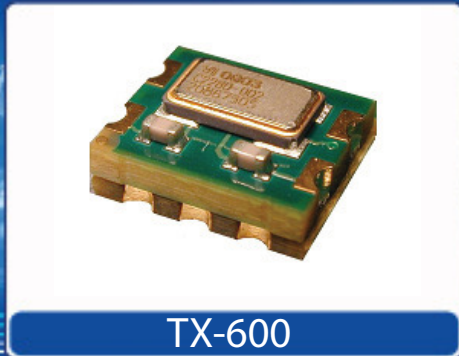



Helping Customers Innovate, Improve & Grow



### Description

The TX-600 Series TCXO is designed utilizing full analog technology. Extremely low phase noise and smooth frequency vs temperature are achieved. Innovative packaging design allows for high volume manufacturing as well as low profile.

### Features

- High Shock Survival > 20,000 G (TX-600)
- Frequency Range: 20 to 100 MHz
- Commercial application (TX-601)
- EAR99
- Low Phase Noise, Low  tivity
- Stratum 3 Compliant
- Fully RoHS Compliant
- Surface Mount, Low Profile
- 

### Applications

- Military Portable Radios
- GPS Telemetry
- Test and Measurement Equipment
- Wi-Max Basestations
- Wireless Communications
- Wireline Switches

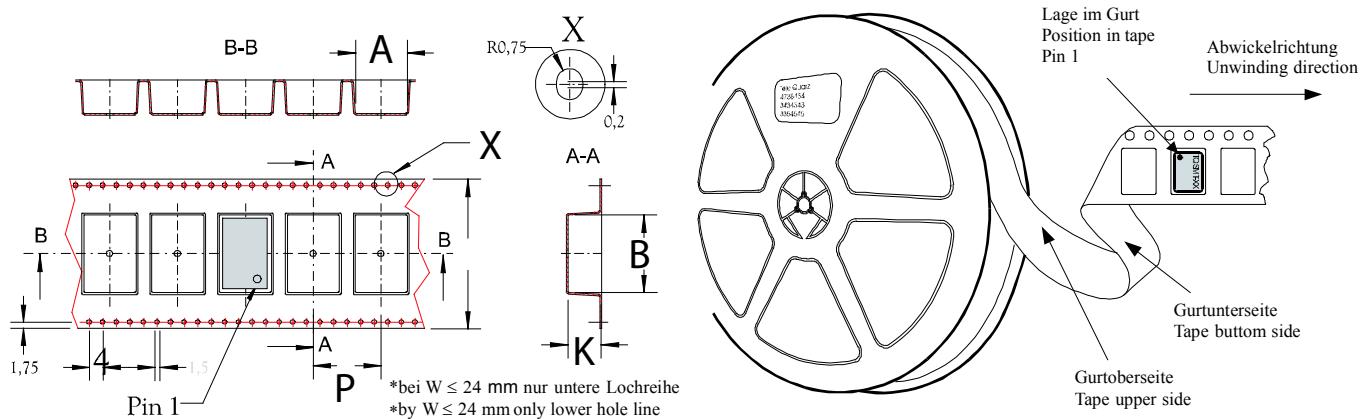
### Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
Frequency Stabilities <sup>1</sup>					
vs. operating temperature range (referenced to +25°C)	-2.0		+2.0	ppm	-40... +85°C
	-1.0		+1.0	ppm	-40... +85°C
	-0.5		+0.5	ppm	-20... +70°C
	-0.28		+0.28	ppm	0... +70°C
Total stability	-4.6		+4.6	ppm	Stratum 3, GR-1244-CORE, for all causes and 15 yrs aging
Initial Tolerance vs. supply voltage change vs. load change vs. aging / 1 year vs. aging	-1.0		+1.0	ppm	at time of shipment, nominal EFC Vs ± 5% Load ± 10% @ +40°C for 15 years
	-0.1		+0.1	ppm	
	-0.2	±1	+0.2	ppm	
			4.0	ppm	
Supply Voltage (Vs)					
Supply voltage	4.75	5.0	5.25	VDC	
Supply voltage	3.135	3.3	3.465	VDC	
Supply voltage	2.7	2.8	2.9	VDC	

## Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
Current consumption			35	mA	Depends on frequency
<b>RF Output</b>					
Signal	HCMOS				
Load		15		pF	
Signal Level (Vol)			0.1*Vs	V	
Signal Level (Voh)	0.9*Vs			V	
Rise/Fall Time			5	ns	@ nominal Load and 10% to 90% of waveform
Duty cycle	40	50	60	%	@ nominal Load and @ 50% level
Tri-State (>12.8 MHz)	Active High				Tristate Output standard
Signal	Clipped Sinewave				
Level		1		Vpp	with Nominal Load
Load R		10		kohm	
Load C		10		pF	
<b>Frequency Tuning (EFC)</b>					
Tuning Range	Fixed; No adjust				
Tuning Range	±5.0			ppm	
Tuning Slope	Positive				
Control Voltage Range	0.3 0.5 0.28	1.65 2.5 1.4	3.0 4.5 2.5	VDC VDC VDC	with Vs= 3.3VDC with Vs=5.0VDC with Vs = 2.8VDC
Freq. control input impedance	10			kohm	
<b>Additional Parameters<sup>1</sup></b>					
Reference Voltage (Vref) (1 mA source)	+3.8 +2.3	+4.0 +2.4	+4.1 +2.5	VDC VDC	Vs=>+4.5 VDC Vs=>+2.7 VDC
Phase Noise <sup>3</sup> (@ 20 MHz tested under nominal operating conditions)			-90 -120 -140 -145 -150	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz
Jitter			1	ps RMS	
<b>Absolute Maximum Ratings</b>					
Supply voltage (Vs)			6.0	V	Damage will occur beyond this level
Control Voltage	0		Vs	V	
Operable temperature range	-45		+90	°C	
Storage temperature range	-55		+105	°C	

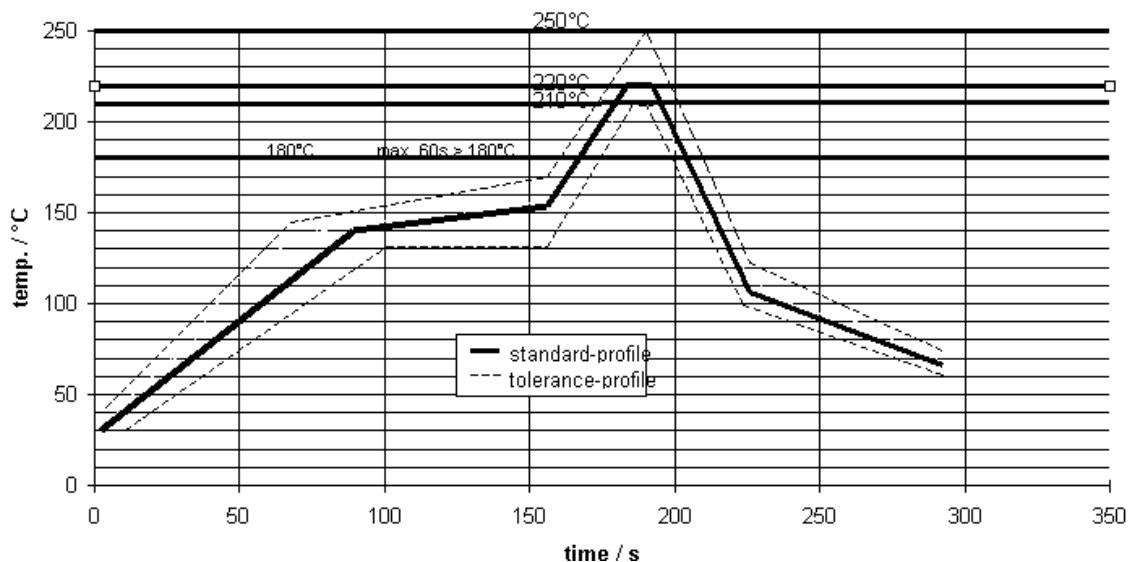
## Outline Drawing / Enclosure



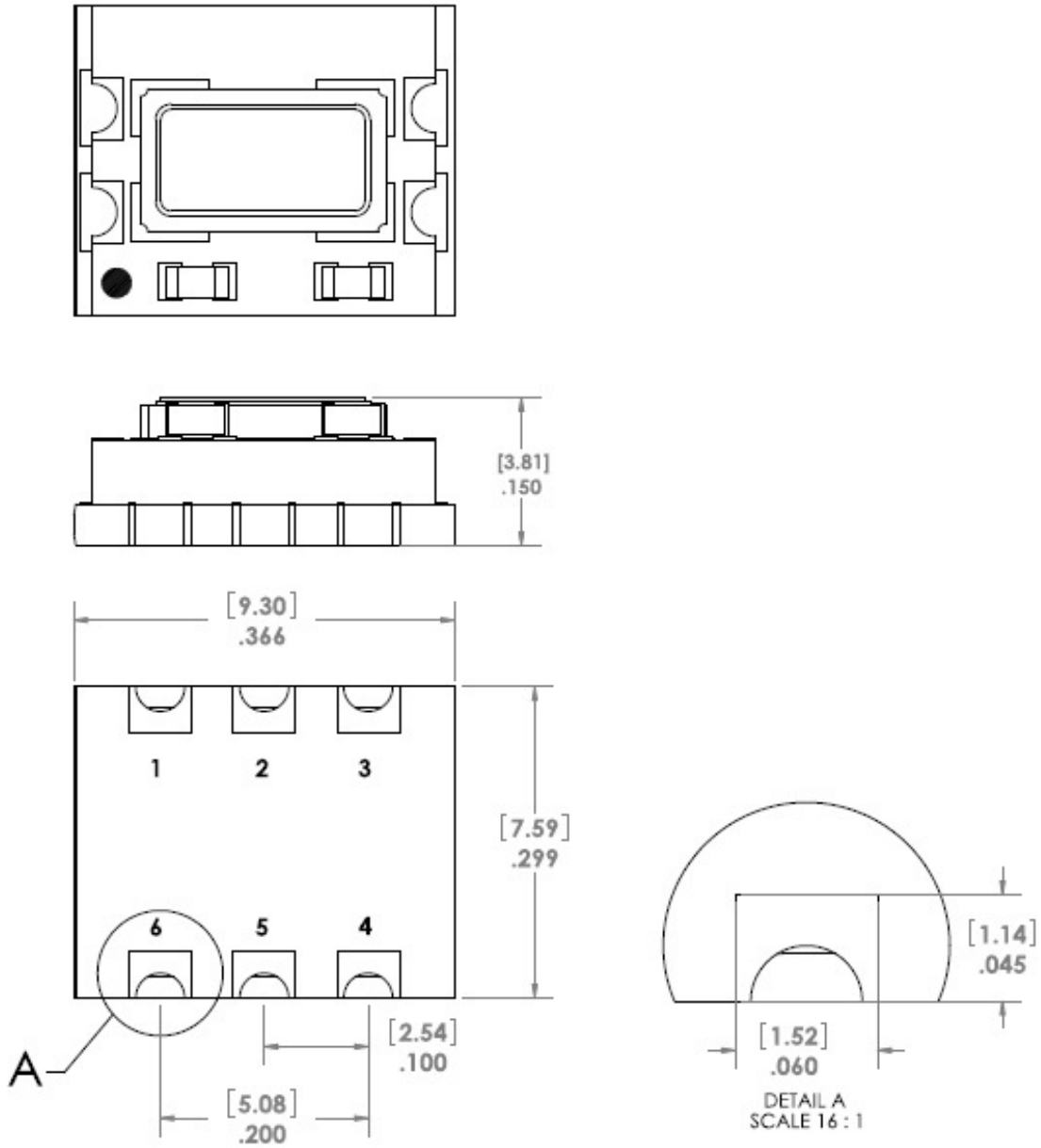
Production tolerance complying DIN IEC 286-3				
Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
Type C	44	50	300	20

## Recommended Reflow Profile

**standard-reflow-profile for SMD-oscillators**



## Outline Drawing / Enclosure

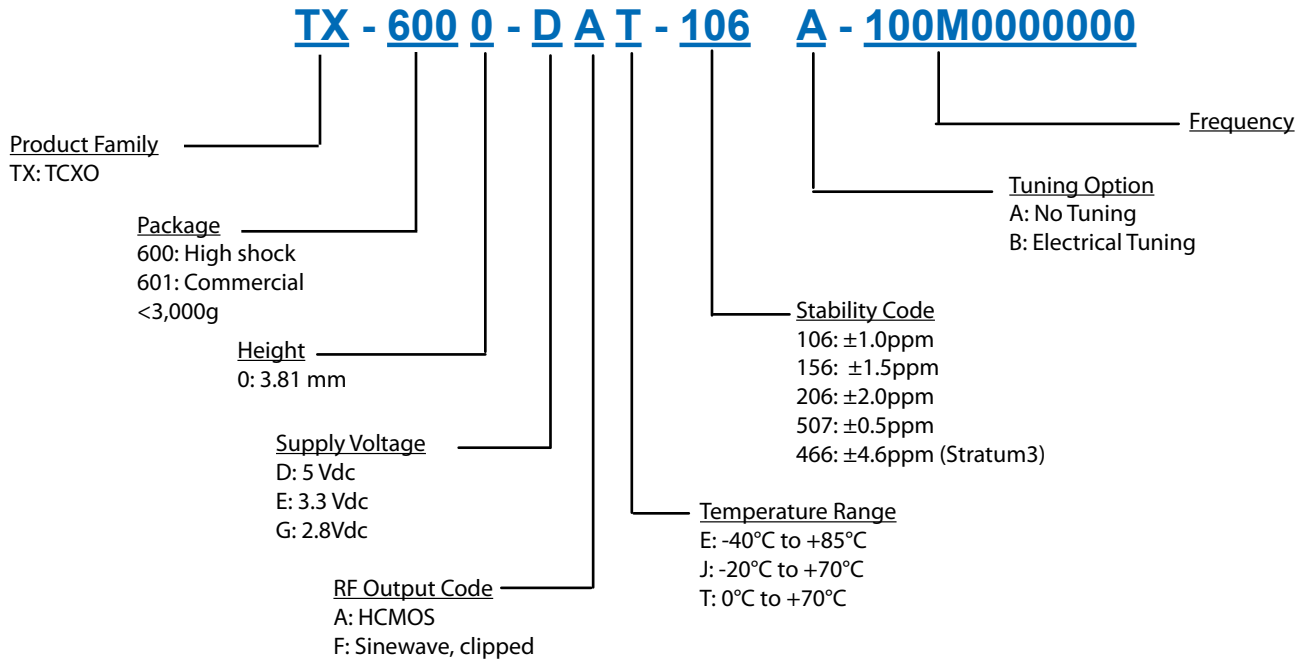


Dimensions in [mm] inches

Type C		
Code	Height "H"	Pin Length "L"
0	3.81 mm	NA

Pin Connections	
1	Voltage Control (Vc)
2	Reference Voltage (Vref)
3	Ground (Case)
4	Output
5	Enable
6	Supply Voltage (Vs)

## Ordering Information



**Notes:**

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

## For Additional Information, Please Contact

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