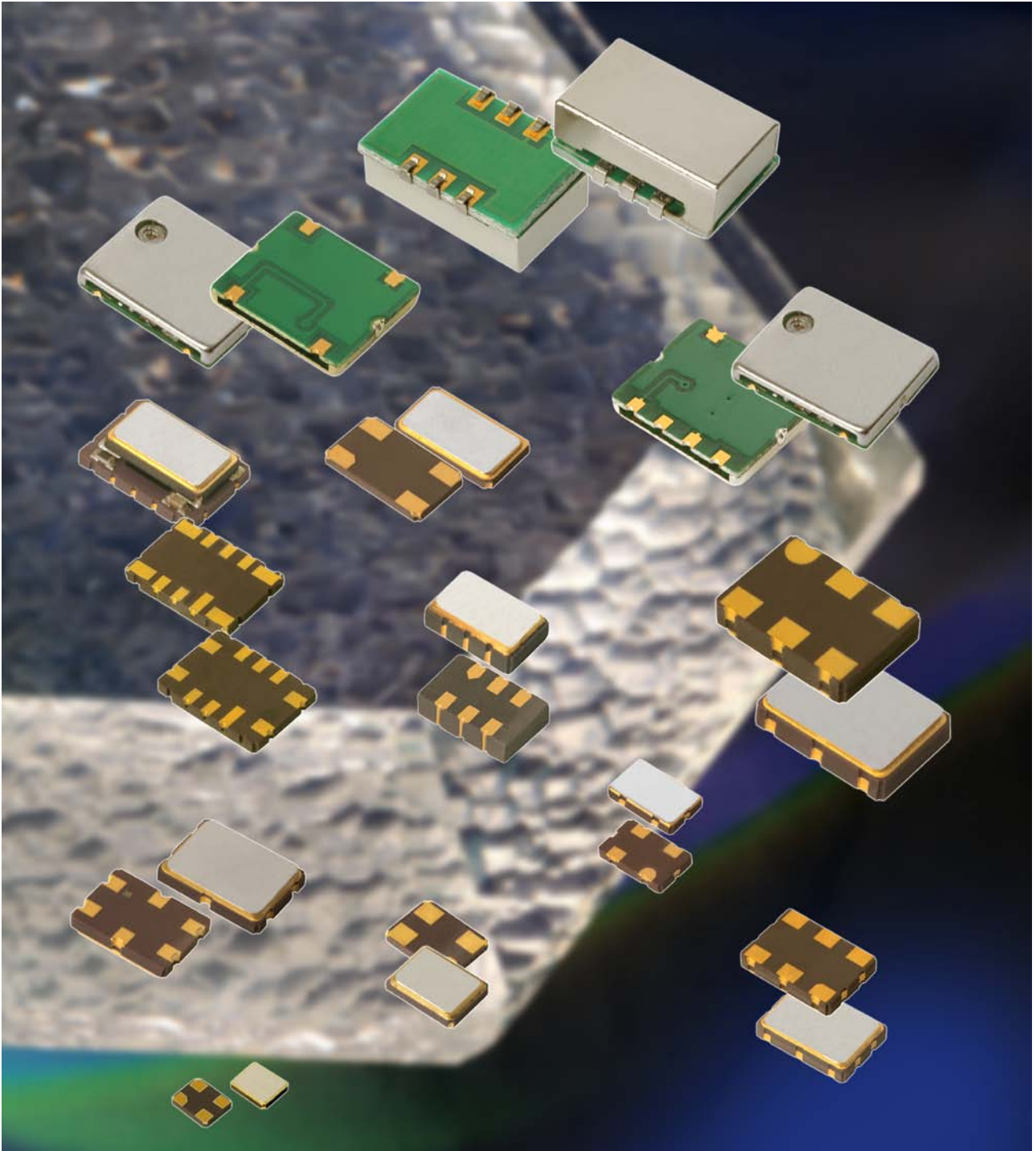
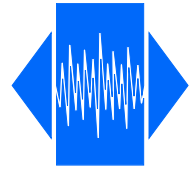


# TCXO

# MORE THAN FREQUENCY

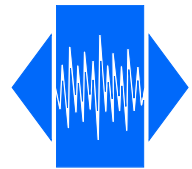
Temperature Compensated Crystal Oscillators





### Surface-Mounted Type

Type	Package Size	Frequency Range	Supply Voltage	Frequency Adjustment	Output Signal	Package Type
	[mm]	[MHz]	[V]	[ppm]		
<b>TX7-252</b>	2.5 x 2.0	16 MHz to 52 MHz	2.8 V	none	clipped sine wave	
<b>TX7-302</b>	3.2 x 2.5	10 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-503</b>	5.0 x 3.2	10 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-503-SQ</b> on request -55 to 95°C	5.0 x 3.2	10 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-705-TQ</b> on request -55 to 95°C	7.0 x 5.0	5 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-705-SQ</b> on request -55 to 95°C	7.0 x 5.0	5 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-705-SQ-ST3</b> STRATUM III	7.0 x 5.0	5 MHz to 52 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX7-705-CoSa</b> COSPAS SARSAT	7.0 x 5.0	10 MHz to 32 MHz	2.8 V 3.3 V 5.0 V	none	clipped sine wave CMOS	
<b>TX3-801B</b>	11.4 x 9.6	9.6 MHz to 61.44 MHz	3.0 V 3.3 V 5.0 V	> ± 5 ppm internal trimmer	clipped sine wave	
<b>TX3-801HT</b>	11.4 X 9.6	9.6 MHz to 61.44 MHz	3.0 V 3.3 V 5.0 V	> ± 5 ppm internal trimmer	HCMOS	
<b>TX3-801H-HP</b>	11.4 X 9.6	9.6 MHz to 200 MHz	3.0 V 3.3 V 5.0 V	none	HCMOS	
<b>TX3-808DS</b>	11.4 x 9.6	50 MHz to 200 MHz	3.0 V 3.3 V 5.0 V	none	LVDS	
<b>TX3-808PE</b>	11.4 x 9.6	50 MHz to 200 MHz	3.0 V 3.3 V 5.0 V	none	LVPECL	
<b>TXO-P9-H</b>	14.0 x 9.0	10 MHz to 200 MHz	3.3 V 5.0 V	none	HCMOS	
<b>TXO-P9-S</b>	14.0 x 9.0	10 MHz to 200 MHz	3.3 V 5.0 V	none	Sine wave	
<b>TXO-SH-S</b>	20.0 x 13.0	10 MHz to 200 MHz	3.3 V 5.0 V	none	Sine wave	
<b>TXO-SK-S</b>	20.0 x 13.0	10 MHz to 200 MHz	3.3 V 5.0 V	none	Sine wave	
<b>TX5-HL</b>	18.3 x 11.8 gullwing	1.5 MHz to 200 MHz	3.3 V 5.0 V	> ± 5 ppm internal trimmer	HCMOS	



### STRATUM III

<b>Applications</b>	<ul style="list-style-type: none"> <li>• SONET / SDH</li> <li>• Synchronous Equipment Timing Source</li> <li>• Synchronous Ethernet</li> <li>• IEEE 1588 version 2</li> </ul>
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Type	Package Size	Frequency Range	Supply Voltage	Frequency Tolerance ex factory	Output Signal	Standard Frequency	Package Type
	[mm]	[MHz]	[V]	[ppm]		[MHz]	
<b>TX7-503C-ST3</b>	5.3 x 3.2	10 MHz to 40 MHz	2.8 V 3.3 V 5.0 V	± 0.5 ppm	HCMOS	19.44 MHz 20.00 MHz 25.00 MHz 26.00 MHz	
<b>TX7-705-C-ST3</b>	7.0 x 5.0	10 MHz to 32 MHz	2.8 V 3.3 V 5.0 V	± 0.5 ppm	clipped sine wave HCMOS	12.80 MHz 19.44 MHz 20.00 MHz 25.00 MHz	
<b>TX7-705-TQ-ST3</b>	7.0 x 5.0	5 MHz to 50 MHz	2.8 V 3.3 V 5.0 V	± 0.5 ppm	clipped sine wave HCMOS	12.80 MHz 19.44 MHz 20.00 MHz 25.00 MHz	
<b>TX7-705-SQ-ST3</b>	7.0 x 5.0	5 MHz to 50 MHz	2.8 V 3.3 V 5.0 V	± 0.5 ppm	clipped sine wave HCMOS	12.80 MHz 19.44 MHz 20.00 MHz 25.00 MHz	
<b>TXO-P9-H-ST3</b>	14.0 x 9.0	10 MHz to 200 MHz	2.8 V 3.3 V 5.0 V	± 0.5 ppm	HCMOS	12.80 MHz 19.44 MHz 20.00 MHz 100.00 MHz	
<b>TX6-464H-ST3</b>	DIL 14/4 pin	10 MHz to 200 MHz	3.3 V 5.0 V	± 0.5 ppm	HCMOS	12.80 MHz 19.44 MHz 20.00 MHz 100.00 MHz	

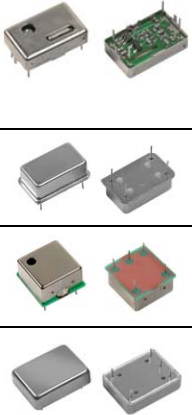
Frequency stability	ITU-T G.813 option 1	Phase Noise @ 40 MHz
all inclusive: vs temperature, tolerance @ +25 °C, ageing over 20 years, supply & load change	<b>±4.6 ppm</b>	- 87 dBc/Hz @ 10 Hz - 113 dBc/Hz @ 100 Hz - 135 dBc/Hz @ 1 kHz - 152 dBc/Hz @ 10 kHz - 157 dBc/Hz @ 100 kHz
versus operating temperature	<b>±0.28 ppm</b>	
holdover stability over 24 hours	<b>±0.37 ppm</b>	
calibration @ +25 °C	<b>±0.5 ppm</b>	
ageing over 20 years	<b>±3.0 ppm</b>	
operating temperature range	-20 ~ +70 °C commercial application -40 ~ +85 °C industrial application	
storage temperature range	-55 ~ +125 °C	
packaging units for SMD type	tape & reel 500 or 1k pieces	

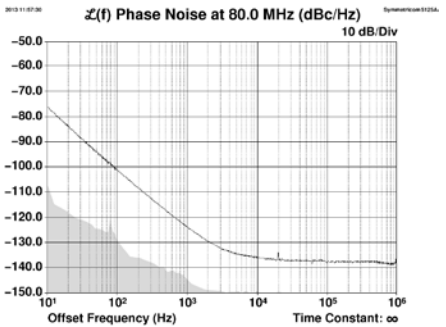
QuartzCom AG  
Bischofstrasse 11  
CH 2544 Bettlach  
Switzerland

Fax +41 32 644 24 05  
Tel +41 32 644 24 00  
E-Mail sales@quartzcom.com  
[www.quartzcom.com](http://www.quartzcom.com)



### Through Hole Type

Type	Package Size	Frequency Range	Supply Voltage	Frequency Adjustment	Output Signal	Package Type
	[mm]	[MHz]	[V]	[ppm]		
<b>TX5-SP</b>	DIL 14 / 4 pin	9.6 MHz to 200 MHz	3.3 V 5.0 V	> ± 5 ppm internal trimmer	sine wave	
<b>TX5-AP</b>					clipped sine wave	
<b>TX5-HP</b>	DIL 14 / 4 pin	1.5 MHz to 200 MHz	3.3 V 5.0 V	> ± 5 ppm internal trimmer	HCMOS	
<b>TX6-H</b>	DIL 14 / 4 pin	1 MHz to 200 MHz	3.3 V 5.0 V	none	sine wave HCMOS	
<b>TXE-H</b>	20 x 20 height = 10	10 MHz to 200 MHz	3.3 V 5.0 V	> ± 5 ppm internal trimmer	sine wave clipped sine wave HCMOS	
<b>TXU-S</b>	36 x 26 height = 10	10 MHz to 50 MHz	3.3 V 5.0 V 9 ~ 12 V	> ± 5 ppm external potentiometer	sine wave square wave (open collector)	

Parameters		Phase Noise @ 80.0 MHz
<b>all inclusive:</b> stability, tolerance, ageing, supply & load change	<b>±2.0 ppm ~ ±5.0 ppm</b>	
<b>versus operating temperature</b>	<b>±0.1 ppm ~ ±2.5 ppm</b>	
<b>operating temperature range</b>	<b>-20 ~ +70 °C commercial application</b> <b>-40 ~ +85 °C industrial application</b>	
<b>storage temperature range</b>	<b>-55 ~ +125 °C</b>	
<b>packing through hole type</b>	<b>25 pieces per tube or 50 pieces per tray</b>	

Required specification for quotation request		Units	Example
Type			TX3-801
nominal frequency		MHz	19.200 MHz
frequency stability vs. temperature range		ppm	±2.5 ppm
operating temperature range		°C	-20 to +70 °C
supply voltage		V	3.3 V
output signal: clipped sine wave, sine wave, HCMOS / TTL		V	clipped sine wave
output load: clipped sine wave		kΩ // pF	10 kΩ // 10 pF
sine wave		Ω	
HCMOS / TTL		pF	
special output load on request			
frequency adjustment	by internal trimmer or by external trimmer by external potentiometer	ppm	±3 ppm
phase noise		dBc/Hz	< -132 dBc/Hz @ 1 kHz < -143 dBc/Hz @ 10 kHz < -148 dBc/Hz @ 100 kHz