

# KOI-6001A

## Features

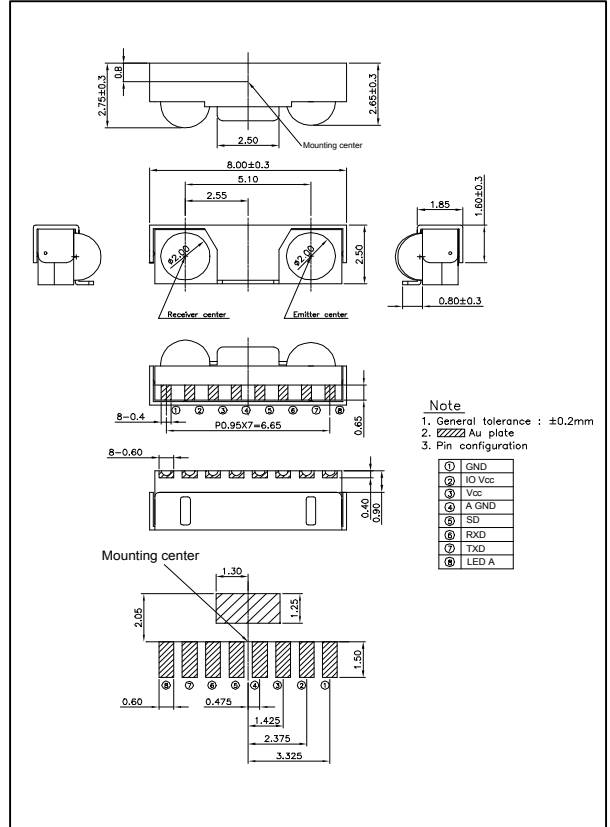
- Compliant to IrDA 1.2 Low power Standard
- Wide Voltage Operation : 2.7 ~ 5.5V
- Compact Package Integrated Transmitter and Receiver (8.0L × 2.65W × 2.5T)
- Complete Power Down mode for the Current Consumption
- LED Stuck-high Protection

## Applications

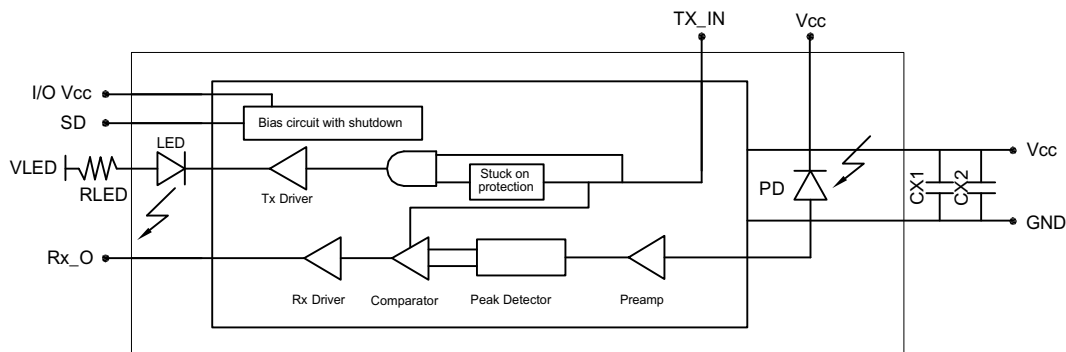
- Cellular Phone
- Personal Computer(Desk-top PC, Lap-top PC)
- Printers, Vending Machine, ATM
- Personal Digital Assistants.(PDA)

## Dimensions

(Unit : mm )



## Block Diagram



RLED 20 Ω ± 0.5%, 0.5 Watt, Vcc=2.7V  
 RLED 30 Ω ± 0.5%, 0.5 Watt, Vcc=3.3V  
 RLED 60 Ω ± 0.5%, 0.5 Watt, Vcc=5V  
 CX1 0.47 μF ± 20%, Ceramic : CX2 4.7 μF ± 20%, Tantalum  
 CX1, CX2 must be placed 7 mm of the KOI-6001A

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## Absolute Maximum Ratings

[Ta = 25°C]

Parameter	Symbol	Conditions	Main.	Max.	Unit
Supply Voltage	V <sub>CC</sub>	-	0	6.5	V
LED Supply Voltage	V <sub>LED</sub>	-	0	6.0	V
Operating Temperature	T <sub>opr.</sub>	-	-20	85	°C
Storage Temperature	T <sub>stg.</sub>	-	-40	100	°C
DC LED Transmit Current	I <sub>LED(DC)</sub>	-	-	50	mA
Peak LED Transmit Current	I <sub>LED(PK)</sub>	<90μs pulse width, <20% duty cycle	-	200	mA
Receiver Data Output Voltage	V <sub>RXD</sub>	-	-0.5	V <sub>CC</sub> +0.5	V
Transmitter Data Input Voltage	V <sub>TXD</sub>	-	-0.5	V <sub>CC</sub> +0.5	V
Data Rate	BR	-	9.6	115.2	Kbps

## Electro-Optical Characteristics

[Ta=25°C, V<sub>CC</sub>=3.3V]

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Supply Current	I <sub>CC1</sub>	Shutdown	-	-	1	μA	
	I <sub>CC2</sub>	Idle	-	100	200	μA	
Transmitter	Transmitter Wakeup Time	T <sub>tw</sub>	-	30	200	μs	
	Viewing Angle	2θ <sub>1/2</sub>	30	-	60	deg.	
	Data Output Pulse Width	T <sub>stp</sub> w	tpw(RxD)=1.63μs at 115.2kb/s	1.6	1.7	1.9	μs
	Rise Time	t <sub>r</sub>	BR=115.2kbps			600	ns
	Fall Time	t <sub>f</sub>		-	-	600	ns
	Peak Emission Wavelength	λ <sub>p</sub>	-	-	875	-	nm
	Spectral Bandwidth	Δλ	-	-	45	-	nm
Receiver	Viewing Angle	2θ <sub>1/2</sub>	30	-	-	deg.	
	Peak Sensitivity Wavelength	λ <sub>p</sub>	-	880	-	nm	
	High Level Output Voltage	V <sub>OH</sub>	I <sub>OH</sub> =-20μA	V <sub>CC</sub> -0.2	-	-	V
	Low Level Output Voltage	V <sub>OL</sub>	I <sub>OL</sub> =1mA	-	-	0.4	V
	Rx SIR Pulse Width	T <sub>sr</sub> pw	tpw(RxD)=1.63μs at 115.2kb/s	1	-	4	μs
	Rise Time	t <sub>r</sub>	BR=115.2kbps	-	-	600	ns
	Fall Time	t <sub>f</sub>		-	-	600	ns
	Communication Distance	D		20	-	-	cm
	Receiver Latency Time	TL		-	-	100	μs
Receiver Wakeup Time	T <sub>rw</sub>		-	150	-	μs	