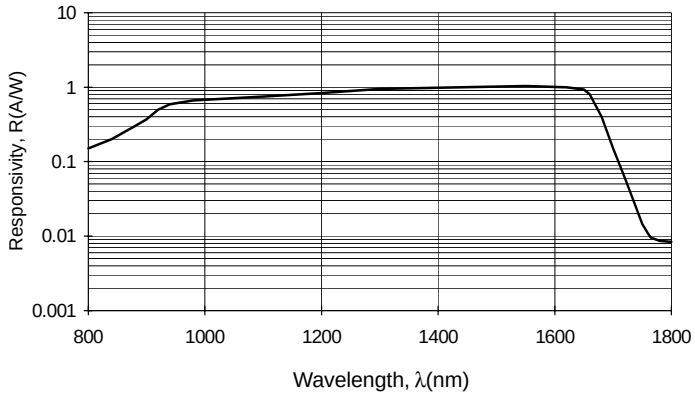


Fig. 2 Dark Current vs Reverse Voltage

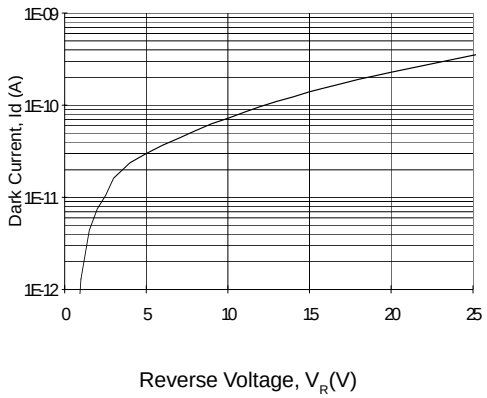


Fig. 3 Capacitance vs Reverse Voltage

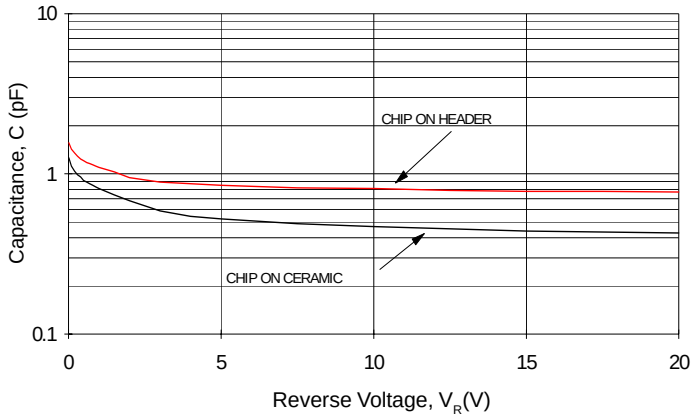
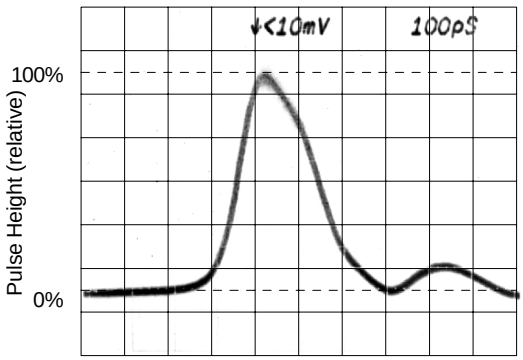


Fig. 4 Response to Optical Impulse



100 ps/div

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