

**FEATURES**

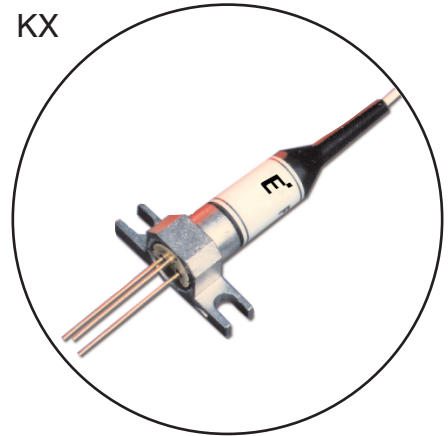
- Data rates up to 2.5 Gb/s
- High Quantum Efficiency: 0.8A/W at 1,310nm
- Low dark current: 0.1nA
- Photosensitive area: 50µm diameter
- Wide spectral response range: 900nm to 1,600nm

**APPLICATIONS**

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

**DESCRIPTION**

The FID3Z2KX/LX is a 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 guardring 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 ( $T_a=25^{\circ}\text{C}$ , Unless otherwise specified)

Parameter	Symbol	Limits		Unit
		Min.	Max.	
Storage Temperature	$T_{\text{stg}}$	-40	+90	$^{\circ}\text{C}$
Operating Case Temperature	$T_{\text{op}}$	-40	+85	$^{\circ}\text{C}$
PIN Reverse Voltage	$V_R$	0	20	V
PIN Forward Current	$I_F$	-	5	mA
PIN Reverse Current	$I_R$	-	2.0	mA

## OPTICAL & ELECTRICAL CHARACTERISTICS

( $T_a=-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ,  $\lambda=1,300$  and  $1,500\text{nm}$ , Unless otherwise specified)

Parameter	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
PIN Responsivity	R	$V_R=1\text{V}$ , 1,300nm 1,500nm	0.80	0.89	-	A/W
			0.85	0.93	-	
Variation of Responsivity	$\Delta R$	$V_R=1\text{V}$ , $-20$ to $+70^{\circ}\text{C}$ $-40$ to $+85^{\circ}\text{C}$	-	-	$\pm 3$	%
			-	-	$\pm 4$	
Dark Current	$I_D$	$V_R=5\text{V}$ , $T_a=25^{\circ}\text{C}$ $T_a=70^{\circ}\text{C}$ $T_a=85^{\circ}\text{C}$	-	0.1	2	nA
			-	-	10	
			-	-	20	
Cut-off Frequency	$f_c$	$V_R=5\text{V}$ , $R_L=50\Omega$ , -3dB from 500kHz	1.5	2.0	-	GHz
Capacitance	$C_t$	$f=1\text{MHz}$ , $V_R=5\text{V}$ ,	-	0.9	1.3	pF
Optical Return Loss	ORL		30	-	-	dB

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

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

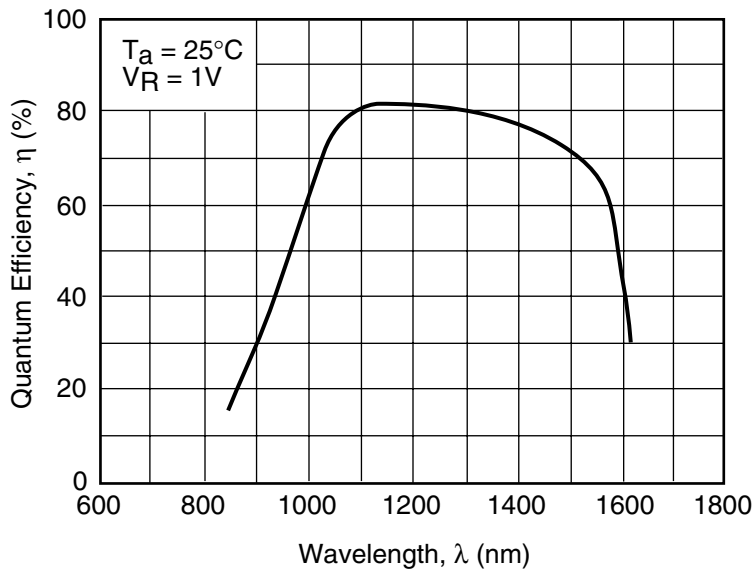


Fig. 2 Spectral Response ( $R$  vs.  $\lambda$ )

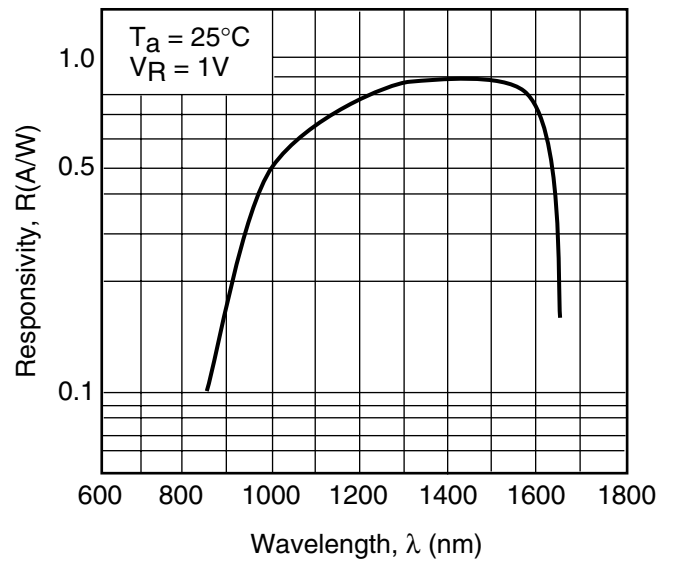


Fig. 3 Temperature Dependence of Responsivity

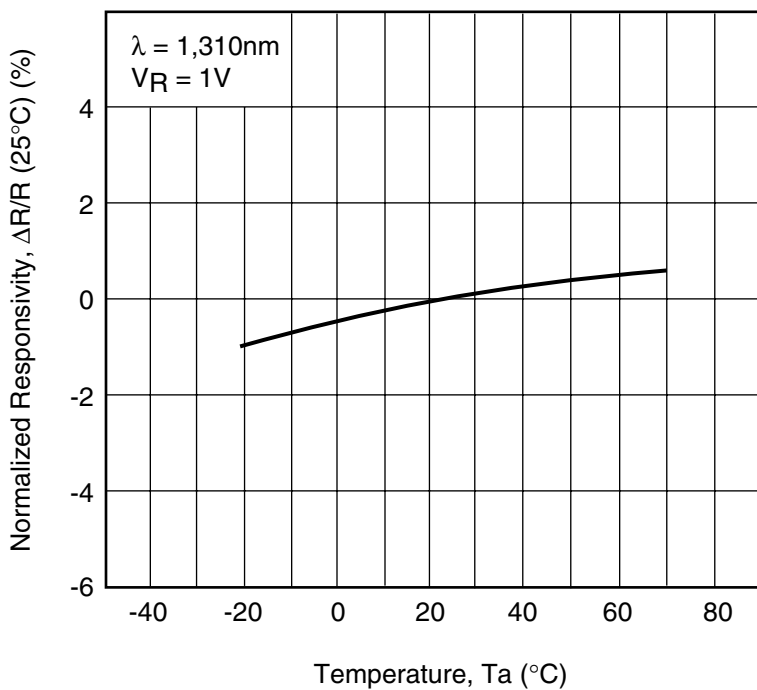
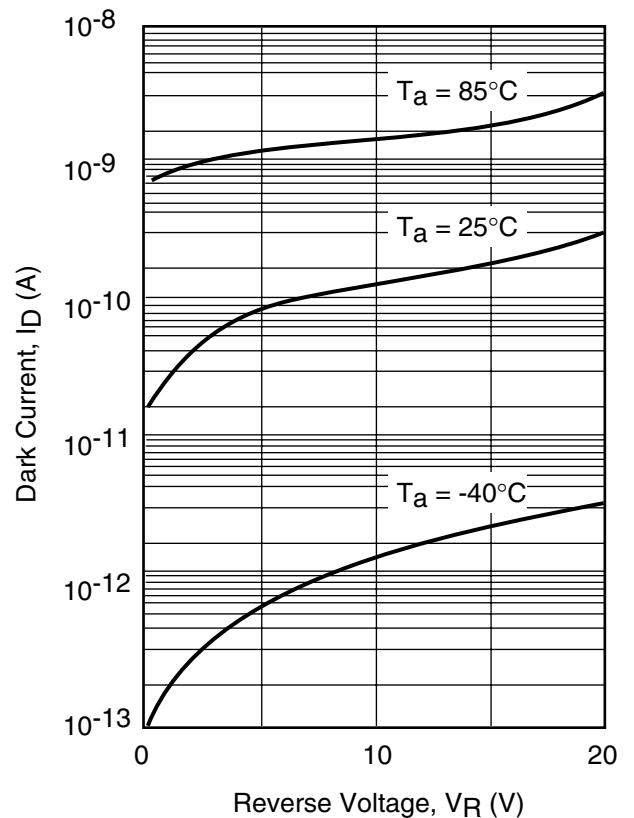
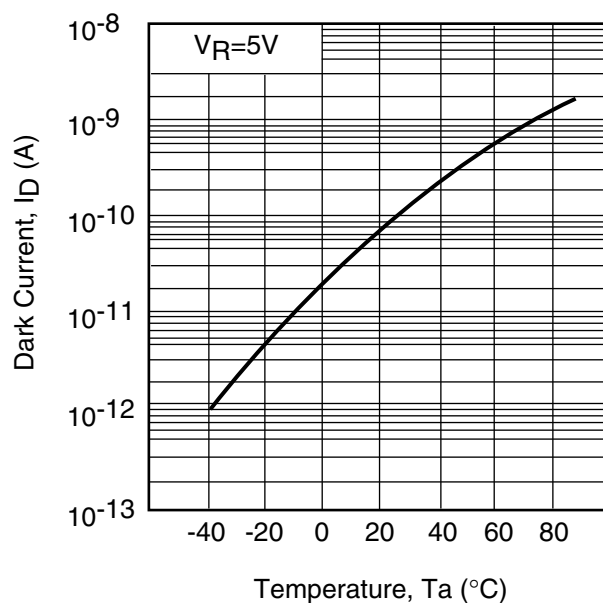


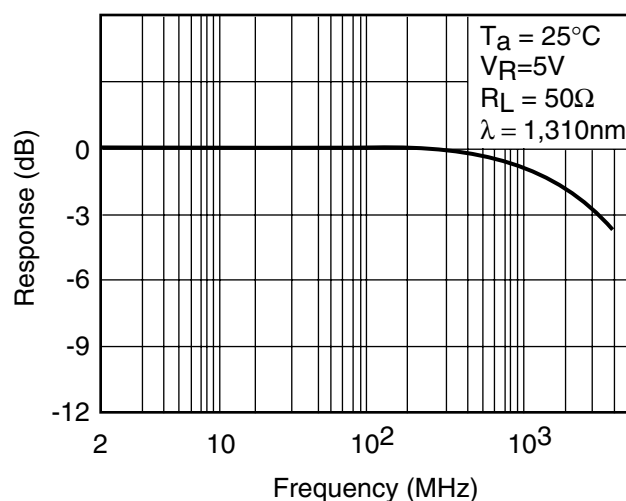
Fig. 4 Dark Current vs. Reverse Voltage



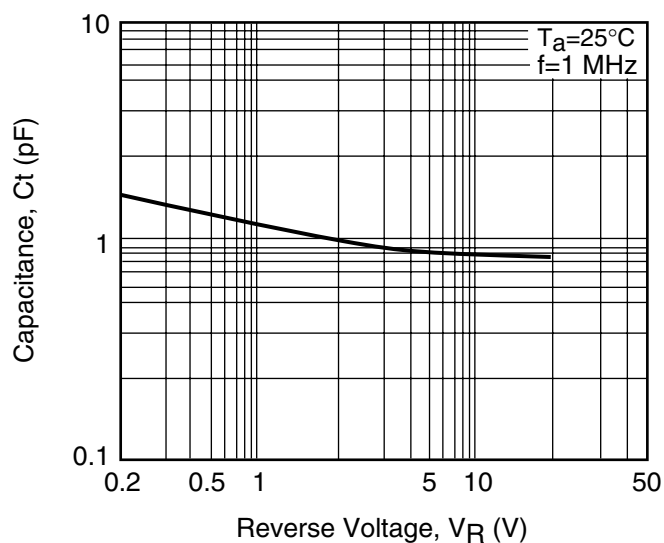
**Fig. 5 Dark Current vs. Temperature**



**Fig. 6 Frequency Response**



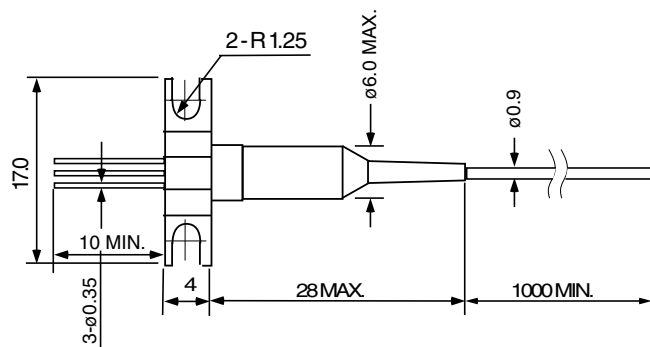
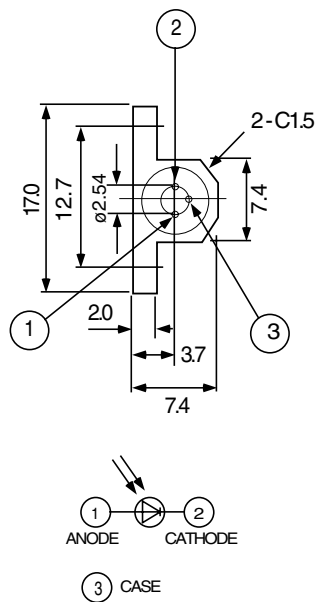
**Fig. 7 Capacitance vs. Reverse Voltage**



# PIN Photodiode ————— FID3Z2KX/LX

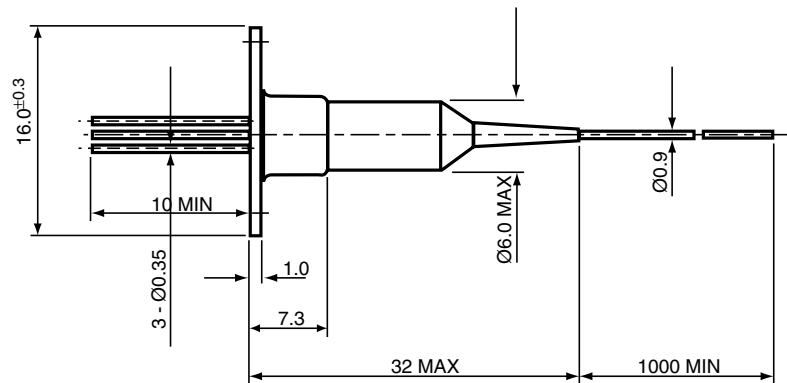
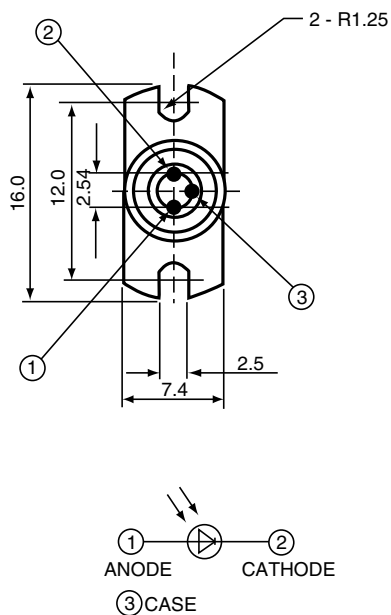
**“KX” PACKAGE**

UNIT: mm



**“LX” PACKAGE**

UNIT: mm



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