

QX3 Series

2.5x3.2 SMD HCMOS Clock Oscillator



Features

- Ultra-miniature 2.5 x 3.2 x 1.2mm package
- Frequency Range 1.000 to 75.000MHz
- Tristate (Enable/Disable) function as standard
- Supply voltage 1.8, 2.5 or 3.3 Volts

Description

QX3 ultra-miniature oscillators consist of a TTL/HCMOS-compatible hybrid circuit and a miniature quartz crystal packaged in a low-profile, industry-standard ceramic package.

General Specifications

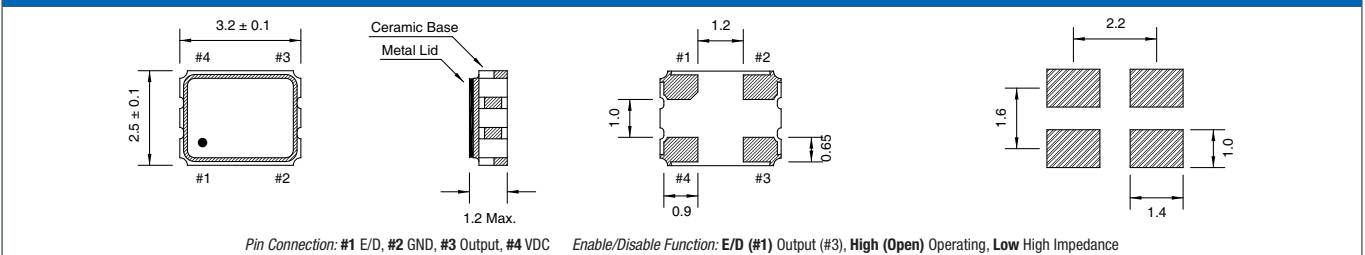
Frequency Range	1.000 to 75.000MHz	
Output Logic	HCMOS	
Temperature Stability*	±100ppm	
	±50ppm	
	±25ppm	
	±20ppm	
Phase Jitter RMS	<1ps typ.	
Aging per year	±5ppm	
Operating Temperature Range	Standard	-20 to +70°C
	Industrial	-40 to +85°C
	Extended	-40 to +105°C
	Automotive	-40 to +125°C
Storage Temperature 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	1.8 Vdd ± 5%	2.5 Vdd ± 5%	3.3 Vdd ± 5%	
Input Current	1.000 to 32.000MHz	7mA	20mA	20mA
	32.100 to 50.000MHz	15mA	20mA	25mA
	50.100 to 60.000MHz	15mA	20mA	25mA
	60.100 to 75.000MHz	15mA	20mA	25mA
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 Current	LoL/Loh	±2mA min.		
Output Load	15pF max.			
Rise and Fall Time	1.000 to 32.000MHz	5ns max.	6ns max.	6ns max.
	32.100 to 50.000MHz	3.5ns max.	6ns max.	6ns max.
	50.100 to 60.000MHz	3.5ns max.	10ns max.	10ns max.
	60.100 to 75.000MHz	3.5ns max.	10ns max.	10ns max.
Standby Current	10µA max.			
Enable-Disable Function	Tri-State			
Output Disable Time	300ns max.	150ns max.		
Output Enable Time	10ms max.	5ms max.		
Start Up Time	5 (10 at 1.8Vdd) ms max.			

Mechanical Dimensions



Part Numbering Guide

Qantek Code	Package	Supply Voltage	Frequency Stability	Frequency	Operating Temperature Range	Automotive Indicator	Load Capacitance	Tight Symmetry Indicator	Packaging
Q = Qantek	X3 = 2.5x3.2	18 = 1.8V 25 = 2.5V 33 = 3.3V	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	T = 45/55	R = Tape&Reel M = Minireel (250pcs Tape&Reel)

Example: QX333B20.00000B15R

bold letters = recommended standard specification



QANTEK Technology Corporation

Phone: +1 877-227-0440 (tollfree)

Fax: +1 877-227-0440 (tollfree)

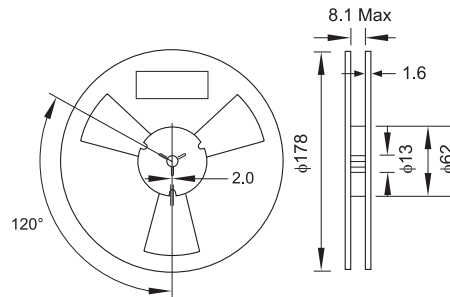
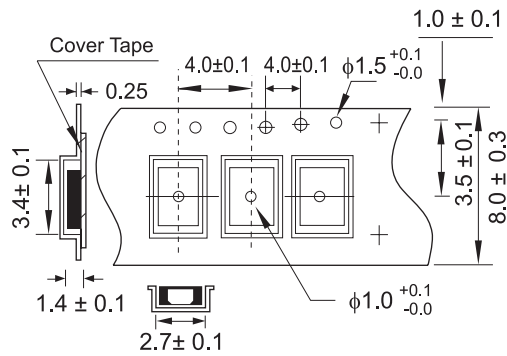
www.qantek.com

info@qantek.com

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Tape and Reel Dimensions



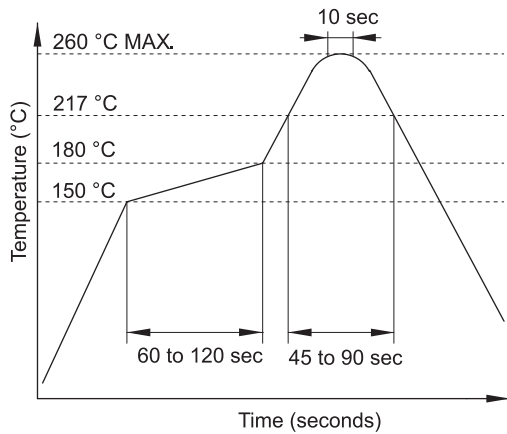
Marking Code Guide

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

Month Codes				Year Codes						Stability		Temperature Range		Voltage	
January	A	July	G	2019	9	2020	0	2021	1	ppm	PN Code	°C	PN Code	Volt	PN Code
February	B	August	H	2022	2	2023	3	2024	4	20	D	-20 to +70°C	A	1.8	1
March	C	September	I	2025	5	2026	6	2027	7	25	A	-40 to +85°C	B	2.5	2
April	D	October	J							50	B	-40 to +105°C	C	3.3	3
May	E	November	K							100	C	-40 to +125°C	D	5.0	5
June	F	December	L							custom	S	custom	S	custom	S

Example: First Line: 20.000 (Frequency) Second Line: QA9BB3 (Qantek – January – 2019 – ±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.



QANTEK Technology Corporation
 Phone: +1 877-227-0440 (tollfree)
 Fax: +1 877-227-0440 (tollfree)

www.qantek.com
 info@qantek.com