QX7 Series
5x7 SMD HCMOS Clock Oscillator

QX7 Series

Features
- Miniature 5.0 x 7.0 x 1.4mm package
- Frequency Range 1.000 to 155.520MHz
- Tristate (Enable/Disable) function as standard
- Supply voltage range: 1.8, 2.5, 3.3 or 5.0 Volts
- High ouput load version (50pF) available

Description
QX7 oscillators consist of a TTL/HCMOS-compatible hybrid circuit together with a miniature quartz crystal packaged in a low-profile, industry-standard 7 x 5mm ceramic package.

General Specifications

Frequency Range	1.000 to 155.520MHz	
Output Logic	HCMOS	
Temperature Stability*	±100ppm	
	±50ppm	
	±25ppm	
	±20ppm	
Phase Jitter RMS	<1ps typ.	
Aging per year	±5ppm	
Operating Temperature Range	Standard	-20 to +70°C
	Industrial	-40 to +85°C
	Extended	-40 to +105°C
	Automotive	-40 to +125°C
Storage Temperature Range	-55 to +125°C	

* Frequency stability is inclusive of calibration tolerance at 25°C, frequency change due to shock & vibration, ±10% supply voltage variation and stability over temperature range.

Electrical Specifications

Supply Voltage		1.8Vdd ± 5%	2.5Vdd ± 5%	3.3Vdd ± 10%	5.0Vdd ± 10%
Input Current	1.000 to 32.000MHz	7mA	10mA	15mA	25mA
	32.100 to 50.000MHz	15mA	12mA	20mA	40mA
	50.100 to 70.000MHz	15mA	12mA	25mA	60mA
	70.100 to 80.000MHz	-	60mA	40mA	60mA
	80.100 to 125.000MHz	-	60mA	40mA	80mA
	125.100 to 155.520MHz	-	-	40mA	90mA
Output Current	Lol/Loh	±2mA min.	±4mA min.	±2mA min.	±2mA min.
Output Voltage	Logic High (Voh)	90% (80% at 1.8) Vdd min.			
	Logic Low (Vol)	10% (20% at 1.8) Vdd max.			
Output Symmetry	Standard	40 to 60%			
	Tight	45 to 55%			
Output Load		15pF max. / 30pF max. / 50pF max.			
Rise and Fall Time	1.000 to 32.000MHz	5ns max.	5ns max.	6ns max.	10ns max.
	32.100 to 50.000MHz	3.5ns max.	5ns max.	6ns max.	5ns max.
	50.100 to 70.000MHz	3.5ns max.	5ns max.	6ns max.	5ns max.
	70.100 to 80.000MHz	-	5ns max.	6ns max.	5ns max.
	80.100 to 125.000MHz	-	5ns max.	4ns max.	4ns max.
	125.100 to 155.520MHz	-	-	3ns max.	4ns max.
Standby Current		10µA max.			
Enable-Disable Function		Tri-State			
Output Disable Time		300ns max.	150ns max.		
Output Enable Time		10ms max.	10ms max.		
Start Up Time		10 ms max.			

Part Numbering Guide

Qantek Code	Package	Supply Voltage	Frequency Stability	Frequency	Operating Temperature Range	Automotive Indicator	Load Capacitance	Tight Symmetry Indicator	Packaging
Q = Qantek	X7 = 5x7	18 = 1.8V 25 = 2.5V 33 = 3.3V 50 = 5.0V	A = ±25ppm **B = ±50ppm** C = ±100ppm D = ±20ppm	in MHz, always 8 digits including the decimal point (f.ie. 20.00000)	A = -20 to +70°C **B = -40 to +85°C** C = -40 to +105°C D = -40 to +125°C	A = AEC-Q200	15 = 15pF 30 = 30pF 50 = 50pF	T = 45/55	R = Tape&Reel M = Minireel (250pcs Tape&Reel)
Example: QX733B20.00000B15R								bold letters = recommended standard specification	

QANTEK

Technology Corporation

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Phone: +1 877-227-0440 (tollfree)   www.qantek.com
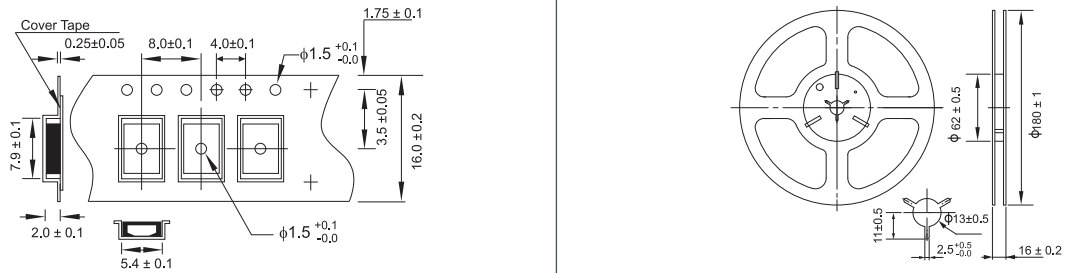Fax: +1 877-227-0440 (tollfree)   info@qantek.com

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Mechanical Dimensions
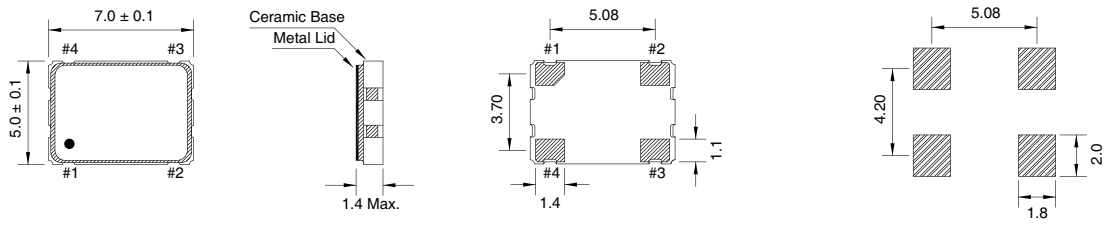
Pin Connection: **#1** E/D, **#2** GND, **#3** Output, **#4** VDC   *Enable/Disable Function:* **E/D (#1)** Output (#3), **High (Open)** Operating, **Low** High Impedance

Tape and Reel Dimensions

Marking Code Guide

Contains frequency, Qantek manufacturing Code, production code (month and year), stability, temperature range and voltage indicator.

Month Codes

January	A	July	G
February	B	August	H
March	C	September	I
April	D	October	J
May	E	November	K
June	F	December	L

Year Codes

2010	0	2011	1	2012	2
2013	3	2014	4	2015	5

Stability

ppm	PN Code
20	D
25	A
50	B
100	C
custom	S

Temperature Range

°C	PN Code
-20 to +70°C	A
-40 to +85°C	B
-40 to +105°C	C
-40 to +125°C	D
custom	S

Voltage

Volt	PN Code
1.8	1
2.5	2
3.3	3
5.0	5
custom	S

Example: First Line: 20.000 *(Frequency)*   Second Line: QA1BB3 *(Qantek – January – 2011 – ±50ppm – -40 to +85°C – 3.3V)*

Solder Reflow Profile
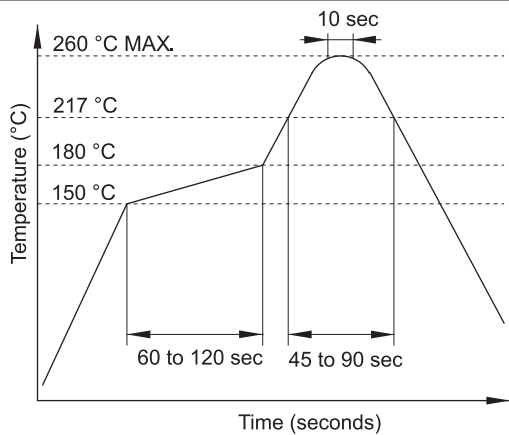
Environmental Specifications

Mechanical Shock	MIL-STD-202, Method 213, C
Vibration	MIL-STD-202, Method 201 & 204
Thermal Cycle	MIL-STD, Method 1010, B
Gross Leak	MIL-STD-202, Method 112
Fine Leak	MIL-STD-202, Method 112

All specifications are subject to change without notice.

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