

# KOI-6002ASD

## Features

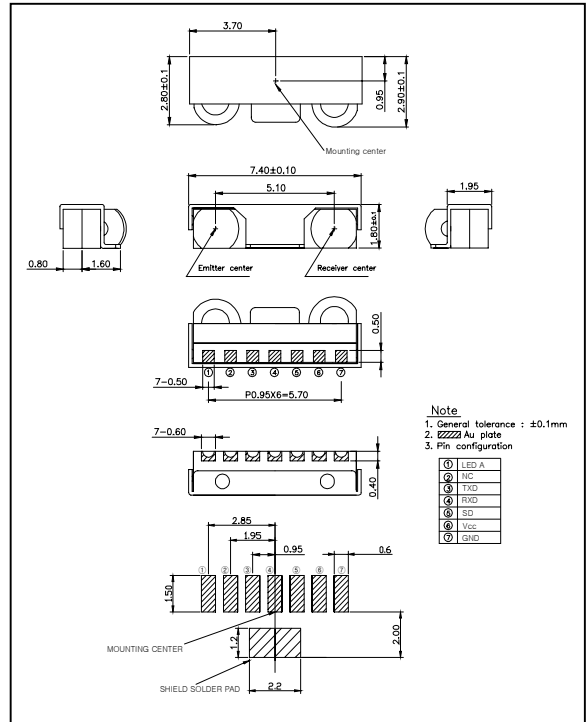
- Small footprint surface mount package(1.8 H x 2.90 W x 7.40 L)
- Operating Voltage(Vcc) from 2.7 V to 5.5 V
- Operating Temperature from -20 °C to 85 °C
- LED Stuck High Protection
- Complete Shut-down at TxD, RxD, PIN diode

## Applications

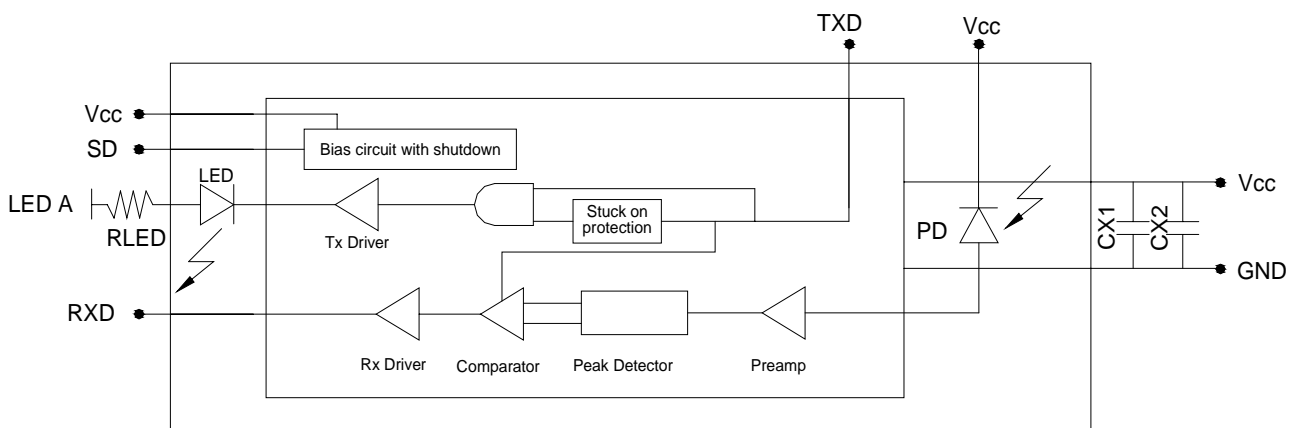
- Cellular Phones(both CDMA & GSM based)
- PDAs, PDA Phones, Smart Phones
- POS Terminals(ex. IrFM dongles)
- Tablet, Notebook, Desktop PCs
- Portable Printers(for photos of Camera Phones), Inkjet & Laser Printers
- Digital Cameras
- KIOSKs, Vending Machines, ATMs

## Dimensions

(Unit : mm)



## Block Diagram



RLED  $3.3\Omega \pm 5\%$ , 0.25 Watt, LED A=2.7V  
 RLED  $4.7\Omega \pm 5\%$ , 0.25 Watt, LED A=3.0V  
 RLED  $6.8\Omega \pm 5\%$ , 0.25 Watt, LED A=3.6V  
 RLED  $10\Omega \pm 5\%$ , 0.25 Watt, LED A=4.2V  
 CX1  $0.47\mu F \pm 20\%$ , Ceramic : CX2  $4.7\mu F \pm 20\%$ , Tantalum  
 CX1, CX2 must be placed 7mm of the KOI-6002ASD

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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	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

## Electro-Optical Characteristics

[Ta=25 °C , V<sub>CC</sub>=3.0V]

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Supply Current	I <sub>cc1</sub>	Shutdown	-	-	1	µA	
	I <sub>cc2</sub>	Idle	-	140	200	µA	
	I <sub>cc3</sub>	Active Receiver	-	180	800	µA	
	I <sub>cc4</sub>	Active Transmitter	-	12.5	15	mA	
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>stpw</sub>	tpw(RxD)=1.63µs at 115.2kbit/s	1.5	1.7	1.9	µs
	Rise Time	t <sub>r</sub>	tpw(TxD)=1.63µs at 115.2kbit/s	-	50	100	ns
	Fall Time	t <sub>f</sub>		-	100	150	ns
	Peak Emission Wavelength	λ <sub>p</sub>	-	-	875	-	nm
	Spectral Bandwidth	Δλ	-	-	45	-	nm
Receiver	Viewing Angle	2θ <sub>1/2</sub>	-	30	60	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>srpw</sub>	tpw(TxD)=1.63µs at 115.2kbit/s	1	2.6	4	µs
	Rise Time	t <sub>r</sub>	tpw(TxD)=1.63µs at 115.2kbit/s	-	50	100	ns
	Fall Time	t <sub>f</sub>		-	50	100	ns
	Communication Distance	D		0.3	0.6	-	m
	Receiver Latency Time	TL		-	60	200	µs
Receiver Wakeup Time	T <sub>rw</sub>		-	50	100	µs	