Q50 Ultra-Low Power Oscillator

Key Features

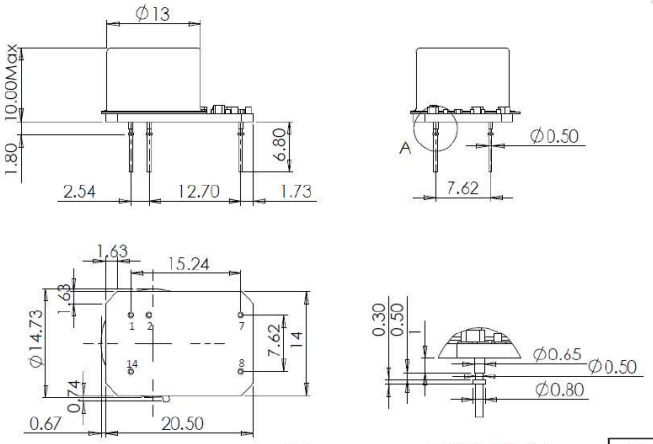
- Ultra-low power consumption <60 mW
- 10 MHz, 16.384 MHz, 100MHz, HCMOS output
- Aging grade, optional
- Low phase noise



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	-40 °C to +85 °C, 100/10MHz, 3.3V
			55	-10°C to +50C, 16.384MHz, 3.3V
• Warm up Power	mW		1000	*Factory configurable*
• Warm up Time	second		120	*Refer to 25C, 15min of operation* ±1x10^{-8}
Environmental				
• Operating Temperature & Stability	ppb			-40 °C to +85 °C
			±10/50	-40 °C to +85 °C,10/100M
			±10	-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}	±5x10^{-7}/first year,100M
			± 2x10^{-10}	10M
			± 5x10^{-10}	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*

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Order Information

Q50	F	58	G	3	H	-100M
	1	2	3	4	5	

1	Temperature Range
code	Specification
A	0 to 50C
B	-10 to 60C
code	0 to 70C
D	-20 to 70C
E	-30 to 70C
F	-40 to 85C

2	Temperature Stability
code	specification
XY	±Xe-Y
59	±5e-9
18	±1e-8
28	±2e-8
38	±3e-8
58	±5e-8

3	aging per day
code	specification,ppb
A	0.1
B	0.2
code	0.5
D	1
E	2
F	3
G	5

4	Supply
code	specification
3	3.3V
5	5V

5	Output
code	specification
H	HCMOS
S	sine wave

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