

# KOI-6004A

### Features

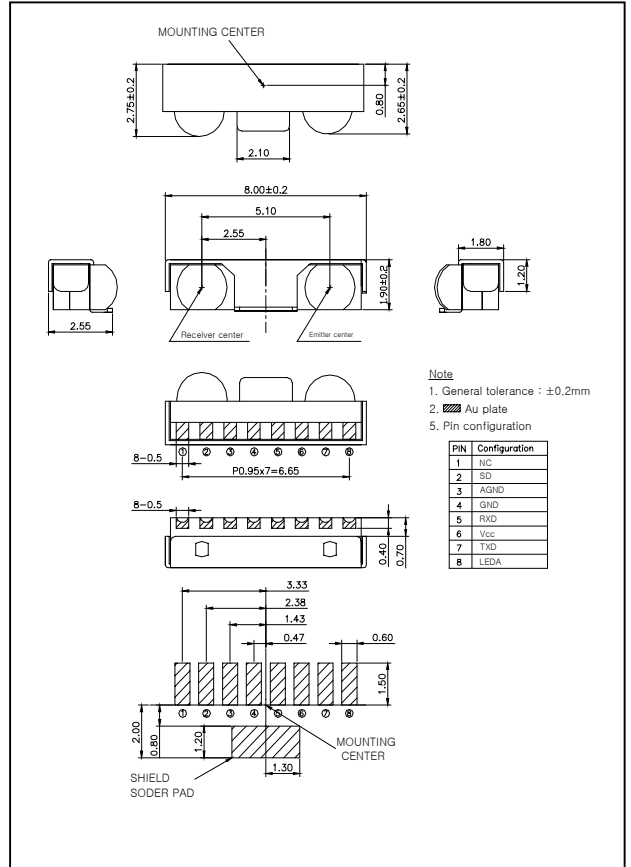
- Compliant to IrDA 1.2 Low power Standard
- Wide Voltage Operation : 2.7 ~ 5.5V
- Compact Package Integrated Transmitter and Receiver (8.0L x 2.75W x 1.9T)
- Complete Power Down mode for the Current Consumption
- Shielded Package for Preventing EMI
- LED Stuck-high Protection
- Lead-free & High reliability package

### Applications

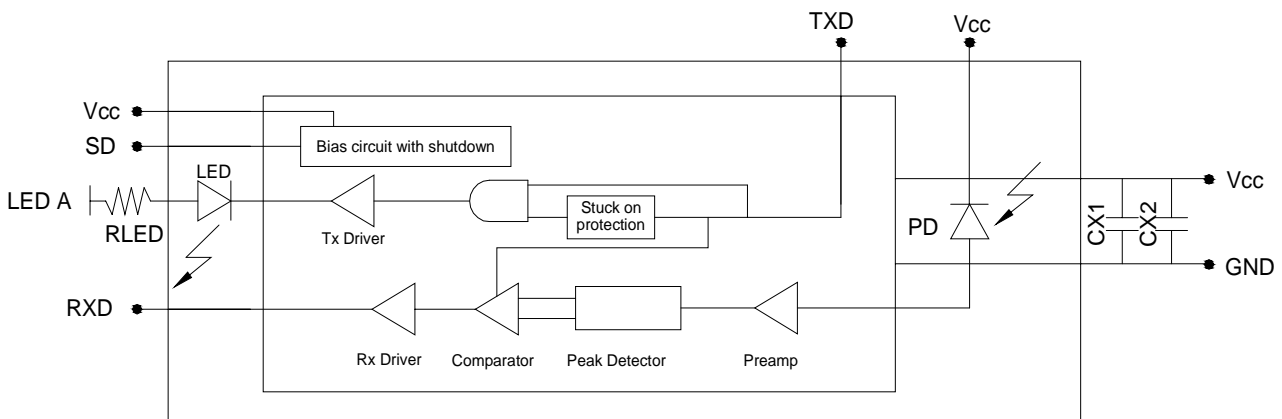
- Cellular Phone
- Personal Computer(Desk-top PC, Lap-top PC)
- Printers, Vending Machine, ATM
- Personal Digital Assistants.(PDA)

### Dimensions

(Unit : mm)



### Block Diagram



RLED  $6.8\Omega \pm 5\%$ , 0.25 Watt, LED A=2.7V  
 RLED  $10\Omega \pm 5\%$ , 0.25 Watt, LED A=3.0V  
 RLED  $12\Omega \pm 5\%$ , 0.25 Watt, LED A=3.6V  
 RLED  $16\Omega \pm 5\%$ , 0.25 Watt, LED A=4.2V  
 CX1  $0.47\mu\text{F} \pm 20\%$ , Ceramic : CX2  $4.7\mu\text{F} \pm 20\%$ , Tantalum  
 CX1, CX2 must be placed 7mm of the KOI-6004A

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## Absolute Maximum Ratings

[Ta = 25°C]

Parameter	Symbol	Conditions	Min.	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	Topr.	-	-20	85	°C
Storage Temperature	Tstg.	-	-40	100	°C
DC LED Transmit Current	I <sub>LED</sub> (DC)	-	-	50	mA
Peak LED Transmit Current	I <sub>LED</sub> (PK)	<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	kbit/s

## 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 115.2kbit/s	1.6	1.7	1.9	µs
	Rise Time	t <sub>r</sub>	BR=115.2kbit/s	-	20	600	ns
	Fall Time	t <sub>f</sub>		-	20	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>spr</sub> w	tpw(RxD)=1.63µs at 115.2kbit/s	1	2.2	4	µs
	Rise Time	t <sub>r</sub>	BR=115.2kbit/s	-	80	600	ns
	Fall Time	t <sub>f</sub>		-	40	600	ns
	Communication Distance	D		20	100	-	cm
	Receiver Latency Time	TL	-	-	100	150	µs
Receiver Wakeup Time	T <sub>rw</sub>	-	-	150	200	µs	