

Q050 Ultra-Low Power Oscillator

Key Features

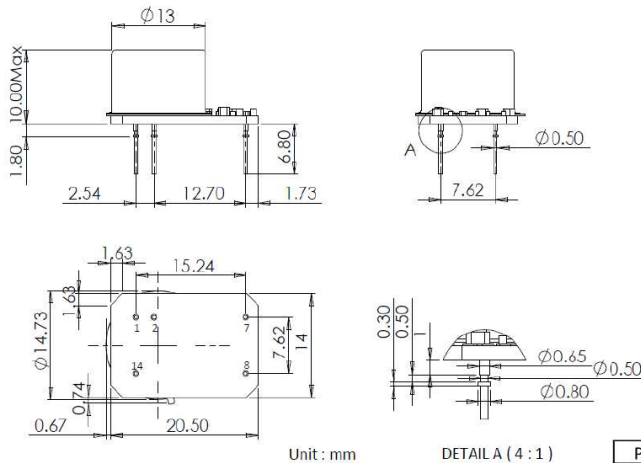
- Ultra-low power consumption <60 mW
- 10 MHz, 16.384 MHz, 100MHz, HCMOS output
- Aging grade, optional
- Low phase noise

Applications

- Under water sensor and network system
- Mining and seismic research
- Oil and gas exploration
- Smart power
- Test and measurement equipment
- Battery powered portable communication systems



Mechanical Specifications, (21.6 X 15.3 mm)



Pin	Function
1	VCON
2	V _{REF}
7	GND
8	Output
14	V _{DD}

Electrical & Environmental Specifications (25 °C, +3.3 VDC input unless otherwise specified)

PARAMETERS	Unit	Min	Typ.	Max	Note	Comments
RF Output						
• Frequency	MHz		10/16.384/ 100		1	
• Amplitude	V		2.6		2	CMOS
• Load	MΩ/10 pf		10			
• R/F Time	ns			10		

Power Input

• DC Input	V	5/3.3	
• Power Consumption	mW	205/150 55	-40 °C to +85 °C, 100/10MHz, 3.3V -10°C to +50C, 16.384MHz, 3.3V
• Warm up Power	mW	1000	<i>Factory configurable</i>
• Warm up Time	second	120	<i>Refer to 25C, 15min of operation ±1x10⁻⁸</i>

Environmental

Operating			-40 °C to +85 °C
• Temperature & Stability	ppb	±10/50 ±10	-40 °C to +85 °C,10/100M -10 °C to +50 °C ,16.384M
• Mechanical Shock			Mil-STD-202, >30 G, 11 ms, half sine
• Vibration			Mil-STD-202, 5 G up to 2 kHz
• Humidity			MIL-STD-202, Method 103, condition A
• Storage temperature	C		-40 °C to +90 °C

Stability

• Acceleration Sensitivity	/g	±1x10 ⁻⁹	Worst direction,100M	
• Aging (after 30days)	/day	± 5x10 ⁻⁹ ± 2x10 ⁻¹⁰ ± 5x10 ⁻¹⁰	±5x10 ⁻⁷ /first year,100M 10M 16.384M	
• Frequency Control	Ppm	±1	±2	0-2.8V , positive slope
• Frequency vs Supply	Ppb		2.8	±0.1V,3.3V
• Frequency vs load	Ppb	5		5% change
• Reference Voltage	V			

Phase Noise

•	dBc/Hz		
	10Hz	-120/-90	10M/100MHz/3.3V
	100Hz	-145/-120	
	1kHz	-155/-150	
	10kHz	-165/-165	
	100kHz	-165/-165	
	1MHz	-165/-165	

**Consulting factory for better Phase noise requirements*

Order Information

Q050	F	58	G	3	H	-100M	1	Temperature Range	2	Temperature Stability
	1	2	3	4	5		code	Specification	code	specification
							A	0 to 50C	XY	±Xe-Y
							B	-10 to 60C	59	±5e-9
							code	0 to 70C	18	±1e-8
							D	-20 to 70C	28	±2e-8
							E	-30 to 70C	38	±3e-8
							F	-40 to 85C	58	±5e-8

3 Aging per day		4 Supply	
code	specification,ppb	code	specification
A	0.1	3	3.3V
B	0.2	5	5V
code	0.5		
D	1	5 Output	
E	2	code	specification
F	3	H	HCMOS
G	5	S	sine wave