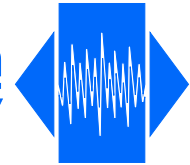


# VT7-503-SQ-HP

High precision analogue temperature compensated  
small packaged SMD VC-TCXO

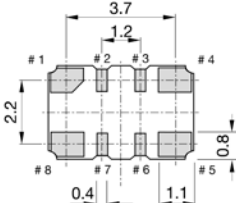
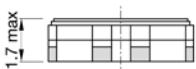
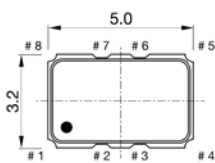
**QuartzCom**  
the communications company



## Features

- Applications: instrumentation, mobile radio, sat. navigation
- High frequency stability vs. temperature:  $\pm 0.20 \sim \pm 0.5$  ppm
- Output signal Clipped sine wave or CMOS
- Low phase noise, high reliability

<b>Standard frequencies</b>	<b>10, 12, 12.8, 13, 14.4, 16, 16.384, 20, 24, 25, 26, 32, 38.88, 40 &amp; 50 MHz</b>		
<b>Frequency range</b>	<b>10 ~ 52 MHz</b>		
Frequency stability vs. temperature reference to $(F_{MAX}+F_{MIN})/2$	$\pm 0.50$ ppm $\pm 0.20 \sim 0.28$ ppm $\pm 1.0$ ppm	-40 ~ +85 °C -40 ~ +85 °C -55 ~ +95 °C	standard on request on request
vs. supply voltage changes reference to frequency at nominal supply	$\leq \pm 0.05$ ppm	$\pm 5$ %	
vs. load changes reference to frequency at nominal load	$\leq \pm 0.05$ ppm	$\pm 10$ %	
vs. aging	$\leq \pm 1.0$ ppm $\leq \pm 0.5$ ppm	1 <sup>st</sup> year 1 <sup>st</sup> year (on request)	
Frequency tolerance ex. factory (preset)	$\leq \pm 1.0$ ppm	@ +25 °C	
<b>Supply voltage</b> (nominal value needs to be defined)	+2.7 V to +5.0 V	(2.7 V, 3.0 V, 3.3 V & 5.0 V)	
Type	<b>VT7-503M-SQ-HP</b>	<b>VT7-503CM-SQ-HP</b>	
Output signal	<b>clipped sine wave</b>	<b>CMOS</b>	
Output level	> 0.8 Vp-p	$V_{OH} > 0.9 \times V_{dc} / V_{OL} < 0.1 \times V_{dc}$	
Output load	10 k $\Omega$ // 10 pF	15 pF	Max.
Supply current	1.5 ~ 3 mA	3 ~ 8 mA	
Electronic Frequency Control (EFC) range	$\pm 5 \sim \pm 10$ ppm		
EFC voltage (Vc)	+1.5 V $\pm 1.0$ V	or +2.5 V $\pm 2.0$ V for 5.0 V supply voltage	
Tri-state function	pin #6 > 0.7 x Vdc or open pin #6 < 0.3 x Vdc or GND	pin #5 $\rightarrow$ oscillation pin #5 $\rightarrow$ high impedance	
Phase noise @ 10 MHz	< -145 dBc/Hz < -155 dBc/Hz < -155 dBc/Hz	@ 1 kHz @ 10 kHz @ 100 kHz	
Operating temperature range	-20 ~ +70 °C -40 ~ +85 °C -55 ~ +95 °C	indoor outdoor (extended temperature range on request)	
Storage temperature range	-55 ~ +105 °C		
Reflow Profiles as per IPC/JEDEC J-STD-020C	$\leq 260$ °C over 10 sec. Max.		
Moisture sensitivity	Level 1 (unlimited)		



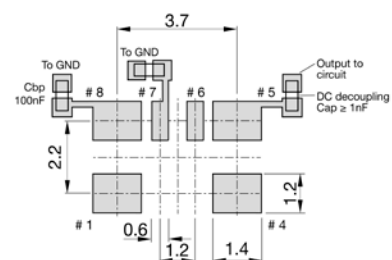
### Pin function

- # 1 Vc (Voltage control)
- # 2 do not connect
- # 3 do not connect
- # 4 GND
- # 5 OUTPUT
- # 6 Tri-state or do not connect  
do not connect  
optional 33 nF to the GND
- # 7 Vdc

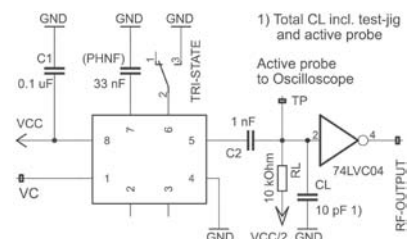
### Phase noise reduction (optional on request)

- # 7 Phase noise filter (PhNF)  
With external capacitor  
Cap = 33 nF

### Foot print



### Test circuit (CSW)



Specifications subject to change without notice

0011/65/EU RoHS compliant

21 Feb. 15

QuartzCom AG  
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CH 2544 Bettlach  
Switzerland

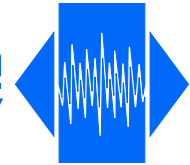
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E-Mail sales@quartzcom.com  
[www.quartzcom.com](http://www.quartzcom.com)



# TX7-503-SQ-HP

High precision analogue temperature compensated  
small packaged SMD TCXO

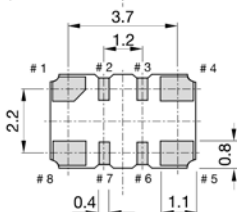
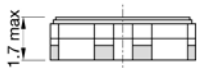
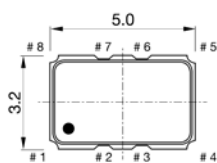
**QuartzCom**  
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vs. load changes reference to frequency at nominal load	$\leq \pm 0.05$ ppm	$\pm 10$ %	
vs. aging	$\leq \pm 1.0$ ppm $\leq \pm 0.5$ ppm	1 <sup>st</sup> year 1 <sup>st</sup> year (on request)	
Frequency tolerance ex. factory (preset)	$\leq \pm 1.0$ ppm	@ +25 °C	
<b>Supply voltage</b> (nominal value needs to be defined)	+2.7 V to +5.0 V	(2.7 V, 3.0 V, 3.3 V & 5.0 V)	
Type	<b>TX7-503M-SQ-HP</b>	<b>TX7-503CM-SQ-HP</b>	
Output signal	<b>clipped sine wave</b>	<b>CMOS</b>	
Output level	> 0.8 Vp-p	$V_{OH} > 0.9 \times V_{dc} / V_{OL} < 0.1 \times V_{dc}$	
Output load	10 k $\Omega$ // 10 pF	15 pF	Max.
Supply current	1.5 ~ 3 mA	3 ~ 8 mA	
Tri-state function	pin #6 > 0.7 x Vdc or open pin #6 < 0.3 x Vdc or GND	pin #5 → oscillation pin #5 → high impedance	
Phase noise @ 10 MHz	< -125 dBc/Hz < -145 dBc/Hz < -155 dBc/Hz < -155 dBc/Hz	@ 100 Hz @ 1 kHz @ 10 kHz @ 100 kHz	
Operating temperature range	-20 ~ +70 °C -40 ~ +85 °C -55 ~ +95 °C	indoor outdoor (extended temperature range on request)	
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Reflow Profiles as per IPC/JEDEC J-STD-020C	$\leq 260$ °C over 10 sec. Max.		
Moisture sensitivity	Level 1 (unlimited)		



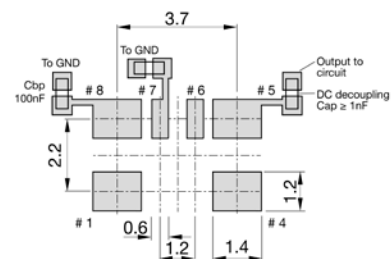
## Pin function

- # 1 GND or not connected
- # 2 do not connect
- # 3 do not connect
- # 4 GND
- # 5 OUTPUT
- # 6 Tri-state or do not connect  
optional 33 nF to the GND
- # 7 do not connect
- # 8 Vdc

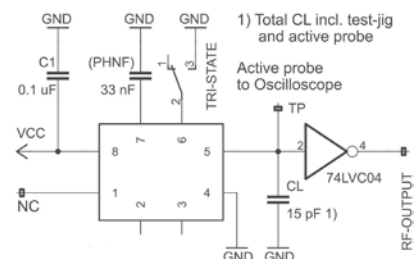
## Phase noise reduction (optional on request)

- # 7 Phase noise filter (PhNF)  
With external capacitor  
Cap = 33 nF

## Foot print



## Test circuit (CMOS)



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0011/65/EU RoHS compliant

20 Feb. 15

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