

IR Transceiver Module



KOI-6001A

Features

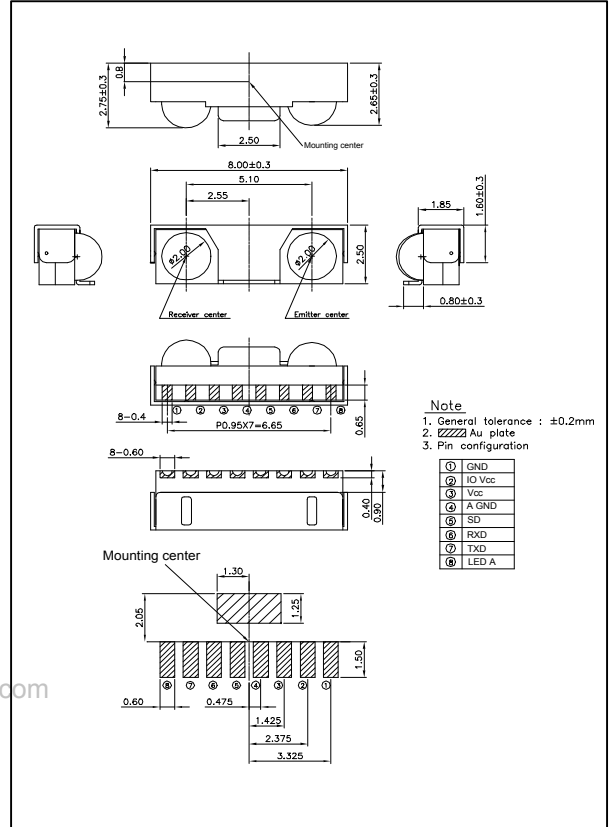
- Compliant to IrDA 1.2 Low power Standard
- Wide Voltage Operation : 2.7 ~ 5.5V
- Compact Package Integrated Transmitter and Receiver (8.0L × 2.65W × 2.5T)
- Complete Power Down mode for the Current Consumption
- LED Stuck-high Protection

Applications

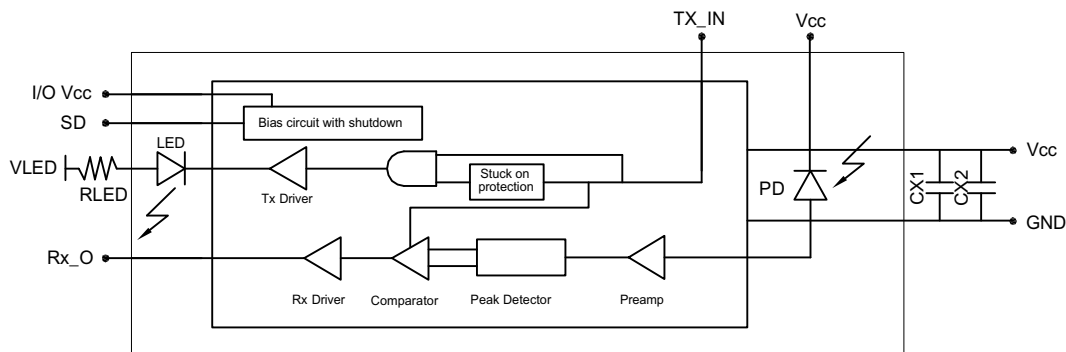
- Cellular Phone
- Personal Computer(Desk-top PC, Lap-top PC)
- Printers, Vending Machine, ATM
- Personal Digital Assistants.(PDA)

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 _{CC}	-	0	6.5	V
LED Supply Voltage	V _{LED}	-	0	6.0	V
Operating Temperature	T _{opr.}	-	-20	85	°C
Storage Temperature	T _{stg.}	-	-40	100	°C
DC LED Transmit Current	I _{LED(DC)}	-	-	50	mA
Peak LED Transmit Current	I _{LED(PK)}	<90μs pulse width, <20% duty cycle	-	200	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
Data Rate	BR	-	9.6	115.2	Kbps

Electro-Optical Characteristics

[Ta=25°C, V_{CC}=3.3V]

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