

**FEATURES**

- Data rates up to 2.5 Gb/s
- High Quantum Efficiency: 0.8A/W at 1,310nm
- Low dark current: 0.1nA
- Photosensitive area: 50µm diameter
- Wide spectral response range: 900nm to 1,600nm

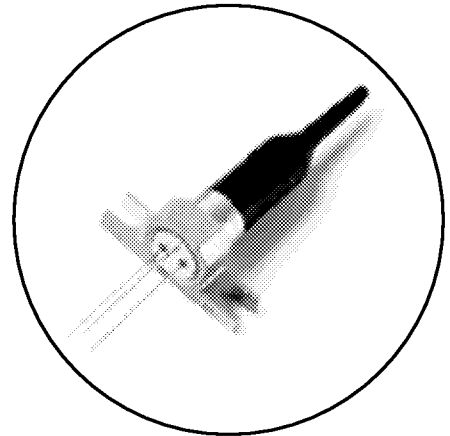
**APPLICATIONS**

- Optical transmission system: STM-1 (OC-3), STM-4 (OC-12) or STM-16 (OC-48) short haul.

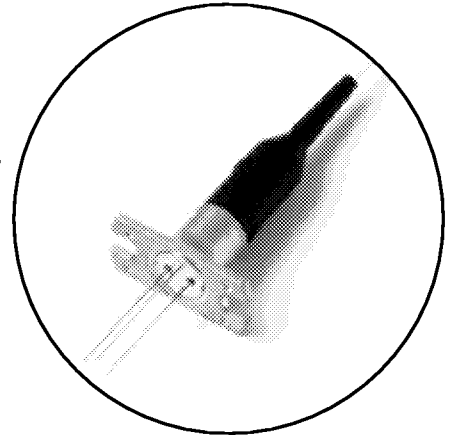
**DESCRIPTION**

The FID3Z1KX/LX is a InGaAs PIN photodiode with a multimode fiber pigtail designed for use in local area network, subscriber loop and high bit-rate transmission system applications up to 2.5 Gb/s at both 1,310nm and 1,550nm wavelength. The PIN chip has a photosensitivity area diameter of 50µm with a planar structure and guard ring for high reliability. A multimode fiber is aligned to the hermetically sealed PIN diode. The optical alignment system has the high coupling stability.

KX



LX



### ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)

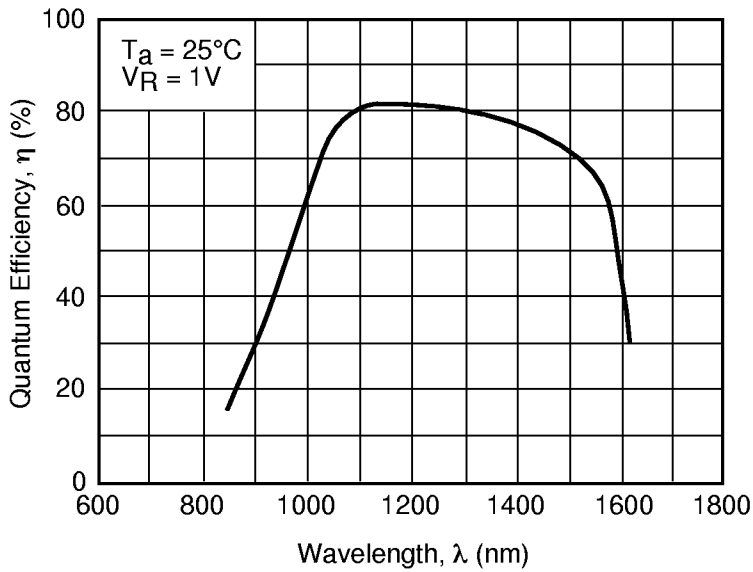
Parameter	Symbol	Ratings	Unit
Storage Temperature	T <sub>stg</sub>	-40 to +90	°C
Operating Case Temperature	T <sub>op</sub>	-40 to +85	°C
Forward Current	I <sub>F</sub>	5	mA
Reverse Current	I <sub>R</sub>	2	mA
Reverse Voltage	V <sub>R</sub>	20	V

### OPTICAL & ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=-40 to +85°C, λ=1,310/1,550nm unless otherwise specified)

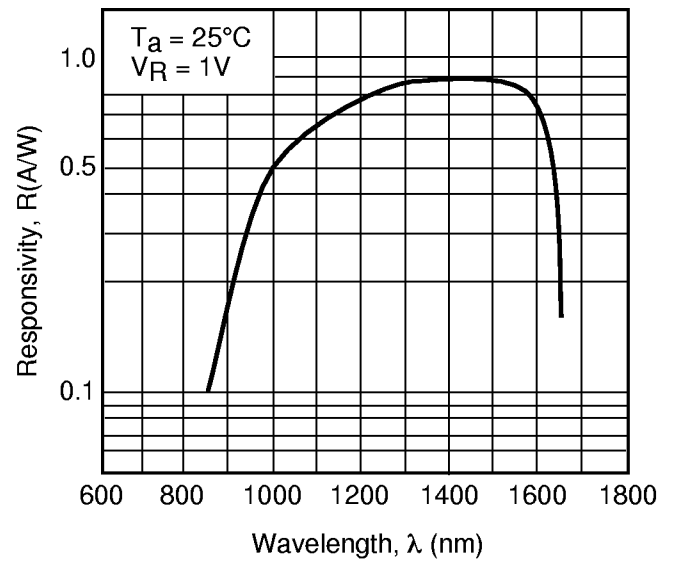
Parameter	Symbol	Conditions	Limits		Unit
			Min.	Max.	
Responsivity	R	V <sub>R</sub> =1V, 1300nm	0.80	-	A/W
		V <sub>R</sub> =1V, 1500nm	0.85	-	A/W
Variation of Responsivity	ΔR	V <sub>R</sub> =1V, -20 to +70°C	-	±3	%
		V <sub>R</sub> =1V, -40 to +85°C	-	±4	%
Dark Current	I <sub>D</sub>	V <sub>R</sub> =5V, T <sub>a</sub> =25°C	-	1	nA
		V <sub>R</sub> =5V, T <sub>a</sub> =70°C	-	10	nA
		V <sub>R</sub> =5V, T <sub>a</sub> =85°C	-	20	nA
Cut-off Frequency	f <sub>c</sub>	R <sub>L</sub> =50Ω, V <sub>R</sub> =5V -3dB from 500 kHz	2.5	-	GHz
Capacitance	C <sub>t</sub>	f=1MHz, V <sub>R</sub> =5V	-	0.9	pF
Optical Return Loss	ORL		30	-	dB

Note 1: Optical characteristics are specified on the condition that single mode fiber is used as the optical source for testing.

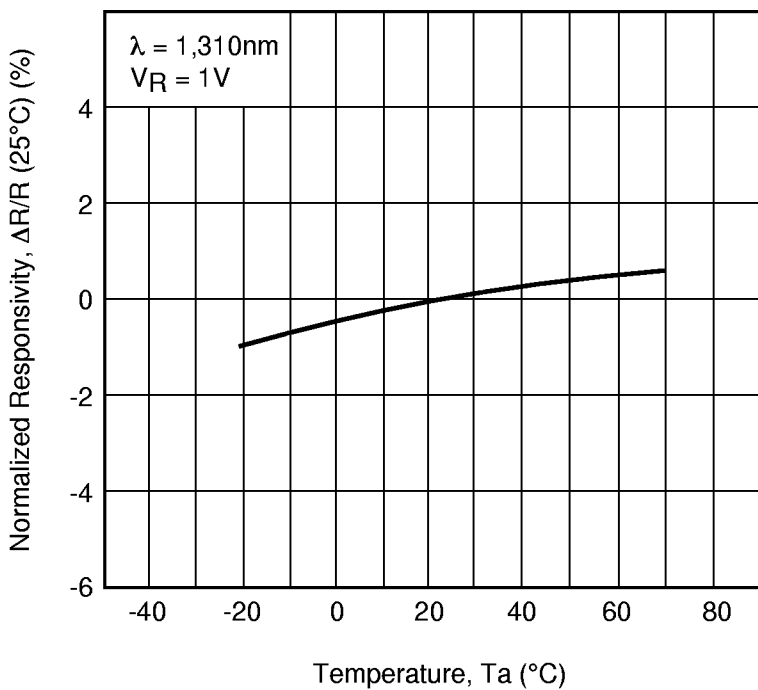
**Fig. 1 Spectral Response ( $\eta$  vs.  $\lambda$ )**



**Fig. 2 Spectral Response (R vs.  $\lambda$ )**



**Fig. 3 Temperature Dependence of Responsivity**



**Fig. 4 Dark Current vs. Reverse Voltage**

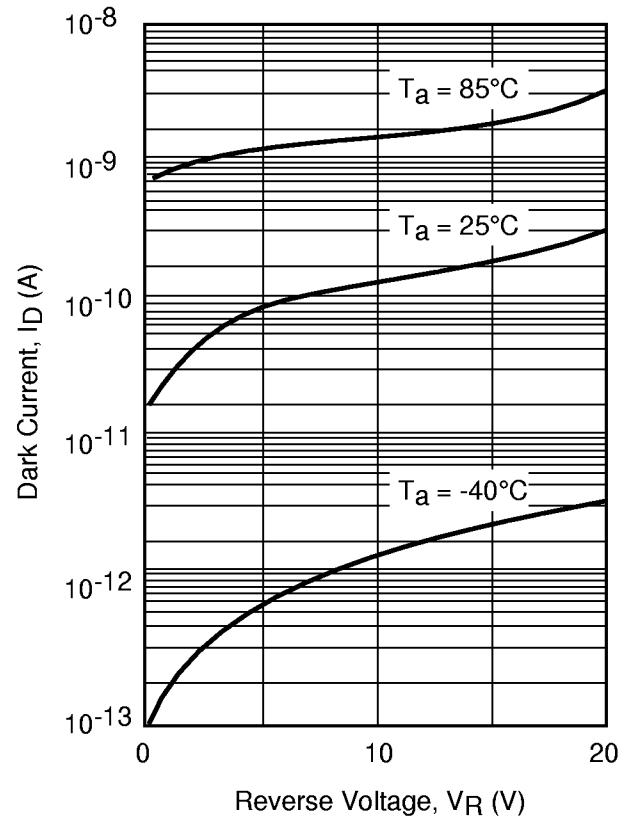


Fig. 5 Dark Current vs. Temperature

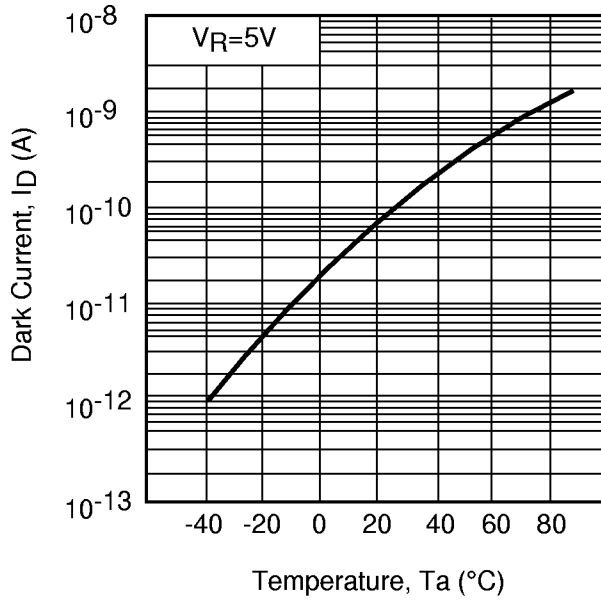


Fig. 6 Frequency Response

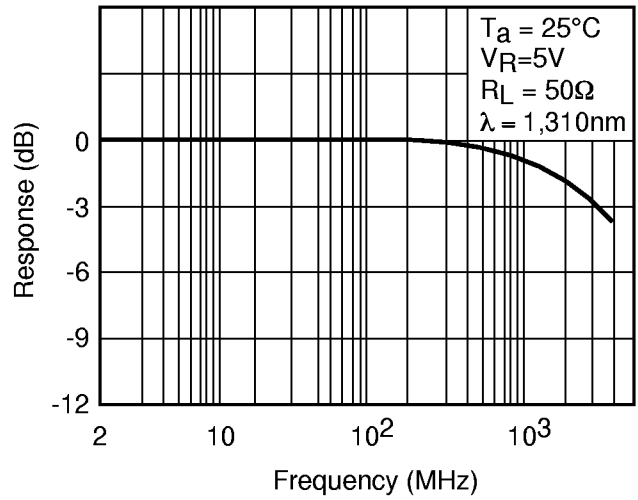
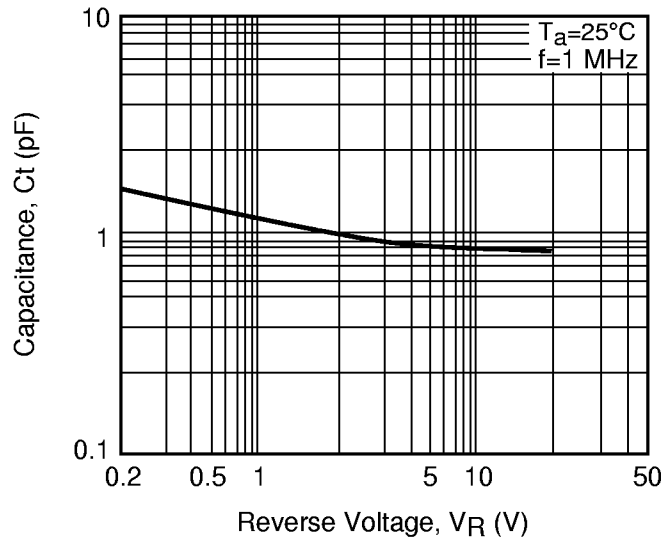
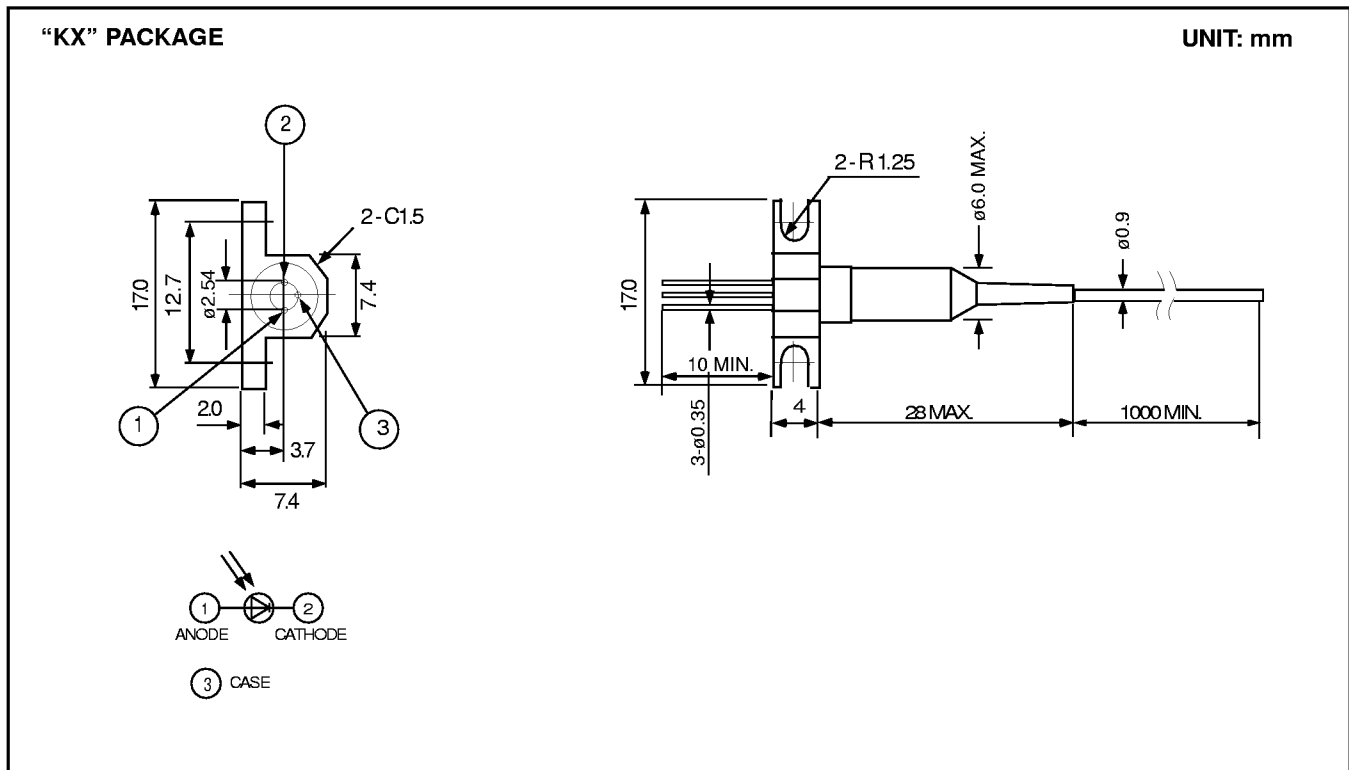
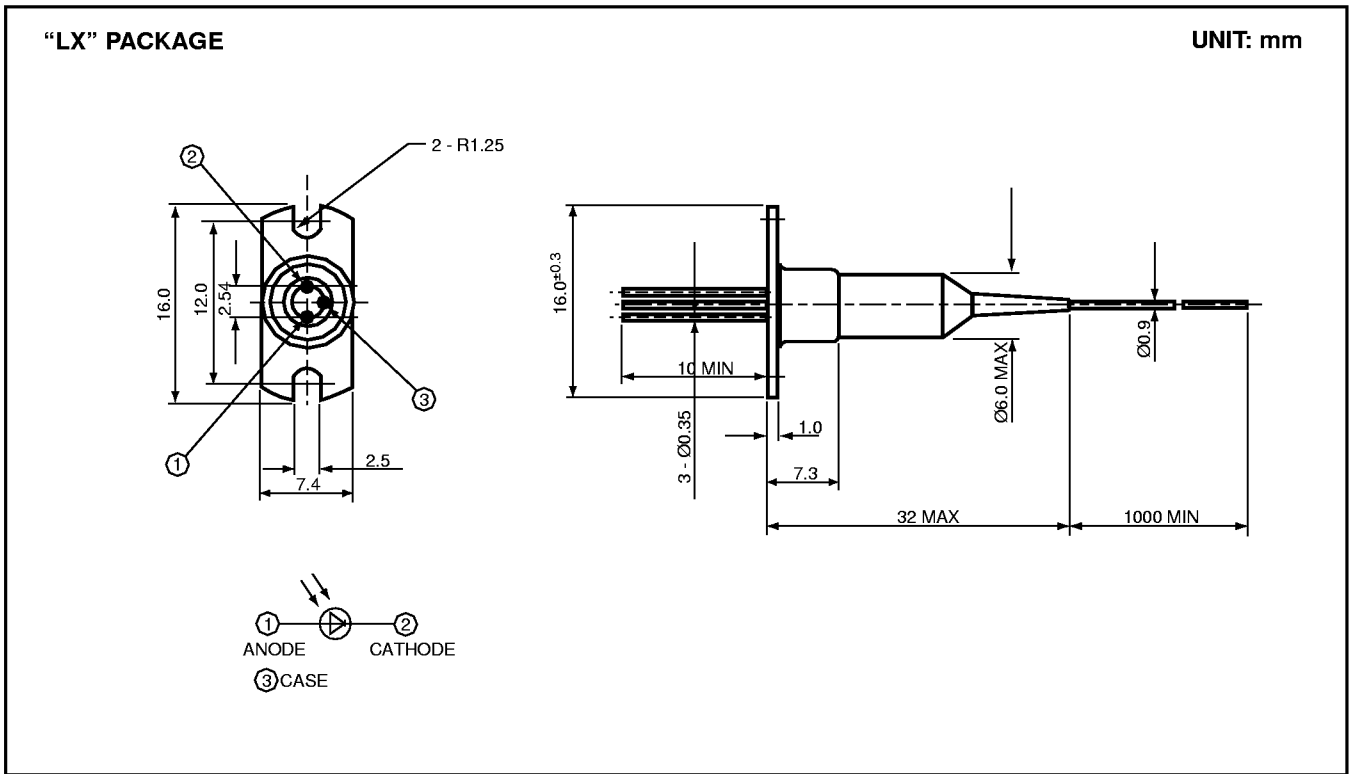


Fig. 7 Capacitance vs. Reverse Voltage





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