

# KOI-6001A

**Features**

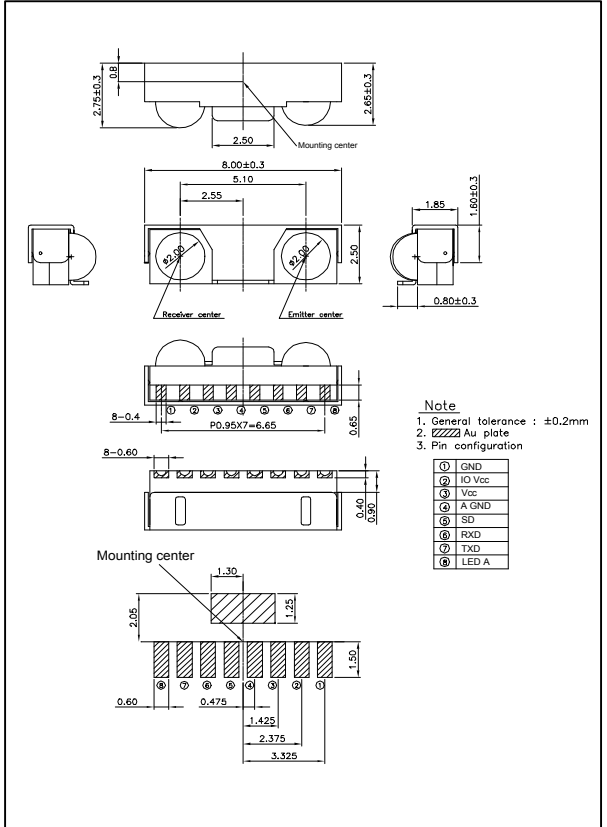
- Compliant to IrDA 1.2 Low power Standard
- Wide Voltage Operation : 2.7 ~ 5.5V
- Compact Package Integrated Transmitter and Receiver (8.0L × 2.65W × 2.5T)
- Complete Power Down mode for the Current Consumption
- LED Stuck-high Protection

**Applications**

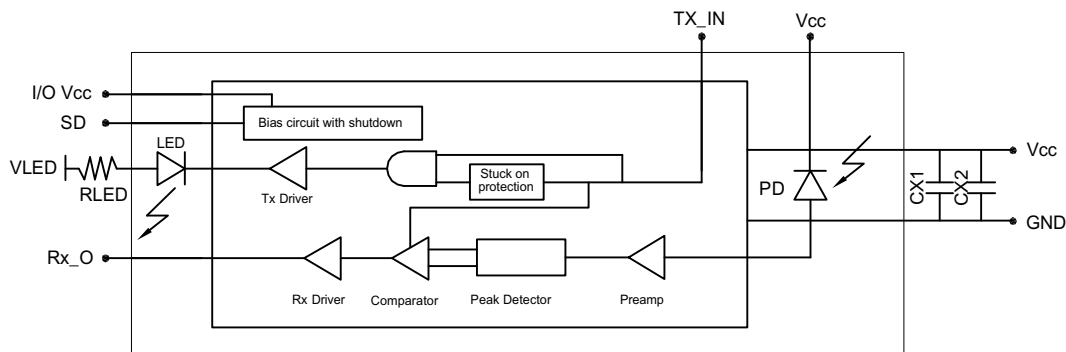
- Cellular Phone
- Personal Computer(Desk-top PC, Lap-top PC)
- Printers, Vending Machine, ATM
- Personal Digital Assistants.(PDA)

**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,<br><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   |    |