

Structure Silicon Monolithic Integrated Circuit  
 Product IrDA SIR Encoder / Decoder  
 Type BU92001KN  
 Dimensions diagram : Figure-2  
 Block diagram : Figure-3  
 Function IrDA Controller

1. UART interface
2. IrDA SIR Encode / Decode function
3. Communication rate of 2.4k ~ 115.2kbps
4.  $V_{DD}=2.5 \sim 3.5V$  ( Power supply voltage range)

note) The IC isn't designed for endurance of the radiation.

**Absolute maximum ratings (Ta=25°C)**

Parameter	Symbol	Limits	Units
Supply Voltage	Vmax	4.5 *1	V
Input Voltage	Vin	-0.3 ~ VDD+0.3	V
Operation Temperature	Topr	-25 ~ 85	
Storage Temperature	Tstg	-40 ~ 100	

\*1) This applies to all pins basis ground pin(9pin).

**Recommended Operating Conditions**

Parameter	Symbol	Min.	Typ.	Max	Units
Supply Voltage	VDD	2.5	3.0	3.5	V
Clock frequency	fCLK	24.0	27.8	30.0	MHz

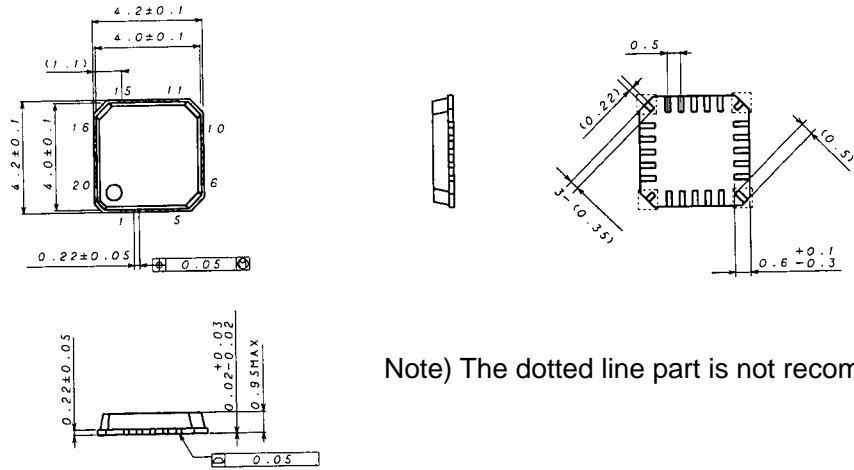
**Status of this document**

The Japanese version of this document is the formal specification.  
 A customer may use this translation version only for a reference to help reading the formal version.  
 If there are any differences in translation version of this document, formal version takes priority.

• Electrical characteristics (Ta=25°C, VDD=3.0V, GND=0V)

Parameter	Symbol	MIN	TYP	MAX	Units	Condition
Consumption Current1	IDD1	-	0.1	3.0	uA	All the input 0V, Output load-less
Consumption Current2	IDD2	-	2.0	4.0	mA	Input PIN=0V, CLK=27.8MHz, Output load-less
High level input voltage	VIH	0.8 × VDD	-	-	V	
Low level input voltage	VIL	-	-	0.2 × VDD	V	
High level input current	IIH	-	-	10	uA	
Low level input current	IIL	-	-	10	uA	
High level output voltage	VOH1	VDD-0.6	-	-	V	IOH= - 1mA
Low level output voltage	VOL1	-	-	0.6	V	IOL=1mA

• Dimensions Diagram (VQFN20)



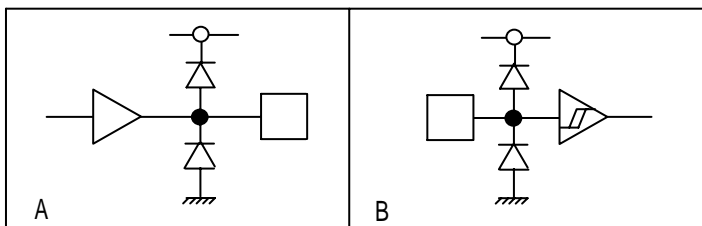
Note) The dotted line part is not recommend mounting.

Fig.1 (Units:mm)

• Pin Descriptions

Pin No.	Terminal Name	I/O	Function	Terminal Equivalent Circuit
1	U_TXD	I	UART TXD signal input	B
2	U_RXD	O	UART TXD signal output	A
3	-	-	N.C	-
4	BRSET	I	Setup of baud rate (active Hi)	B
5	CLK	I	Clock input (27.8MHz)	B
6	-	-	N.C	-
7	CLKSEL0	I	Input clock selection	B
8	CLKSEL1	I	Input clock selection	B
9	GND	-	Ground	-
10	-	-	N.C	-
11	CLK47OUT	O	The 1/47 clock output of the clock input	A
12	CLK2OUT	O	The 1/2 clock output of the clock input	A
13	-	-	N.C	-
14	IR_RXD	I	IrDA RXD signal input	B
15	IR_TXD	O	IrDA TXD signal output	A
16	-	-	N.C	-
17	VDD	-	Power supply voltage (2.5V ~ 3.5V)	-
18	RST	I	Reset input (active Hi)	B
19	-	-	N.C	-
20	-	-	N.C	-

• Terminal equivalent circuit diagram



- Notes for use

- (1) Absolute Maximum Ratings

- We are careful enough for quality control about this IC. So, there is no problem under normal operation, excluding that it exceeds the absolute maximum ratings. However, this IC might be destroyed when the absolute maximum ratings, such as impressed voltages or the operating temperature range, is exceeded, and whether the destruction is short circuit mode or open circuit mode cannot be specified. Please take into consideration the physical countermeasures for safety, such as fusing, if a particular mode that exceeds the absolute maximum rating is assumed.

- (2) GND Potential

- Make setting of the potential of the GND terminal so that it will be maintained at the minimum in any operating state.

- (3) Short circuit mode between terminals and wrong mounting

- In order to mount the IC on a set PCB, pay thorough attention to the direction and offset of the ICs. Erroneous mounting can destroy the IC. Furthermore, if a short circuit occurs due to foreign matters entering between terminals or between the terminal and the power supply or the GND terminal, the IC can destroy

- (4) Operation in supply voltage range

- Functional Circuit operation is guaranteed within operation ambient temperature, as long as it is within operation supply voltage range. The electrical characteristics standard value cannot be guaranteed.

- However, there is no drastic variation in these values, as long as it is within operation supply voltage range.

### Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM CO.,LTD.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.

Thank you for your accessing to ROHM product informations.

More detail product informations and catalogs are available, please contact your nearest sales office.

**ROHM Customer Support System**

**THE AMERICAS / EUROPE / ASIA / JAPAN**

[www.rohm.com](http://www.rohm.com)

Contact us : [webmaster@rohm.co.jp](mailto:webmaster@rohm.co.jp)