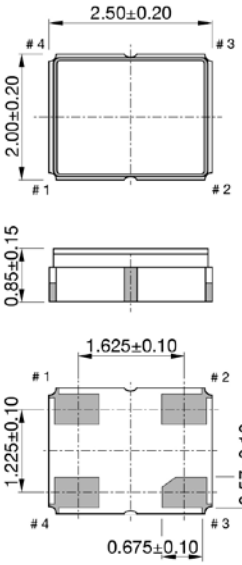
TX25-H

Miniature size, high reliable
analogue temperature compensated CMOS TCXO

Generic specification

Frequency range	**10.000 ~ 60.000 MHz**		
Standard frequencies	10, 12, 16, 20, 25, 26, 32, 38.4, 40, and 60 MHz		
Frequency stability:			
vs. temperature referenced to (FMAX+FMIN)/2	≤ ±2.50 ppm	over -40 to +85 °C	(*)
vs. supply voltage changes referenced to frequency at nominal supply	≤ ±0.2 ppm	±5 %	
vs. load changes referenced to frequency at nominal load	≤ ±0.2 ppm	±5 %	
vs. aging @ +40 °C	≤ ±1.0 ppm	1st year	
G-sensitivity	< 1.8 ppb/g	per axis	
Frequency tolerance ex. factory	≤ ±2.0 ppm	@ +25 °C	
Supply voltage (nominal value ±5 %)	+1.8 V, +2.5 V or +3.3 V		(*)
Output signal	CMOS		
Output level	V_{OH} > 0.9*Vcc / V_{OL} < 0.1*Vcc		
Output load	15 pF Max.		
Current consumption, depending on frequency	5 ~ 10 mA		
Tri-state function	pin #1 ➔ high or open pin #1 ➔ low or GND	pin #3 ➔ oscillation pin #3 ➔ high impedance	
Phase noise (typical value for 26 MHz)	-80 dBc/Hz @ 10 Hz -110 dBc/Hz @ 100 Hz -130 dBc/Hz @ 1 kHz -145 dBc/Hz @ 10 kHz -152 dBc/Hz @ 100 kHz		
Operating temperature range	-40 ~ +105 °C		(*)
Storage temperature range	-55 ~ +105 °C		
Reflow Profiles as per IPC/JEDEC J-STD-020C	≤ 260 °C over 10 sec. Max.		
Moisture sensitivity	Level 1 (unlimited)		

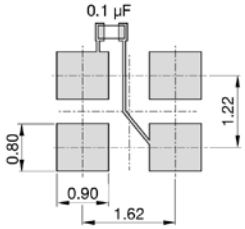
(*) See available options on page #2 **Note: Unless otherwise specified conditions are @+25 °C**

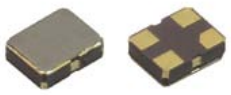


Pin function

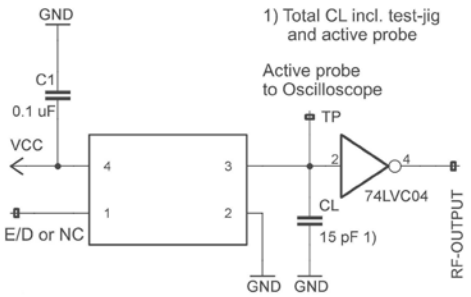
# 1	E/D or NC
# 2	GND
# 3	Output
# 4	Vcc

Soldering pattern





Test circuit



2011/65/EU RoHS compliant

QuartzCom AG
Bruehlstrasse 15
CH 2540 Grenchen
Switzerland

Fax +41 32 644 24 05
Tel +41 32 644 24 00
E-Mail sales@quartzcom.com
www.quartzcom.com

Designed in Switzerland

QuartzCom AG reserves the right to make spec changes to this product

TX25-H

Miniature size, high reliable
analogue temperature compensated CMOS TCXO

QuartzCom
the communications company

Generic specification

Ordering code

TX25-H(2)-(3)(4)-40.000MHz *Example:* ***TX25-H25-NN2u5-40.000MHz***

Oscillator type	(2) Supply voltage	(3) Operating temperature	(4) Frequency stability
TX = TCXO	18 = 1.8 V 25 = 2.5 V 33 = 3.3 V	NN = -40 to +85 °C NO = -40 to +90 °C NR = -40 to +105 °C	2u5 = ± 2.50 ppm 5u0 = ± 5.00 ppm 10u = ± 10.0 ppm

Frequency stability vs. temperature

ppm	≤± 2.50	≤± 5.00	≤± 10.0
-20 to +70 °C	O	O	O
-30 to +85 °C	Δ	O	O
-40 to +85 °C	Δ	Δ	O

Δ Ask factory
O Available
X Not available

Environmental conditions

Test	IEC 60068 Part…	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta method 1, Test Td_1 method 2, Test Td_2 method 2
Shock *	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axis 100 g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axis, 1 oct/min 10 Hz – 55 Hz 0,75 mm; 55 Hz – 2 kHz, 10 g
Vibration, random*	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - ageing - extended ageing		 5.7.1 5.7.2	108A		 4.8.35	 30 days @ 85 °C 1000 h, 2000 h, 8000 h @ 85 °C

Other environmental conditions on request

QuartzCom AG
Bruehlstrasse 15
CH 2540 Grenchen
Switzerland

Fax +41 32 644 24 05
Tel +41 32 644 24 00
E-Mail sales@quartzcom.com
www.quartzcom.com

Designed in Switzerland

QuartzCom AG reserves the right to make spec changes to this product

Handling Recommendation for SMD Crystal & Crystal Oscillator

1. ESD Handling

Crystal oscillators are electrostatic sensitive device. Therefore, direct touching of the terminals with fingers and without ESD precautions must be avoid.
Proper handling must be made according to the established ESD handling rules
IEC 61340-5-1 and EN 100015-1 to avoid degradations of the oscillator performance due to damages of the internal circuitry by electrostatic discharge.

2. Shocks & Vibrations

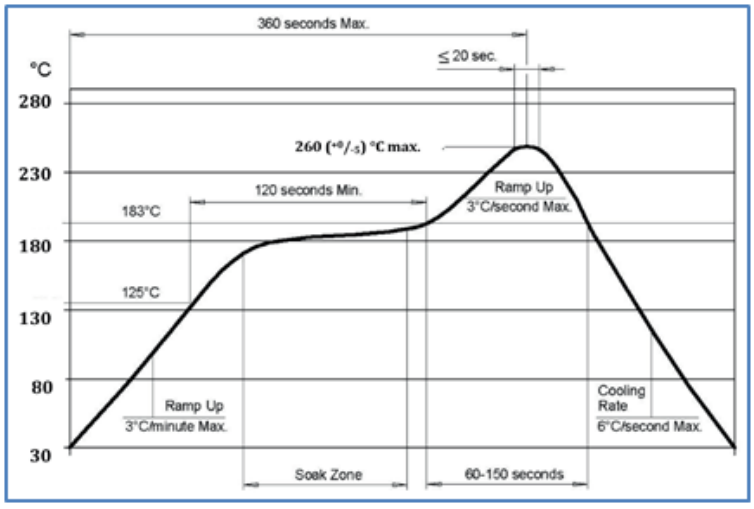
Excessive mechanical shocks and or vibrations during handling as well as manual and automatic assembly must be avoided.
If accidently, the component was dropped or subject to strong shock, component should be verified that the electrical function is still within the specification and still hermetically sealed.

3. Thermal Shocks

Avoid steep temperature gradients. It might lead to breakage of the crystal blank
Infrared reflow processes in general are safe.

4. Soldering & Cleaning

Maximum Reflow Condition in accordance with JEDEC STD-020C



Avoid washing or welding processes using Ultrasonic energy. These processes can damage the crystal due to mechanical resonance of the crystal blanks.

5. Coating

Using resin may have an impact on the oscillator characteristics.
If resin is used, please contact QuartzCom or our representative for more information.
In situations where resin would be used without contacting us in advance,
QuartzCom will not be responsible for any damages caused to the components or and injuries caused to people.

QuartzCom AG
Bruehlstrasse 15
CH 2540 Grenchen
Switzerland

Fax +41 32 644 24 05
Tel +41 32 644 24 00
E-Mail sales@quartzcom.com
www.quartzcom.com

Designed in Switzerland

QuartzCom AG reserves the right to make spec changes to this product