

KOI-6102B

Features

► Infrared Data Features

- Small footprint surface mount package
- No shield case : 1.60 H x 2.70 W x 7.00 L
- Operating Voltage(Vcc) from 2.4 V to 3.6 V
- Low Shutdown current below 4nA (typ.)
- Built-in " stuck at one" LED Protection
- Typical link distance up to 1m
- Lead-free & High reliability package

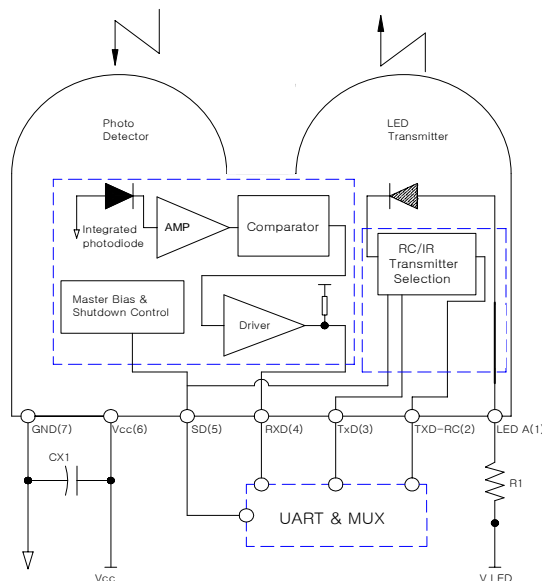
► Remote Control Features

- Wide beam angle and high radiant intensity for remote control
- Typical link distance up to 8m

Applications

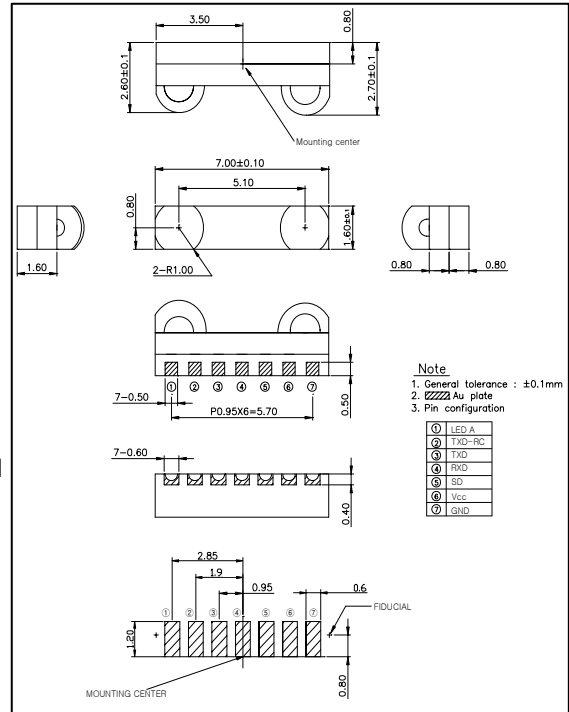
- Cellular Phones(both CDMA & GSM based)
- PDAs, PDA Phones, Smart Phones
- POS Terminals(ex. IrFM dongles)
- Tablet, Notebook, Desktop PCs
- Portable Printers(for photos of Camera Phones), Inkjet & Laser Printers
- Digital Cameras
- KIOSKs, Vending Machines, ATMs
- Handheld devices for remote control function

■ Block Diagram



Dimensions

(Unit : mm)



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Absolute Maximum Ratings

[Ta = 25°C]

| Parameter | Symbol | Conditions | Min. | Max. | Unit |
|---------------------------------|-----------------------|--|------|----------------------|------|
| Supply Voltage | V _{CC} | - | 0 | 7.0 | V |
| LED Supply Voltage | V _{LED} | - | 0 | 7.0 | V |
| Operating Temperature | T _{opr.} | - | -25 | 85 | °C |
| Storage Temperature | T _{stg.} | - | -40 | 100 | °C |
| DC LED Transmit Current | I _{LED} (DC) | V _{LED} =V _{CC} = 3.0V | - | 50 | mA |
| Peak LED Transmit Current | I _{LED} (PK) | <90µs pulse width, <20% duty cycle | - | 250 | mA |
| DC LED Transmit Current (IrRC) | I _{LED} (DC) | V _{LED} =V _{CC} = 3.0V | - | 75 | mA |
| Peak LED Transmit Current | I _{LED} (PK) | Remote Control Mode | - | 400 | mA |
| Receiver Data Output Voltage | V _{RXD} | - | -0.5 | V _{CC} +0.5 | V |
| Transmitter Data Input Voltage | V _{TXD} | - | -0.5 | V _{CC} +0.5 | V |

Electro-Optical Characteristics

[Ta=25 °C , V_{CC}=3.3V]

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit | |
|-----------------------|-------------------------------|--------------------|--------------------------------|---------------------|------|---------------------|-------|
| Supply Current | I _{CC1} | Shutdown | - | 0.001 | 0.5 | µA | |
| | I _{CC2} | Idle | - | 140 | 200 | µA | |
| | I _{CC3} | Active Receiver | - | 170 | 800 | µA | |
| Transmitter | TXD Hold Time | T _h | - | 25.0 | - | ns | |
| | TXD Setup Time | T _s | - | 25.0 | - | ns | |
| | TXD Pulse Width | T _w | - | 25.0 | - | ns | |
| | Shutdown Pulse Width | T _{sd} | - | 25.0 | - | ns | |
| | TXD Wakeup Time | T _{tw} | - | - | 15.0 | 20 | µs |
| | Viewing Angle | 2Θ _{1/2} | - | 30 | - | 60 | deg. |
| | Data Output Pulse Width | T _{stp} w | tpw(TXD)=1.63µs at 115.2kbit/s | 1.5 | 1.9 | 2.0 | µs |
| | Rise Time | tr | tpw(TXD)=1.63µs at 115.2kbit/s | - | 50 | 100 | ns |
| | Fall Time | tf | | - | 100 | 150 | ns |
| | Radiant Intensity (IrDA Mode) | IE1 | R1 = 4.7Ω | 5 | 8 | - | mW/sr |
| | Radiant Intensity (RC Mode) | IE2 | R1 = 4.7Ω | - | 12 | - | mW/sr |
| | Peak Emission Wavelength | λ _P | - | - | 875 | - | nm |
| | Spectral Bandwidth | Δλ | - | - | 45 | - | nm |
| Receiver | Viewing Angle | 2Θ _{1/2} | - | 30 | - | 60 | deg. |
| | Peak Sensitivity Wavelength | λ _P | - | - | 880 | - | nm |
| | High Level Output Voltage | V _{OH} | I _{OH} =-200 µA | 2/3 V _{IO} | - | V _{CC} | V |
| | Low Level Output Voltage | V _{OL} | I _{OL} =200 µA | - | - | 1/3 V _{IO} | V |
| | Rx SIR Pulse Width | T _{sr} pw | tpw(TxD)=1.63µs at 115.2kbit/s | 1.4 | 2.2 | 4.0 | µs |
| | Rise Time | tr | tpw(TXD)=1.63µs at 115.2kbit/s | - | 50 | 100 | ns |
| | Fall Time | tf | | - | 50 | 100 | ns |
| | Communication Distance (SIR) | D | - | 0.3 | 0.6 | - | m |
| Receiver Latency Time | TL | - | - | 60 | 200 | µs | |
| Receiver Wakeup Time | T _{rw} | - | - | 50 | 100 | µs | |