TX-550

Temperature Compensated Crystal Oscillator



Description

The TX-550 Series TCXO innovative manufacturing and the latest technology to provide extremely low phase noise and g-sensitivity. The assembly includes a dual crystal circuit to cancel opposing g-sensitivity vectors.

Features

- Low Phase Noise, Low G-Sensitivity
- Fully RoHS Compliant
- Surface Mount, Low Profile
- High Shock Survival up 20K g
- Frequency Range: 8 MHZ to 80 MHZ

Applications

- Military Portable Radios
- GPS Telemetry
- Test and Measurement Equipment

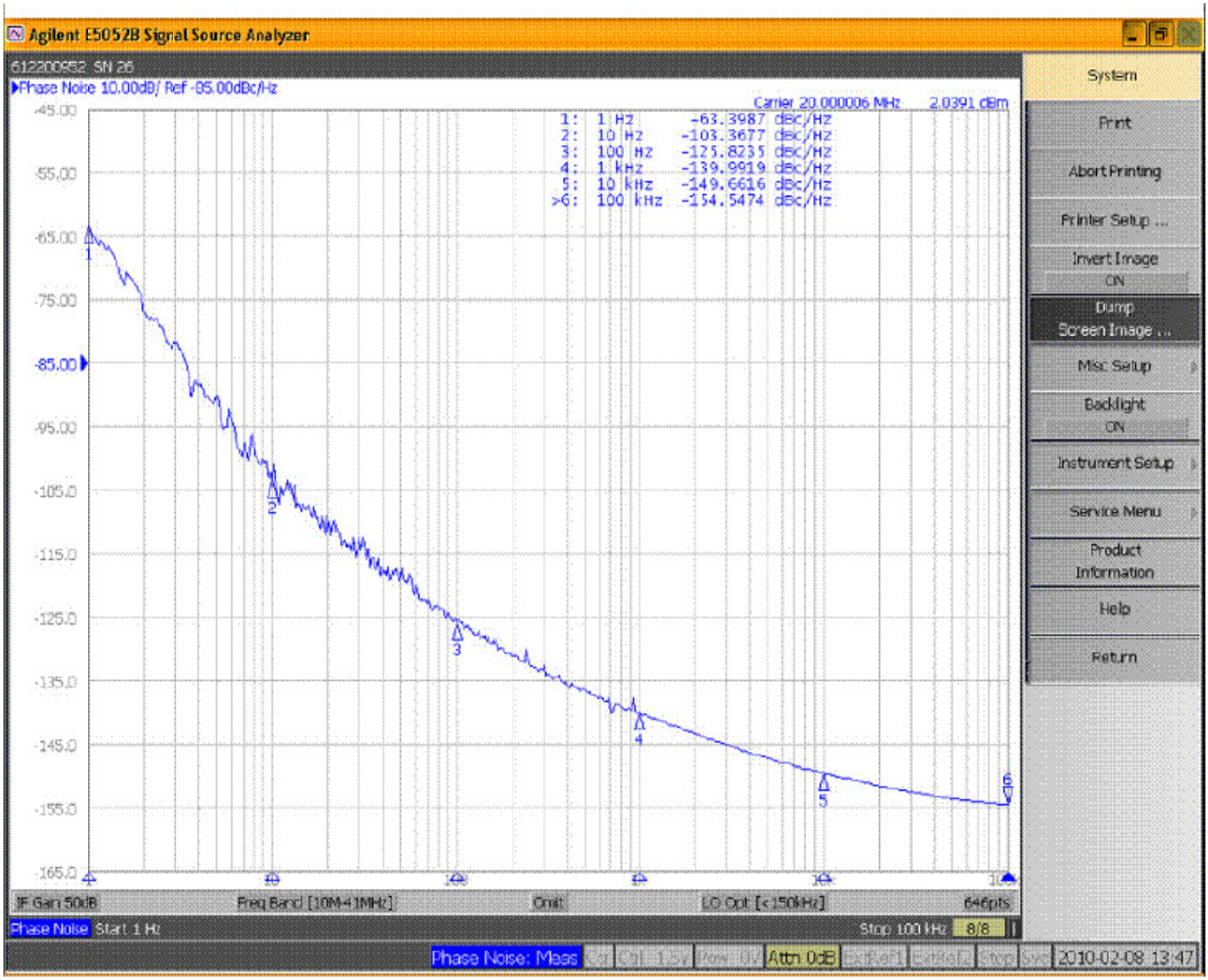
Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
Frequency Stabilities[1]					
vs. operating temperature range (referenced to +25°C)	-2.0 -1.0 -0.5 -0.28		+2.0 +1.0 +0.5 +0.28	ppm ppm ppm ppm	-40… +85°C -40… +85°C -20… +70°C 0… +50°C
Initial Tolerance vs. supply voltage change vs. load change vs. aging / 1 year vs. aging	-1.0 -0.1 -0.2	 ±1 	+1.0 +0.1 +0.2 4.0	ppm ppm ppm ppm ppm	at time of shipment, nominal EFC Vs ± 5% Load ± 10% @ +40°C for 15 years
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	
Current consumption			35	mA	Depends on frequency
RF Output					

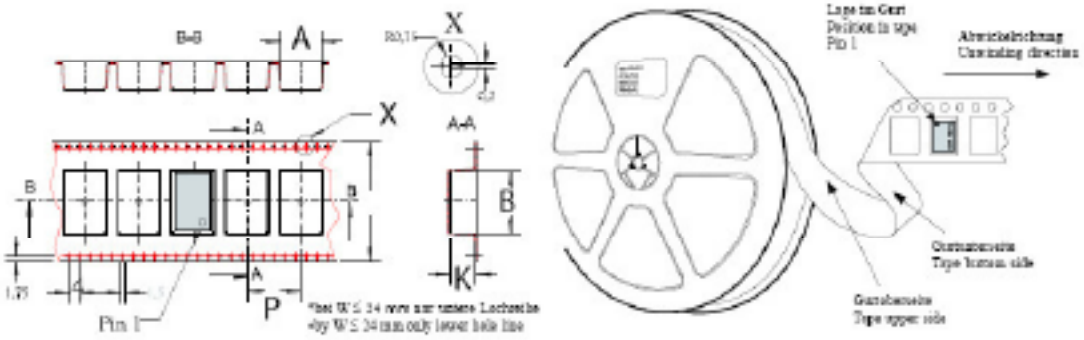
Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
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
Signal		Clipped Sinewave			
Level		1		Vpp	with Nominal Load
Load R		10		kohm	
Load C		10		pF	
Frequency Tuning (EFC)					
Tuning Range		Fixed; No adjust			
Tuning Range	±5.0			ppm	
Tuning Slope		Positive			
Control Voltage Range	0.0		Vs	VDC	
Freq. control input impedance	10			kohm	
Additional Parameters[1]					
Phase Noise[3] (@ 20 MHz - no vibration)		-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
G-Sensitivity		0.2		ppb/g	per axis
Shock					MIL-STD-202G; Method 213B; Test Condition B
Vibration Random					MIL-STD-202G; Method 214A; Test Condition I-F
Vibration Sine					MIL-STD-202G, METHOD 204D, Test Condition A
Thermal Cycling					MIL-STD-202, METHOD 107, Test Condition A
Absolute Maximum Ratings					
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	

PhaseNoise Plot:



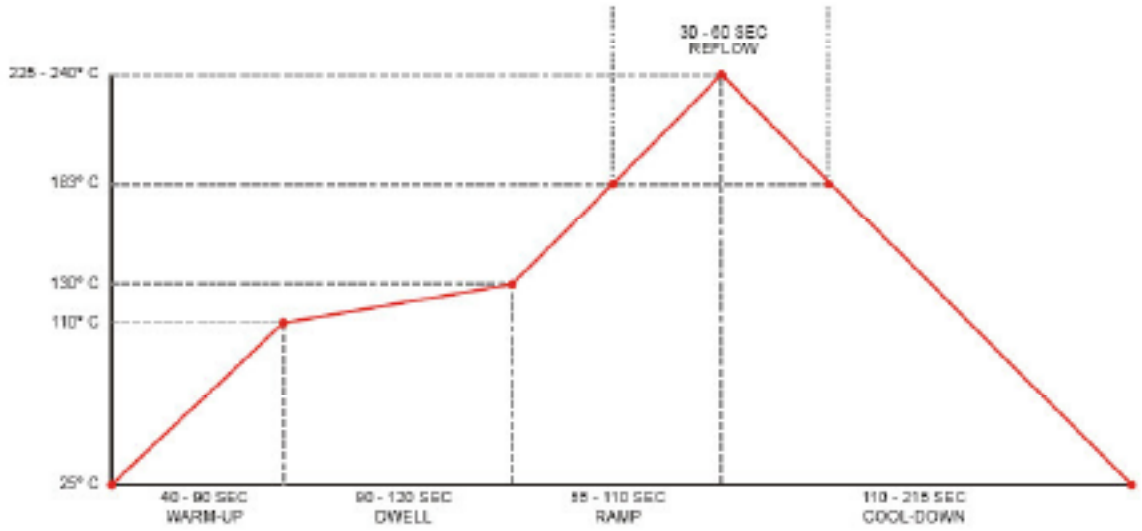
Standard Shipping Method



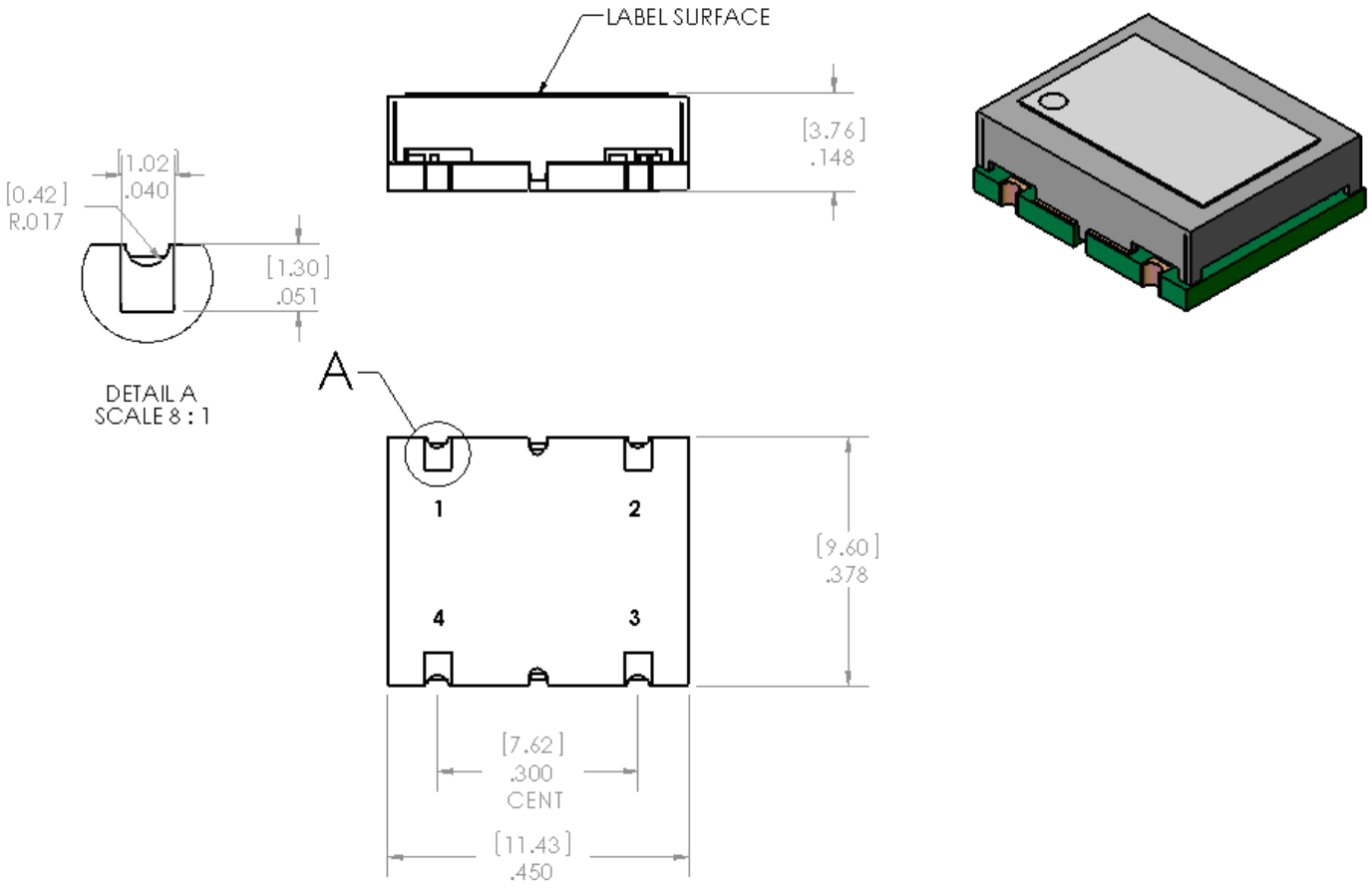
Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P

Recommended Reflow Profile



Outline Drawing / Enclosure



PIN NUMBERS SHOWN FOR REFERENCE ONLY

Dimensions in inches (mm)

TX-550 Pin Connections	
1	Electronic Frequency Control (EFC)
2	Ground
3	RF Output
4	Supply

Ordering Information

TX - 550 0 - D A T - 106 A - 10M0000000

- **Product Family**
  TX: TCXO
- **Package**
  9 x 11 mm
- **Height**
  0: 0.148”
- **Supply Voltage**
  D: 5 Vdc
  E: 3.3 Vdc
  G: 2.8Vdc
- **RF Output Code**
  A: HCMOS
  F: Sinewave, clipped
- **Temperature Range**
  E: -40°C to +85°C
  J: -20°C to +70°C
  T: 0°C to +70°C
- **Stability Code**
  206: ±2.0ppm
  106: ±1.0ppm
  507: ±0.5ppm
  287: ±0.28ppm
  466: ±4.6ppm (Stratum3)
- **Tuning Option**
  A: No Tuning
  B: Electrical Tuning
- **Frequency**

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.

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2-18-2014 jar