

## KIP-205-1

### Description

KIP-205-1 is InGaAs PIN Photodiode chip with  $\varnothing 50 \mu\text{m}$  active diameter.

It is recommended for optical data communication with high sensitivity.



### Features

- Front illuminated planar PIN-PD
- Low capacitance and low dark current
- High reliability and environmental endurance
- Wide operating wavelength range from  $1.1 \mu\text{m}$  to  $1.6 \mu\text{m}$

### Applications

- Optical Data Communications for 1.25 / 2.5 / 3.25 Gbps
- Optical power monitoring

### Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Reverse Voltage	$V_R$	20	V
Maximun Optical Power Input	$P_{\text{max}}$	30	mW
Forward Current	$I_F$	10	mA
Operating Temperature	$T_{\text{opr}}$	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg.}}$	-40 ~ +100	$^{\circ}\text{C}$
Die- Attach Temperature *1		300	$^{\circ}\text{C}$

\*1 : Attach Temperature Time  $\leq 60$  seconds max

### Electro-Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Active area( $\varnothing$ )	D		50		$\mu\text{m}$	
Dark Current	$I_D$		0.02	0.2	nA	@ $V_R=5\text{V}$ , $25^{\circ}\text{C}$
Responsivity	S	1.31 $\mu\text{m}$	0.85	0.90	mA/mW	@ $V_R=5\text{V}$ , $25^{\circ}\text{C}$
		1.55 $\mu\text{m}$	0.90	0.95		
3dB Cut off frequency	$f_{h,-3\text{dB}}$	2.5		-	GHz	@ $V_R=5$ , $R_L=50\Omega$
Capacitance	$C_p$		0.5	0.8	pF	@ $V_R=5\text{V}$ , $f=1\text{MHz}$

\* These specifications are subject to change without notice.

### Physical Dimension Properties

Parameter	Symbol	Typ.	Unit
Active area( $\varnothing$ )	D	50	$\mu\text{m}$
Chip Size	-	250x250	$\mu\text{m}^2$
bonding Pad Size ( $\varnothing$ )	-	80	$\mu\text{m}$
Chip Thickness	t	120	$\mu\text{m}$

### Ordering information

KIP	Data Rate	Active area	Carrier type
KODENSHI InGaAs PIN Photodiode Chip	M: Monitoring	05: $\varnothing 50 \mu\text{m}$	1: chips in gel pack
	1: 1.5 Gbps	07: $\varnothing 75 \mu\text{m}$	2: chips on submounter
	2: 2.5 Gbps	25: $\square 250 \text{sq } \mu\text{m}$	
			3: chips on blue tape