

FEATURES

- Hermetically Sealed Package with a single mode fiber pigtail
- High Responsivity: 0.85 A/W
- Low Dark Current: 0.1 nA
- Low Distortion: < -75dBc
- High Optical Return Loss: > 40dB
- High Frequency Response: 2.0GHz

APPLICATIONS

- Analog Transmission Systems
- AM and FM CATV systems

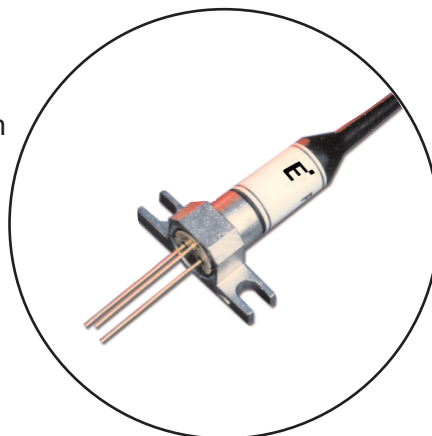
DESCRIPTION

The FID3S1HX/KX are PIN photodiode modules with a single mode fiber pigtail specifically designed for multichannel analog transmission systems. The photodiode uses a planar structure to achieve low dark current, high responsivity and high reliability. The coupling optics in the package is designed for very low optical reflection. The package is hermetically sealed.

HX



KX



ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-40 to +85	°C
Operating Case Temperature	T _{op}	-40 to +80	°C
Forward Current	I _F	5	mA
Reverse Current	I _R	3	mA
Reverse Voltage	V _R	20	V

OPTICAL & ELECTRICAL CHARACTERISTICS (T_a=25°C, λ=1300 and 1500nm)

Parameter	Symbol	Limits		Unit	Conditions
		Min.	Max.		
Responsivity	R	0.8	-	A/W	V _R =1V
Dark Current	I _D	-	5	nA	V _R =5V
Cut-off Frequency	f _c	1.5	-	GHz	R _L =50Ω, V _R =5V, -3dB from 500KHz
Capacitance	C _t	-	1.3	pF	f=1MHz, V _R =5V
2nd order intermodulation distortion	IMD2	-	-75	dBc	2 laser, 2 tone, OMD=70% each, P _{in} =-0dBm, V _R =5V (Note 1)
3rd order intermodulation distortion	IMD3	-	-90	dBc	
Optical return loss	ORL	40	-	dB	

(1) Modulation input light signals are from two independent laser sources with a modulation frequency f₁=244 MHz and f₂=250 MHz respectively.

(2) Pigtail fiber: Singlemode fiber, core diameter 10±1μm, cladding diameter 125±2μm, difference of refractive index 0.3%.

(3) V_R = 10V is recommended at P_{in} > 0dBm or f > 1GHz application.

Fig. 1 Temperature Dependence of Responsivity

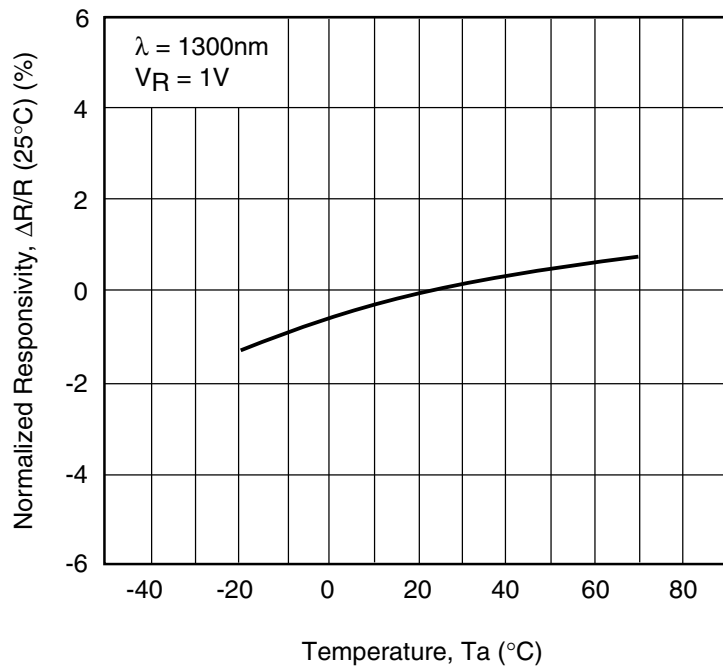


Fig. 2 Dark Current vs. Reverse Voltage

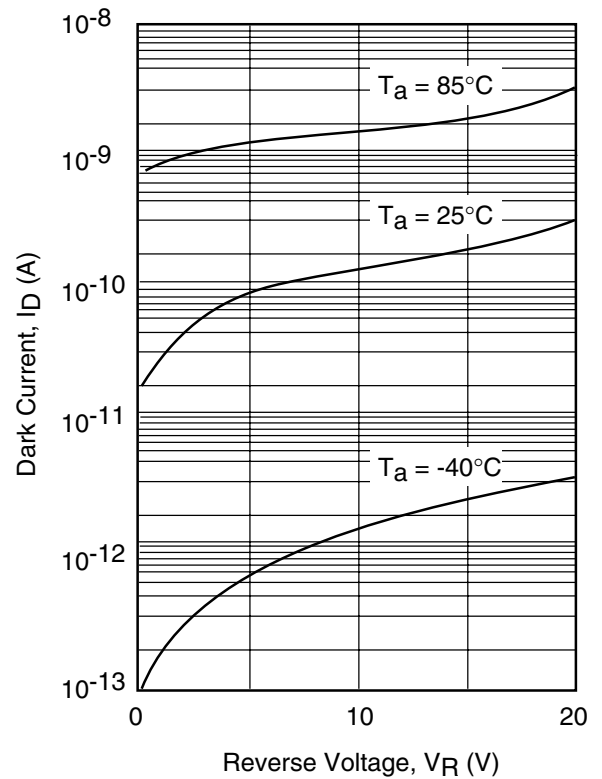


Fig. 3 Capacitance vs. Reverse Voltage

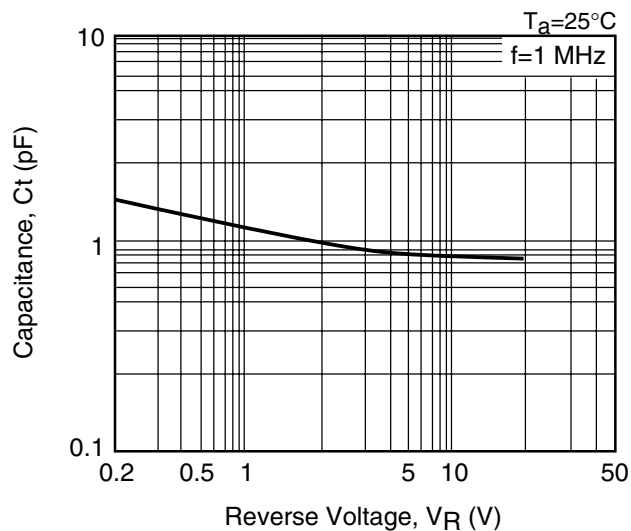
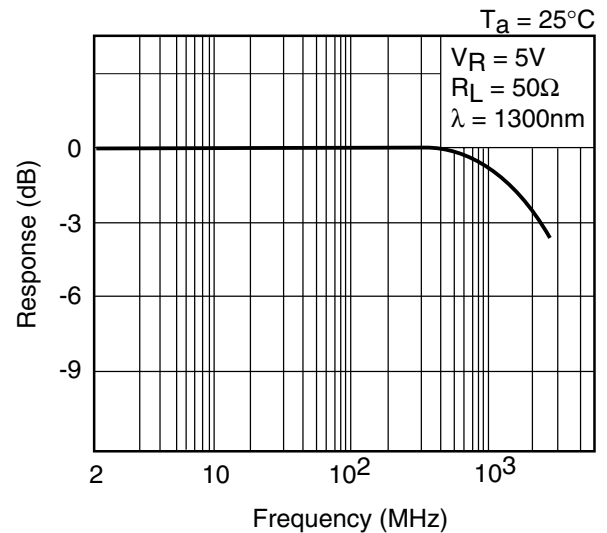


Fig. 4 Frequency Response



**Fig. 5 2nd Order Intermodulation
Distortion Characteristics**

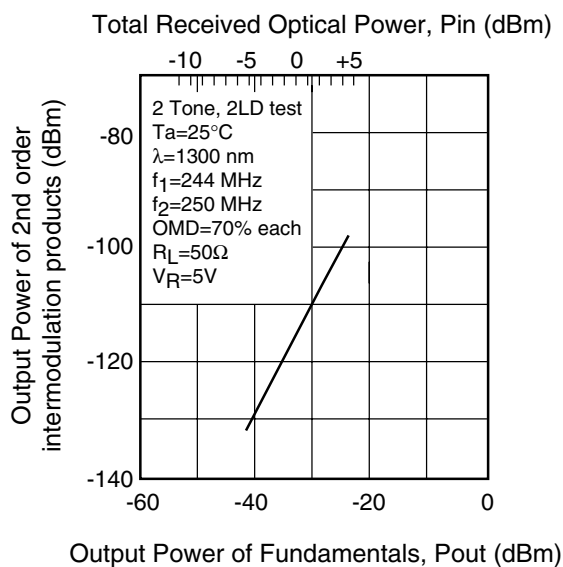
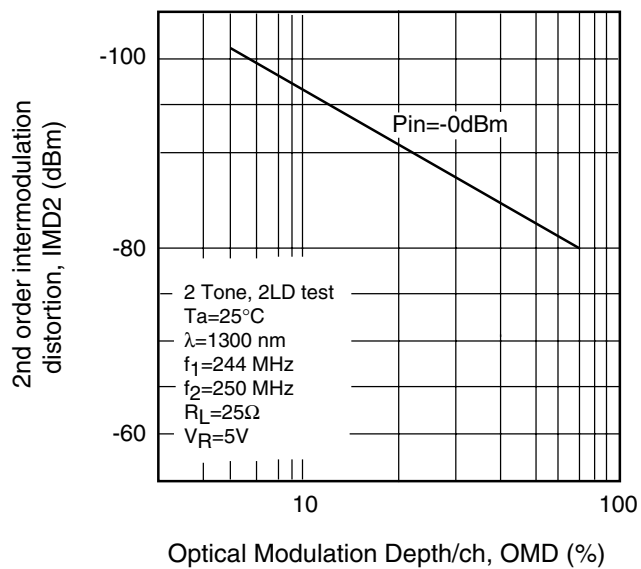
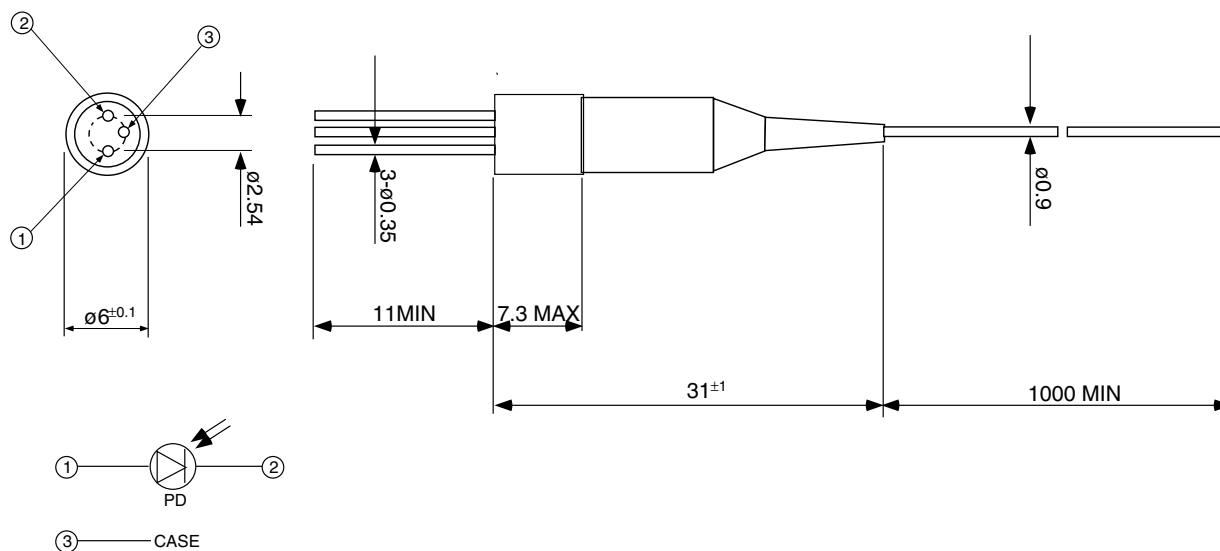


Fig. 6 Frequency Response



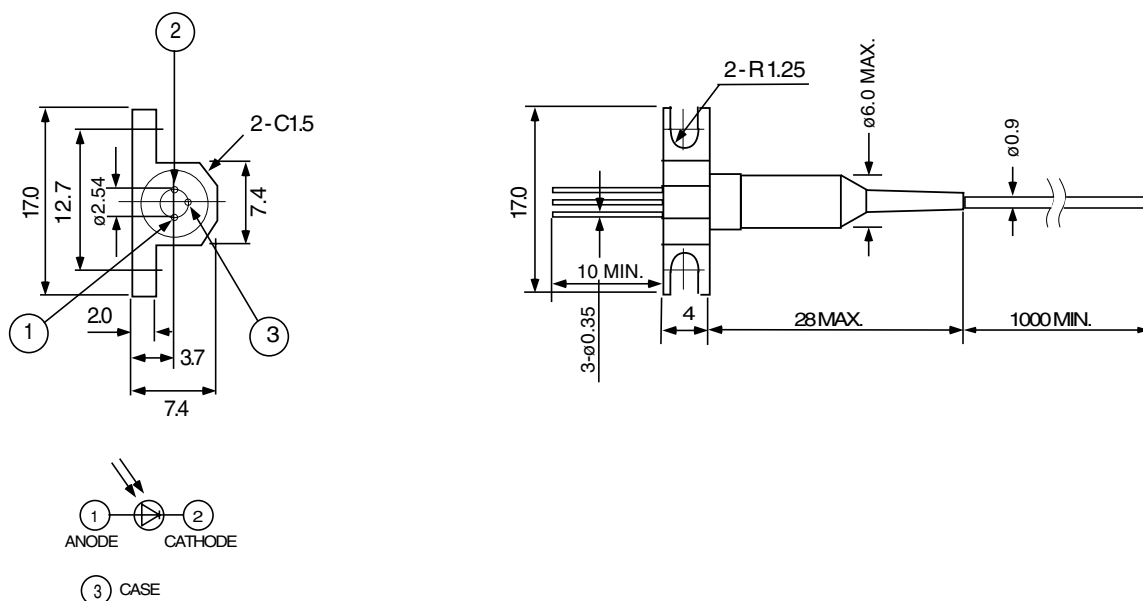
“HX” PACKAGE

UNIT: mm



“KX” PACKAGE

UNIT: mm



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