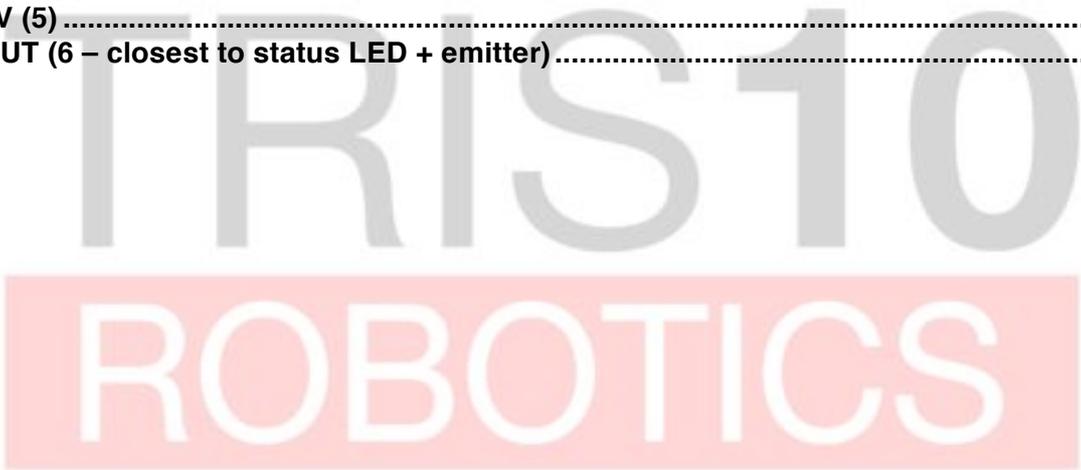


TRIS10

ROBOTICS EmitIR

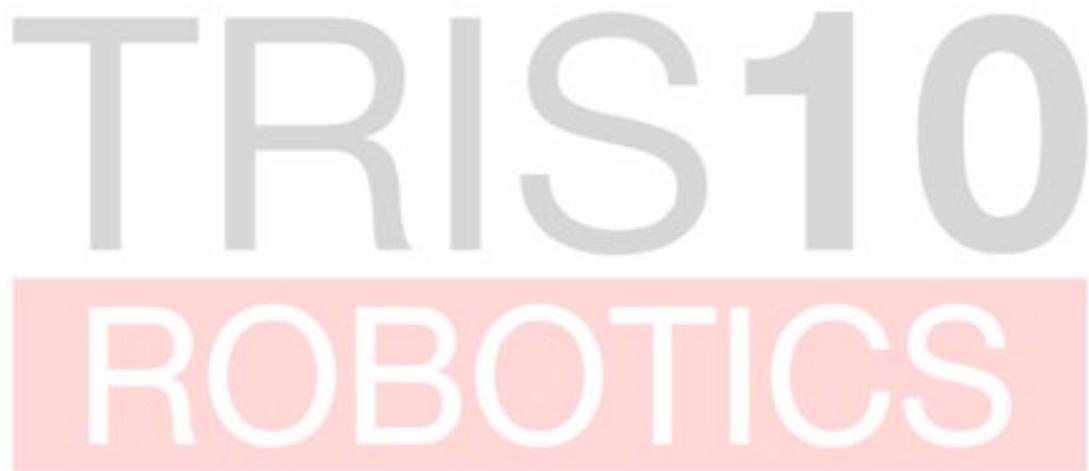
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1.0 Characteristics

Characteristic	Value	Units
Supply Voltage, V_{in}	5	V
Current Consumption (average), I_{avg}	26	mA
Current Consumption (maximum), I_{max}	82	mA
IR Emitter Maximum Power	0.35	W
Length (maximum)	32	mm
Width	23	mm
Height	7	mm
Weight	0.004	kg



2.0 Waveforms

2.2 RCJ Mode (Mode A)

This mode is the default and is the recommended mode for RoboCup Junior. The 40kHz pulse is stepped-down, with 8 pulses at full strength, 4 at 1/4 strength, 4 at 1/16 strength, 4 at 1/64 strength and a 346 μ S space, as shown in Figure 1.

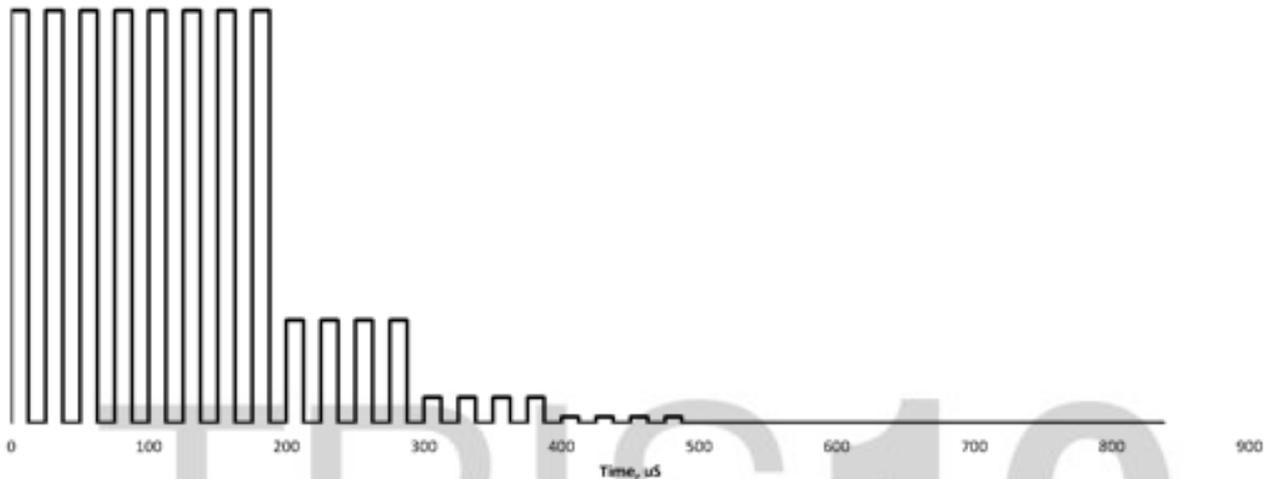


Figure 1: Mode A Waveform

2.2 40kHz Unmodulated

This mode is an unmodulated constant 40kHz square wave, as shown in Figure 2.

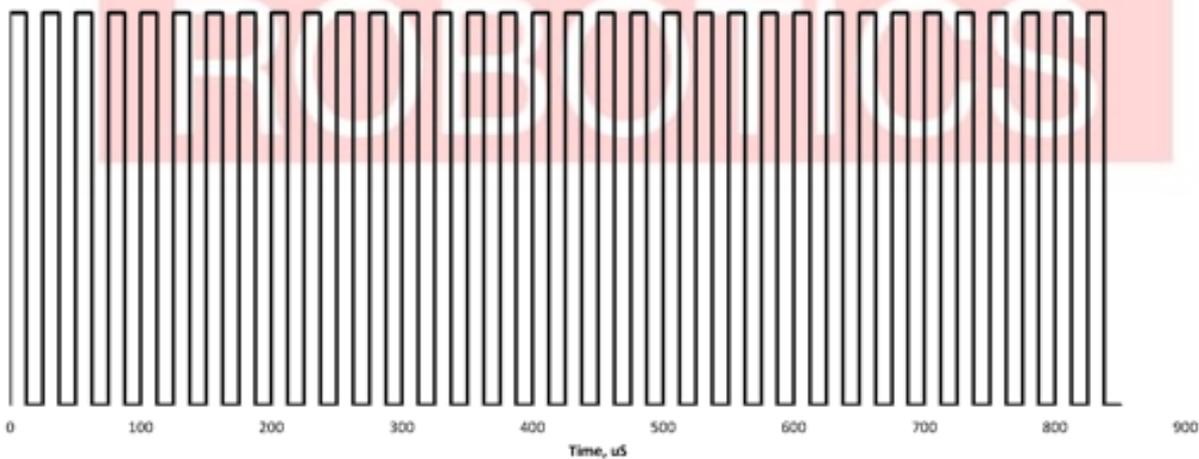


Figure 2: 40kHz unmodulated waveform

3.0 Pin Descriptions

3.1 NC (1 – closest to USB)

This pin is used for internal testing. Do not connect.

3.2 MOD (2)

If this pin is unconnected or connected to 5V, the standard RoboCup Junior mode (Mode A) waveform, including step-down modulation, will be produced.

If this pin is connected to GND, the step-down modulation will not occur. Instead, a constant 40kHz pulse train will be produced, which can be useful for testing.

3.3 NC (3)

If this pin is unconnected or connected to 5V, the standard full-strength waveform set by the MOD pin will be produced.

If this pin is connected to GND, the strength of each pulse will be decreased by 25%, with pulses less than 1/64th strength not emitted. This mode can be used to simulate long-range detection. This will not change the shape of the waveform, so the MOD pin can also be utilised simultaneously.

3.4 GND (4)

If using the USB connector, this pin can be unconnected. If connected while a USB power supply is also connected, this is equivalent to the USB ground pin.

If not supplying USB power, this pin should be connected to ground.

3.5 5V (5)

If using the USB connector, this pin can be unconnected. If connected while a USB power supply is also connected, this is equivalent to the USB 5V pin and up to 120 mA could be drawn from it.

If not supplying USB power, this pin should be connected to a stable 5V supply.

3.6 OUT (6 – closest to status LED + emitter)

This pin will output the waveform currently being emitted. Full-strength signals will be approximately 1.2V.