

# KOD-1016

### Features

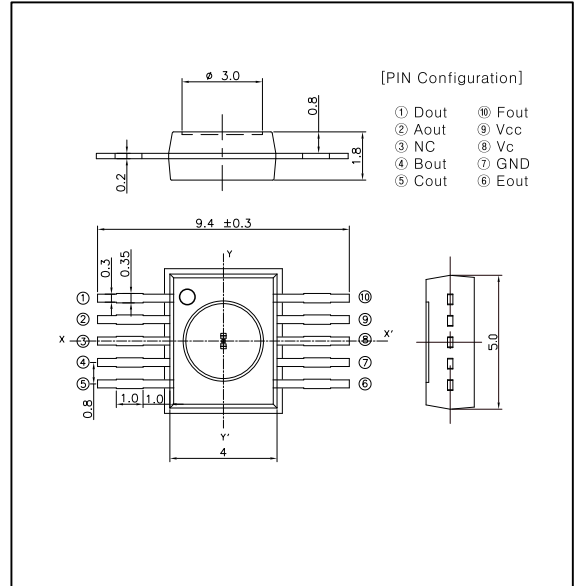
- Full CMOS Seven Channel, Integrated High Speed Photo Diodes and Current to Voltage Transimpedance Amplifiers
- Four High Speed Data Channels (A,B,C,D, 40MHz Min)
- Two Low Speed Tracking Channels (E, F, 1MHz Min)
- High PD Sensitivity Optimized for DVD Applications with Red Laser Diode ( $\lambda=650\text{nm}$ ) and for CD Applications with IR Laser Diodes ( $\lambda=780\text{nm}$ )

### Applications

- Optical Pick-up for DVD Player
- DVD-ROM / CD-ROM Pick-up

### DIMENSIONS

(Unit : mm)



### Absolute Maximum Ratings

[Ta = 25 °C ]

Description	Symbol	Ratings	Condition
Power Supply Voltage	V <sub>cc</sub>	4.75 ~ 5.25 V	( Note 1 )
Output Voltage	V <sub>o</sub>	V <sub>cc</sub> + 0.3 V	V <sub>A</sub> ~V <sub>D</sub>
Storage Temperature	T <sub>stg</sub>	- 40 ~ + 85 °C	V <sub>E1</sub> ~V <sub>F2</sub>

Note 1 : Dark condition. There is no incident light on the photodiodes.

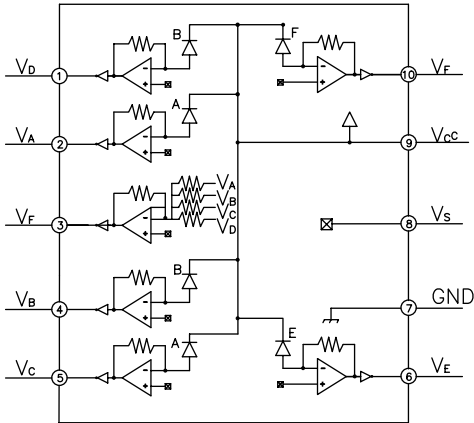
### Electro-Optical Characteristics

[Ta = 25 °C ]

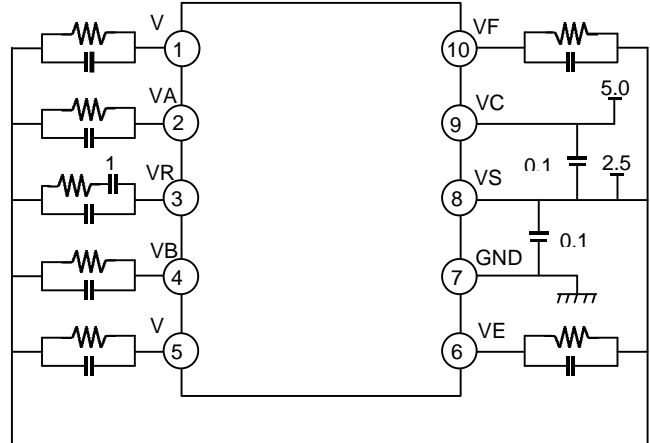
Parameter	Symbol	Characteristics	Condition
Output Offset Voltage	V <sub>off</sub>	±25mV	V <sub>A</sub> ~V <sub>D</sub>
		±15mV	V <sub>E1</sub> ~V <sub>F2</sub>
Output Offset Voltage Difference	ΔV <sub>off</sub>	±20mV	V <sub>a/A</sub> ~V <sub>d/D</sub>
		±15mV	V <sub>E</sub> ~V <sub>F</sub>
Sensitivity	V <sub>o</sub>	MIN 19.8 mV/μW	λ=780nm, V <sub>A</sub> ~ V <sub>D</sub>
		MIN 34.3 mV/μW	λ=780nm, V <sub>E</sub> ~V <sub>F</sub>
		MIN 18.0 mV/μW	λ=650nm, V <sub>A</sub> ~ V <sub>D</sub>
		MIN 31.2 mV/μW	λ=650nm, V <sub>E</sub> ~V <sub>F</sub>
Cutoff Frequency	f <sub>c</sub>	MIN 40 MHz	P <sub>o</sub> = 10 μW , -3dB (A~D)
		MIN 1 MHz	P <sub>o</sub> = 10 μW , -3dB (E~F)
Maximum Output Voltage	V <sub>omax</sub>	MIN 3.8V	P <sub>o</sub> = 100 μW , λ = 780 nm
Output Noise Level	V <sub>n</sub>	TYP -81dBm	f=20MHz, BW=30KHz, V <sub>A</sub> ~V <sub>D</sub>
Operating Temperature Range	T <sub>opr</sub>	-10 ~+70 °C	-

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Block Diagram

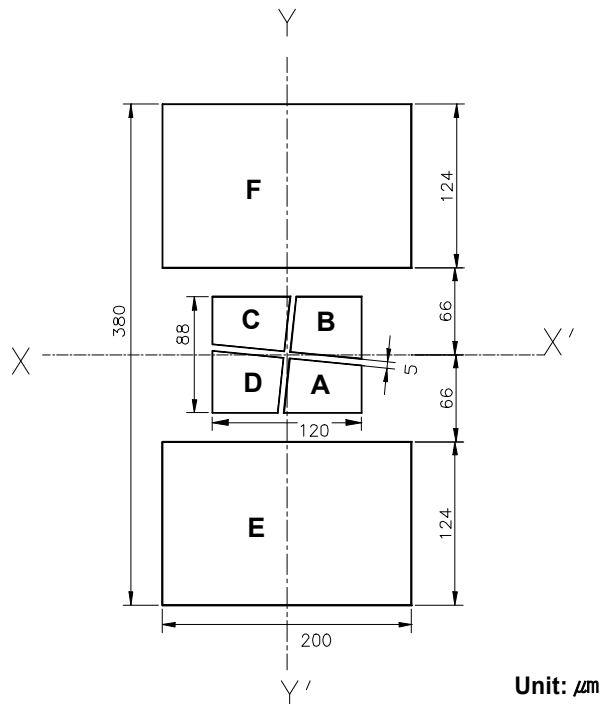


Test Measurement Circuit Diagram



The external loading on all outputs is  $10\text{ k}\Omega/20\text{ pF}$ .  
 The RF output has  $1\mu\text{F}$  capacitor incorporated to removed the DC current.

Detecting Pattern of Photo Diode



Unit:  $\mu\text{m}$