

Microminiature Remote Control IrDA Transceiver

Description

The KOI-6102B is a Small form package Infrared Transceiver Module and it's Ideal for various Kinds of Wireless Mobile Communication such as Cellular Phones, PDAs.

Fully compliant to IrDA 1.4(Low Power) Physical Layer Specifications and it supports the Data Rate from 9.6kbps to 115.2kbps with the extended link Distance of 1.0 meter by adjusting the RLED value. KOI-6102B also has Remote Control Function built-in and typical Link Distance up to 8.0 meters.



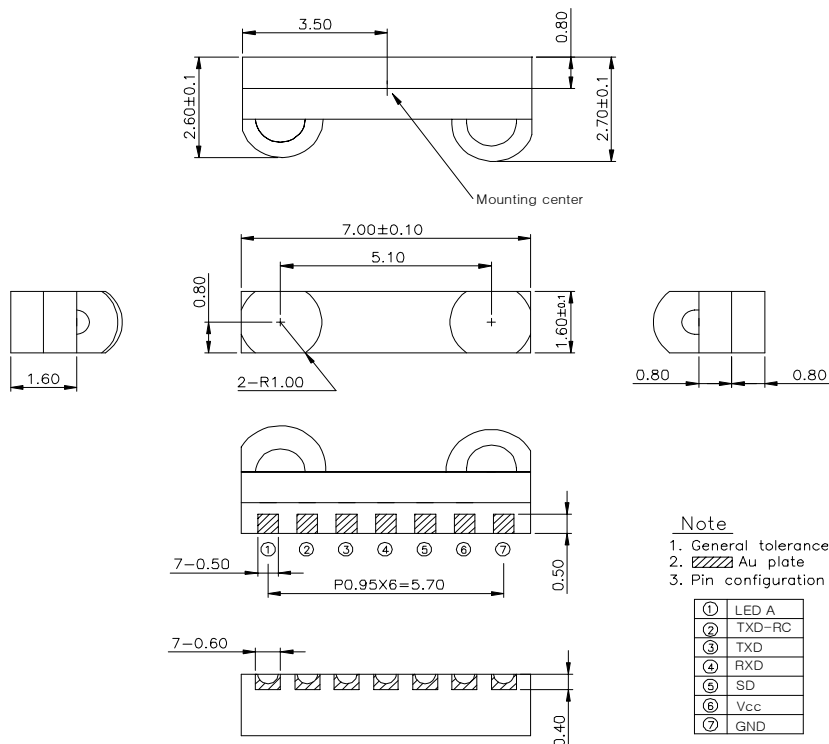
Features

- Small footprint surface mount package
- Low Shutdown current below 4nA
- Lead-free & High reliability package
- RoHS Compliance

Application

- Cellular Phones(both CDMA & GSM based)
- PDAs, PDA Phones, Smart Phones
- Tablet, Notebook, Desktop PCs
- Portable Printers(for photos of Camera Phones), Inkjet & Laser Printers

Outline Dimensions



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 (IrDA)	I _{LED} (DC)	V _{LED} =V _{cc} = 3.0V		50	mA
Peak LED Transmit Current	I _{LED} (PK)	<90µs pulse width, <20% duty	-	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

[V_{cc}=3V, Ta= 25 °C]

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	T _{XD} Hold Time	T _h	-	25.0	-	ns	
	T _{XD} Setup Time	T _s	-	25.0	-	ns	
	T _{XD} Pulse Width	T _w	-	25.0	-	ns	
	Shutdown Pulse Width	T _{sd}	-	25.0	-	ns	
	T _{XD} Wakeup Time	T _{tw}	-	-	15.0	20	µs
	Viewing Angle	2θ _{1/2}	-	30	-	60	deg.
	Data Output Pulse Width	T _{stpw}	tpw(TXD)=1.63µs at 115.2kbit/s	1.5	1.9	2.0	µs
	Rise Time	t _r	tpw(TXD)=1.63µs at 115.2kbit/s	-	50	100	ns
	Fall Time	t _f	tpw(TXD)=1.63µs at 115.2kbit/s	-	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	-	865	875	900	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} =-200µA	2/3 V _{IO}	-	V _{cc}	V
	Low Level Output Voltage	V _{OL}	I _{OL} =200µA	-	-	1/3 V _{IO}	V
	Rx SIR Pulse Width	T _{sirpw}	tpw(TXD)=1.63µs at 115.2kbit/s	1.4	2.2	4.0	µs
	Rise Time	t _r	tpw(TXD)=1.63µs at 115.2kbit/s	-	50	100	ns
	Fall Time	t _f	tpw(TXD)=1.63µs at 115.2kbit/s	-	50	100	ns
	Communication Distance (SIR)	D		0.3	0.6	-	M
	Viewing Angle	2θ _{1/2}	-	30	-	60	deg.
	Receiver Latency Time	TL		-	60	200	µs
	Receiver Wakeup Time	T _{rw}		-	50	100	µs