

TOIM3000

115 kb/s IrDA Interface Integrated Circuit

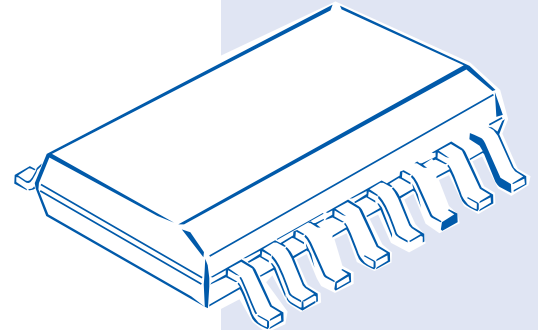
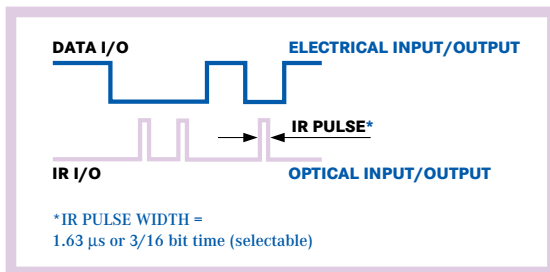
FEATURES

- Interfaces the IrDA transceiver TFDS3000 with a UART (2.4 kb/s to 115.2 kb/s)
- Pulse shaper according to IrDA physical layer
- Transmits either 1.63 μ s or 3/16 bit time pulses
- Receives 1.63 μ s to 3/16 bit time pulses
- Digital filtering of received pulses
- Power supply: 3.0 V to 5.5 V
- SO16L Package

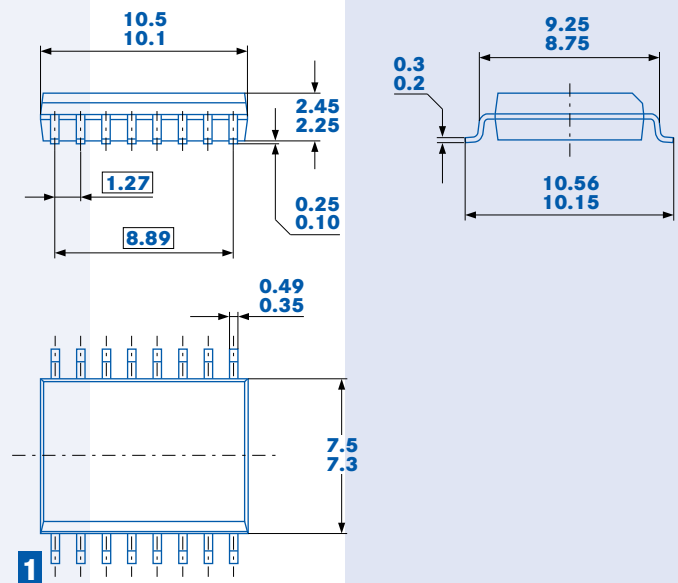
APPLICATIONS

- Personal computer, printer
- Personal digital assistant
- Handy terminal
- Cellular phone, pager

PULSE-SHAPING FUNCTION



DIMENSIONS



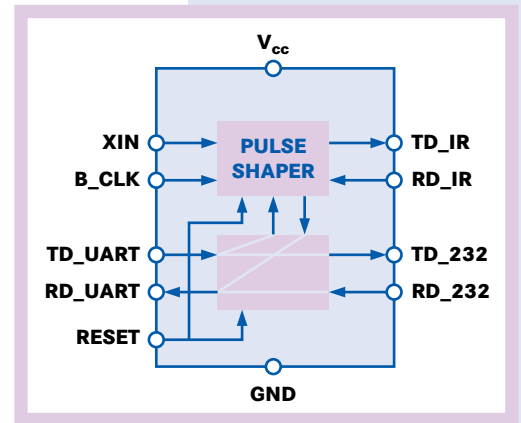
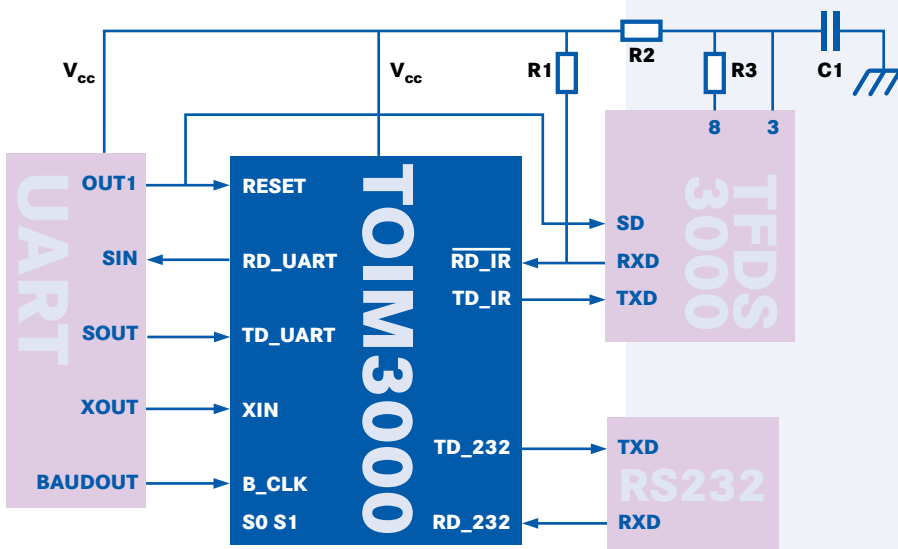
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply voltage	V_{CC}		3.0		5.5	V
Current consumption, dynamic	I_{DD}	$V_{CC}=5\text{ V}, 25^\circ\text{C}$		1.0		mA
standby	I_{SB}				1	μ A
Reset=low						
Inputs Schmitt trigger, positive threshold	V_{T+}	All input pins	1.4			V
negative threshold	V_{T-}				1.1	V
Input HIGH voltage	V_{IH}	All input pins	2.2			V
Input LOW voltage	V_{IL}	All input pins			0.8	V
Input leakage current	I_{IL}	All input pins			5	μ A
Output HIGH voltage	V_{OH}	All output pins	2.4			V
Output LOW voltage	V_{OL}	All output pins			0.4	V
Output current	I_{OUT}	All output pins	4			mA

TYPICAL APPLICATION AND BLOCK DIAGRAM

The application circuit shows a typical example of a UART interface. R1 = 2.2 kΩ (optional), R2 = 100 Ω, R3 = 5Ω, C1 = 6.8 μF (electrolytic) parallel to 0.1 μF (ceramic). C1 should be placed as close to the TOIM3000 as possible. As shown, XIN is the 1.8432 MHz clock input, and the 16 times baud rate clock (BAUDOUT) is fed to B_CLK. Set S1=S0=LOW ("0"). The 1.8432 MHz clock is optional, and is only used to generate the 1.63 μs pulses and to filter out input noise.

If the 1.8432 MHz clock is not readily available, then a single 16 times baud clock can be connected to the XIN input, generating 3/16 bit time pulses. In this case, set S1=V_{CC} and S0=GND, disabling digital filtering. When RESET=0, the TOIM3000 sends the data to, or receives data from the infrared transceiver TFDS3000. If RESET is active, the TOIM3000 handles the normal electrical data exchange with the RS232 port.



PIN ASSIGNMENT

PIN#	PIN NAME	DESCRIPTION	I/O	ACTIVE
1	RESET	Resets all internal registers when "HIGH"	I	High
2	RD_UART	Received data to the UART	O	Low
3	TD_UART	Data from the UART to be transmitted	I	Low
4	B_CLK	16 times baud rate clock, input from the UART	I	
5	XIN	Oscillator input, 1.8432 MHz clock	I	
6	NC	No connection		
7	NC	No connection		
8	GND	Ground		
9	S0	Must be connected to GND	I	
10	S1	Connect to GND if XIN is connected to 1.8432 MHz clock. Otherwise connect this pin to V _{CC}	I	
11	RD_232	Data input from the RS232 port, RXD pin	I	Low
12	TD_232	Data output to the RS232 port, TXD pin	O	Low
13	NC	No connection		
14	TD_IR	Data output to infrared transmitter TFDS3000	O	High
15	RD_IR	Data input from infrared transmitter TFDS3000	I	Low
16	V _{CC}	Supply voltage		

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