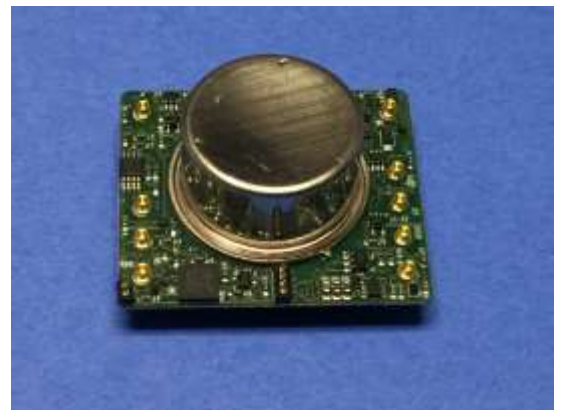


# Ultra-Low Power Disciplined Oscillator DTQ-101 Series

## Feature:

- **Ultra-low power consumption 60mW Typical**
- 1pps input and 1pps output for GPS synchronization
- Discipline to 1ns RMS in phase and  $<10^{-12}$  in frequency
- 1 Second continuous phase measurement and report system, resolution  $\leq 1$ ns
- ToD and lock time since warm up
- User accessible memory, optional
- Holdover  $<1.5$ uSec. 24 hours
- 10MHz, 16.384MHz, HCMOS output
- RS232 digital interface



## Applications:

- Under water sensor and network system
- Telecom
- Low Orbit Satellite
- Oil and Gas exploration
- Smart Power Grid
- Test and measurement equipment
- Battery powered Portable communication systems

## ELECTRICAL SPECIFICATIONS

### 1. RF OUTPUT

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
1.1.	Frequency Output	16.384			MHz	Consult factory for other frequency
1.2.	Amplitude	2.6V CMOS				Consult factory for another waveform
1.3.	Load	10Mohm//10pF				
1.4.	Rise/Fall Time			10	ns	
1.5.	Stability over Temperature			1.0	ppb	Peak to peak, -10°C to 50°C
				1.4	ppb	Peak to peak, -10°C to 70°C
				2.0	ppb	Peak to peak, -40°C to 85°C
1.6.	Allan Deviation	<5E-12 flicker floor				Consult factory for temperature range, stability. Warmup power and warmup time.
1.7.	Acceleration Sensitivity			+/-1	ppb/g	
1.8.	Aging		+/-0.2	+/-0.5	ppb/day	After 30 days
				50	ppb	First year
1.9.	Frequency Control			+/-0.7	ppm	Digital Tuning

### 2. Time Output

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
2.1	1pps	1			Hz	
2.2	Output Amplitude	3.3V CMOS				
2.3	Pulse Width		20		us	
2.4	Rise/Fall Time			10	ns	
2.5	Load	10Mohm//10pF				

### 3. Time Input

	Parameter	Reference Std.	Test Condition
3.1.	1pps	1Hz	
3.2.	Timing Edge	Rising edge	
3.3.	Input Amplitude	3.3V CMOS	
3.4.	Input Impedance	10M ohms	

### 4. Phase Noise (@10MHz)

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
4.1	1 Hz			-95	dBc/Hz	
4.2	10 Hz			-125	dBc/Hz	
4.3	100 Hz			-145	dBc/Hz	
4.4	1 KHz			-155	dBc/Hz	
4.5	10 KHz			-165	dBc/Hz	

## 5. Supply Voltage

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
5.1	Supply Voltage		3.3		Vdc	
5.2	Power Consumption (at 25°C ambient)			< 60	mW	Referring to 25°C, -10°C to 50°C
				< 80	mW	Referring to 25°C, -10°C to 70°C
				< 100	mW	Referring to 25°C, -40°C to 85°C
5.3	Warm up Power			< 550	mW	Factory configurable
5.4	Warm up Time	1		4	Min.	Factory configurable for fast warm up

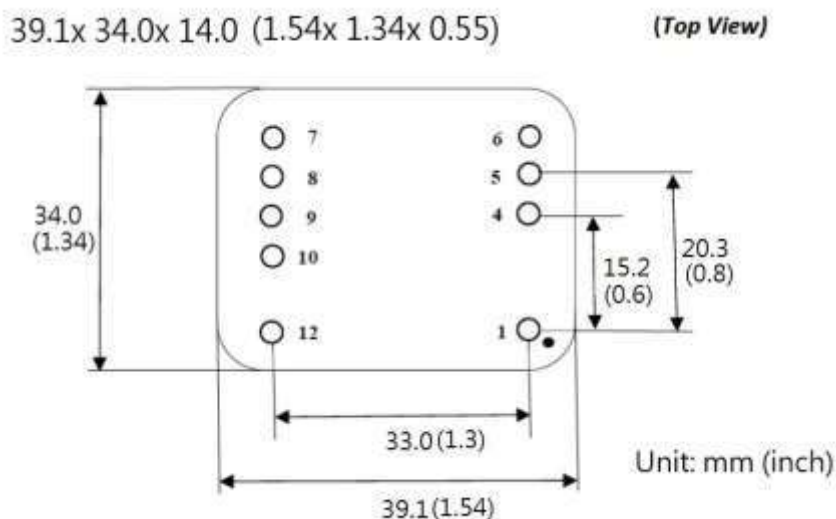
## 6. Digital Communication

	Parameter	Reference Std.	Test Condition
6.1.	Protocol	RS232	
6.2.	Logic Level	3.3V CMOS	
6.3.	Baud rate	57600 bps	

## 7. Environmental

	Parameter	Reference Std.	Test Condition
7.1.	Mechanical Shock	>100G, 11ms	Mil-STD-202
7.2.	Vibration	5G up to 2KHz	Mil-STD-202

## OUTLINE DRAWING



### Pin Functions

Pin	Function	Pin	Function
#1	NC	#8	GND
#4	Oven Ready	#9	1pps input
#5	TX	#10	1pps output
#6	RX	#12	RF output
#7	+3.3V		