



Features

- Miniature 7.0 x 5.0 x 1.4mm package
- Frequency Range 1MHz to 155.520MHz
- Tristate (Enable/Disable) function as standard
- Supply voltage range: 1.8, 2.5, 3.3 or 5.0 Volts
- High output 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°C - +70°C
	Industrial -40°C - +85°C
	Extended -40°C - +105°C
	Automotive -40°C - +125°C
Storage Temperature Range	-55°C - +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%	5.0 Vdd ± 5%
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	±2 mA min.	±4 mA min.	±2 mA min.	±2 mA 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.	510ns max.
	32.100 to 50.000MHz	3.5ns max.	5ns max.	6ns max.	5ns max.
	50.100 to 70.000 MHz	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		10 µA max.			
Enable-Disable Function		Tri-State			
Output Disable Time		300ns max.	150ns max.		
Output Enable Time		10ms max.	10ms max.		
Start Up Time		10ms max.			

Part Numbering Guide									
Quarz-technik Code	Package	Supply Voltage	Frequency Stability	Frequency	Operating Temperature Range	Automotive Indicator	Load Capacitance	Tight Symmetry Indicator	Packaging
QT = Quarz-technik	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 7 digits including the decimal point (f.i.e. 20.0000)	A = -20 - +70°C B = -40 - +85°C C = -40 - +105°C D = -40 - +125°C	A = AEC-Q200	15 = 15pF 30 = 30pF 50 = 50pF	T = 45/55	R = Tape&Reel M = Minireel (250 pcs Tape&Reel) B = Bulk
Example: QTX733B20.0000B15R						bold letters = recommended standard specification			



QT Quartztechnik GmbH

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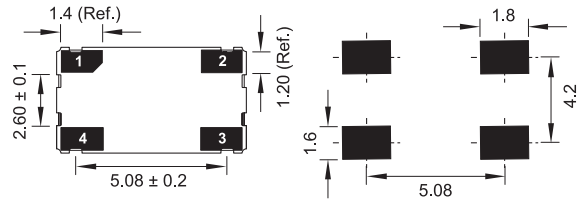
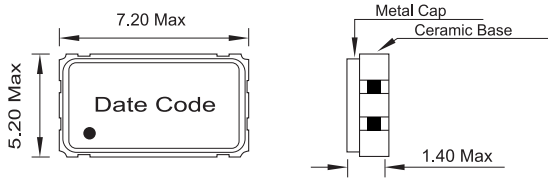
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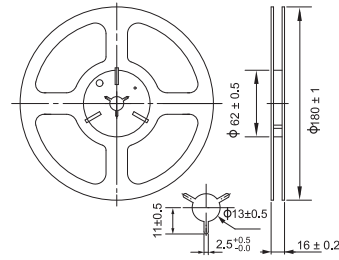
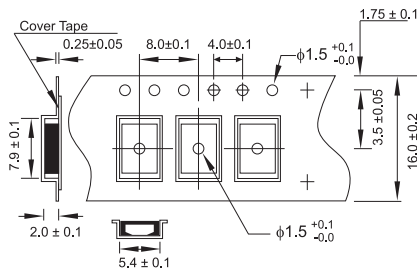
Mechanical Dimensions



Pad 1 : E/D Pad 2 : GND
Pad 4 : VDC Pad 3 : OUTPUT

Recommended Solder Pattern

Tape and Reel Dimensions



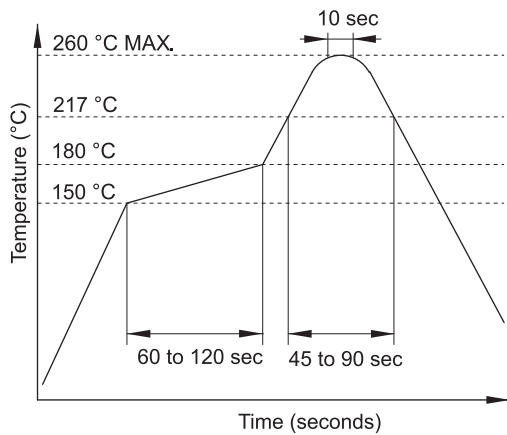
Marking Code Guide

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

Month Codes				Year Codes				Stability		Temperature Range		Voltage	
Month	Code	Month	Code	Year	Code	Year	Code	PPM	PN Code	°C	PN Code	Volt	PN Code
January	A	July	G	2010	0	2011	1	20	D	-20°C - +70°C	A	1.8	1
February	B	August	H	2013	3	2014	4	25	A	-40°C - +85°C	B	2.5	2
March	C	September	I	2016	6	2017	7	50	B	-40°C - +105°C	C	3.3	3
April	D	October	J			2018	8	100	C	-40°C - +125°C	D	custom	S
May	E	November	K					custom	S	custom	S		
June	F	December	L										

Example: First Line: 20.000 (Frequency) Second Line: QA1BB3 (Quartztechnik - January - 2011 - ±50PPM - -40°C - +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



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