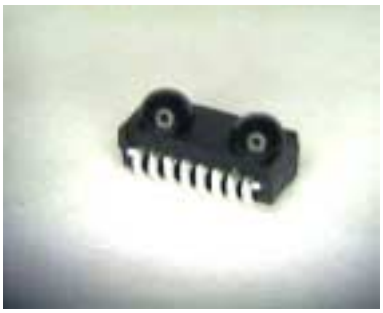
Infrared IrDA Transceiver Module UTS-413T

Feature Highlights



- IrDA1.1, HP-SIR, and Sharp ASK compliant
- Support IrDA data rates form 9.6Kbps to 4Mbps
- Minimal external components
- User programmable ambient light rejection filters
- High performance
  -minimum detectable photocurrent of 250nA @4Mbps, 100nA @≦115Kbps
  - analog latency turn around time <100uS (typical)
- Single +2.7V to +5V supply
- Low power consumption <1 uA in shutdown mode
- Wavelength : 870 nm

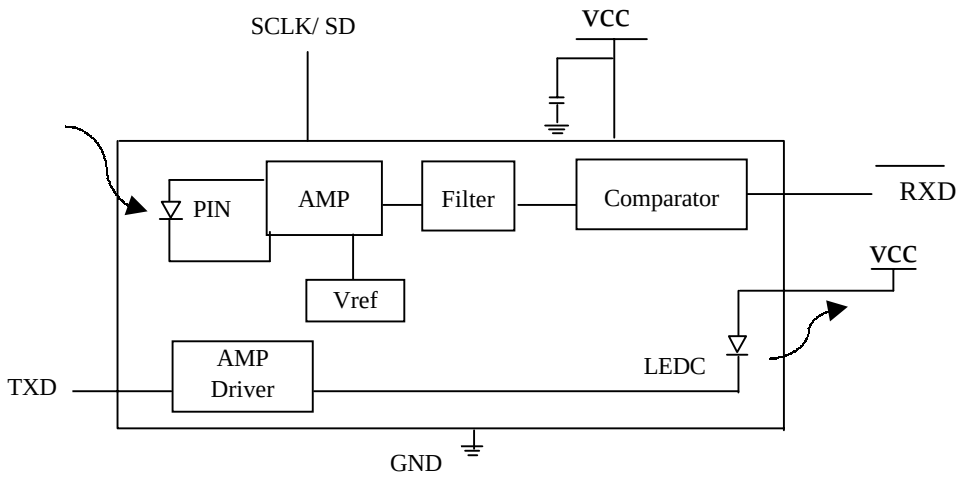
Applications

- Notebook and Subnotebook Computers
- Desktop PCs、Printers 、PDAs
- Telecommunication Products (Cellular Phones、Pagers)
- External Infrared Adapters (Dongles)
- Digital Still and Video Cameras
- Photo Imaging Printers

Description

The UTS-413T is a low cost, low power, multi-mode infrared transceiver module in a ultra slimline form factor ideally suited for portable wireless data communications and connectivity applications. The device consists of an infrared emitting diode (IRED), a photodiode (PIN), and a low power control IC integrated into a single package. Only a few external components are required to fully implement the module .

Block Diagram

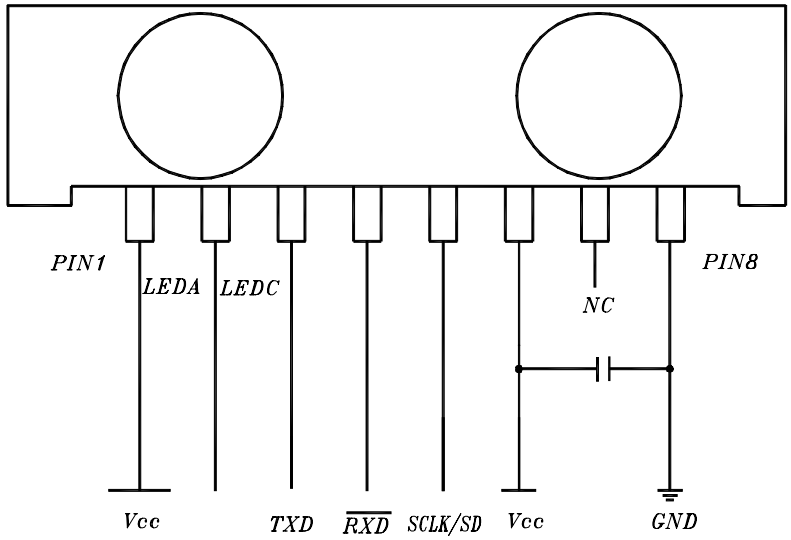


I/O Pins Configuration Table

Pin	Description	Symbol
1	LED Anode	LEDA
2	LED Cathode	LEDC
3	Transmitter Data Input	TXD
4	Receiver Data Output	$\overline{\text{RXD}}$
5	Shutdown Mode	SCLK/SD
6	Supply Voltage	Vcc
7	No Connection	NC
8	Ground	GND

Application Circuit：

Front View



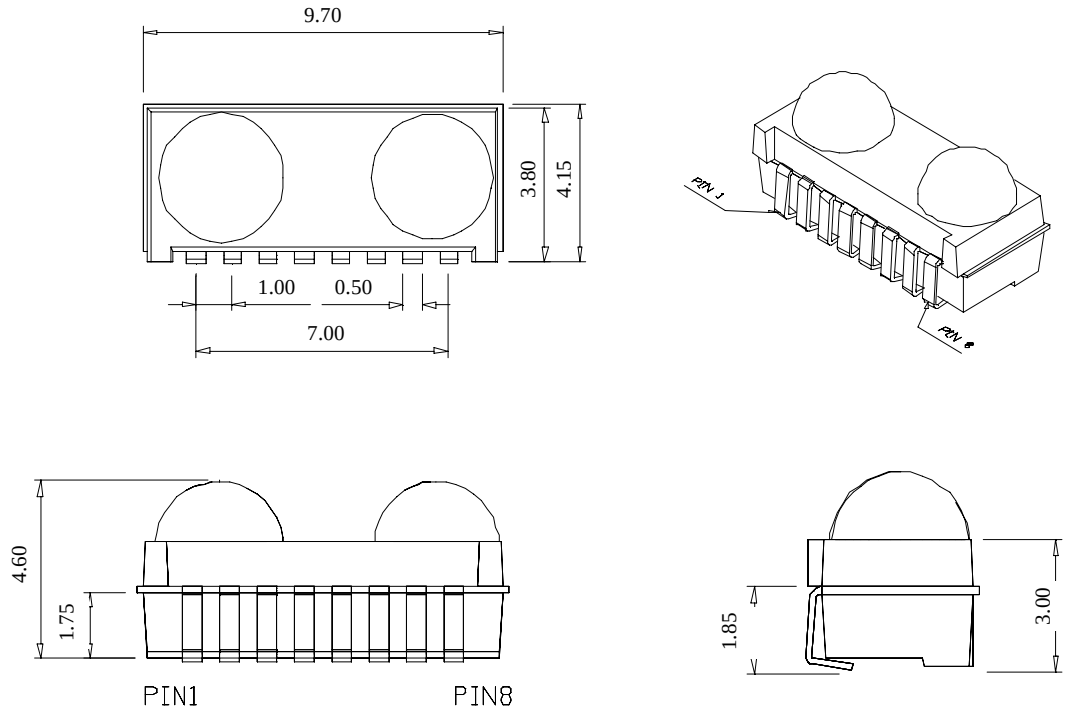
Recommended Application Circuit Components

1. Vcc (PIN 6) Connect a 1.0 ~ 10μF capacitor to ground as close as possible to this pin.
2. R_{LEDA} R_{LEDA} is an optional resistor for current limiting in series with PIN 1.

Recommended R_{LEDA} values :

V_{LEDA}(V)	2.7	3.0	3.5	4.0	5.0
R_{LEDA}(Ω)	0	0	1.0	2.7	5.1

Package Outline With Dimensions



PIN OUT

1	LEDA
2	LEDC
3	TXD
4	$\overline{\text{RXD}}$
5	SLCK/SD
6	Vcc
7	NC
8	GND

NOTE: 1.All dimensions in milimeter.

2.Package dimensions tolerance ± 0.2mm unless otherwise noted.

Absolute Maximum Ratings

Paramater	Symbol	Min.	Max.	Unit	Conditions
Storage Temperature	Ts	-25	85	℃	
Operating Temperature	TA	-25	80	℃	
Lead Solder Temperature	TJ		260	℃	
Repetitive Pulsed LED Current	$I_{LED\ (RP)}$		650	mA	≦90 μs Pulse Width ≦25% Duty Cycle
Peak LED Current	$I_{LED\ (PK)}$		1000	mA	≦2 μs Pulse Width ≦25% Duty Cycle
Supply Voltage	Vcc	-0.5	5.5	V	
Voltage at any pins	Vmax		Vcc +0.3	V	

Recommended Operating Conditions

Paramater	Symbol	Min.	TYP.	Max.	Conditions
Operating Temperature	TA	-20 ℃		75 ℃	
Supply Voltage	Vcc	3.0 V		5.0 V	

Electrical and Optical Characteristics

Paramater	Symbol	Min.	TYP.	Max.	Conditions
Receiver Data Logic High	V_{RXDH}	Vcc×0.8 V			Into CMOS Load
Receiver Data Logic Low	V_{RXDL}			0.2 V	Into CMOS Load
Transmitter Data Logic High	V_{TXDH}	Vcc×0.6 V			Into CMOS Load
Transmitter Data Logic Low	V_{TXDL}			Vcc×0.4V	Into CMOS Load
Supply Current	Is		13 mA	18 mA	Receiver Mode
Shutdown Current	IPD		0.1 μA	1 μA	SCLK/SD=1
Average Transmit LED Driver Current	ITD			160 mA	≦90 μs Pulse Width ≦25% Duty Cycle
Radiant IRED Peak Wavelength	λp		870 nm		If=20mA
Radiant IRED Wavelength Spectral Line Half Width	$\Delta\lambda_{1/2}$		50 nm		If=20mA
Radiant IRED Viewing Angle	$2\theta_{1/2}$	30 degrees			
Receiver PIN Viewing Angle	$2\theta_{1/2}$	30 degrees			