

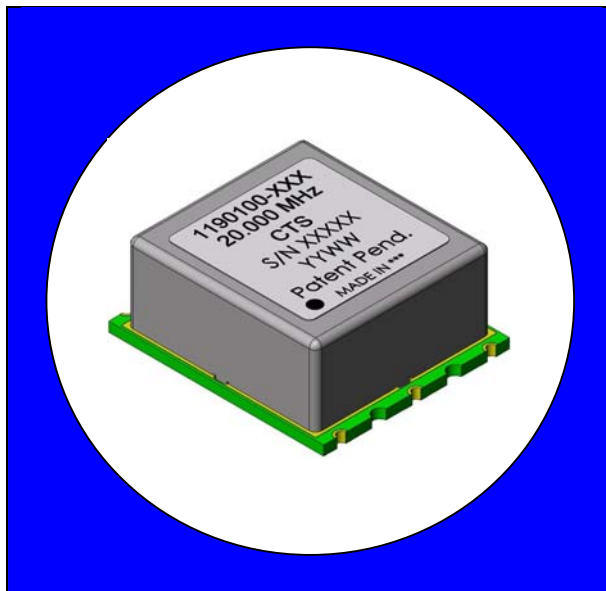
FEATURES

- Industry Standard 22 x 25.4mm SMT package
- Compliant to Stratum 3E per GR-1244-Core and GR-253-Core
- 20 MHz
- 3.3V or 5.0V operation
- Low Phase Noise
- Tape and Reel Packaging
- Fully compliant to RoHS Directive 2002/95/EC

DESCRIPTION

The CTS model 1190100 is a low cost, small size, high performance OCXO. The high quality CTS Quartz Crystal used in this OCXO offers high stability and low phase noise, making it the ideal choice for any telecommunications system.

Applications: Telecom Switching
Wireless Communication
Timing over Packet



ELECTRICAL SPECIFICATIONS

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Operating Conditions					
Operating Temperature Range	T _{OP}	-40	-	+85	°C
Supply Voltage (Vcc)	3.3V	3.135	3.3	3.465	Vdc
	5.0V	4.750	5.0	5.250	
Power Consumption	during warm up	-	-	4.0	W
	steady state @ 25°C	-	-	1.5	W
Load	Output to Ground	5	10	15	pf
Frequency Stability					
Frequency	f _{NOM}	-	20	-	MHz
Calibration	Δf/f _{NOM} ; T _A =25°C; at time of shipment @ 1.4V Vc	-	±75	± 200	ppb
vs Temperature	Over any 40°C change within: C) = -20°C to +70°C I) = -40°C to +85°C	-	7	10	ppb, pk-pk
vs Supply Voltage	± 5%	-	± 1	± 3	ppb
Aging	at time of shipment	-	-	± 1	ppb/day
	first year	-	-	± 100	ppb/year
	10 years	-	-	± 700	ppb/ 10years
24-Hour Holdover Stability	Inclusive of 40°C temp change and 24 hours aging drift	-	-	11	ppb, pk-pk
Total Free-Run Accuracy	Under all operating conditions for 10 years			±2.5	ppm

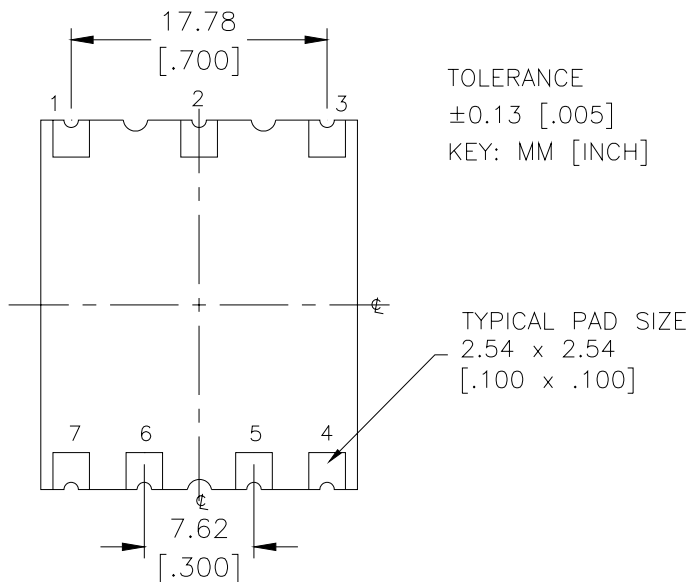
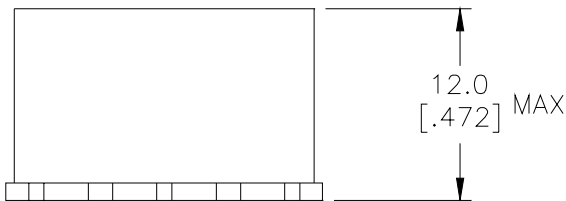
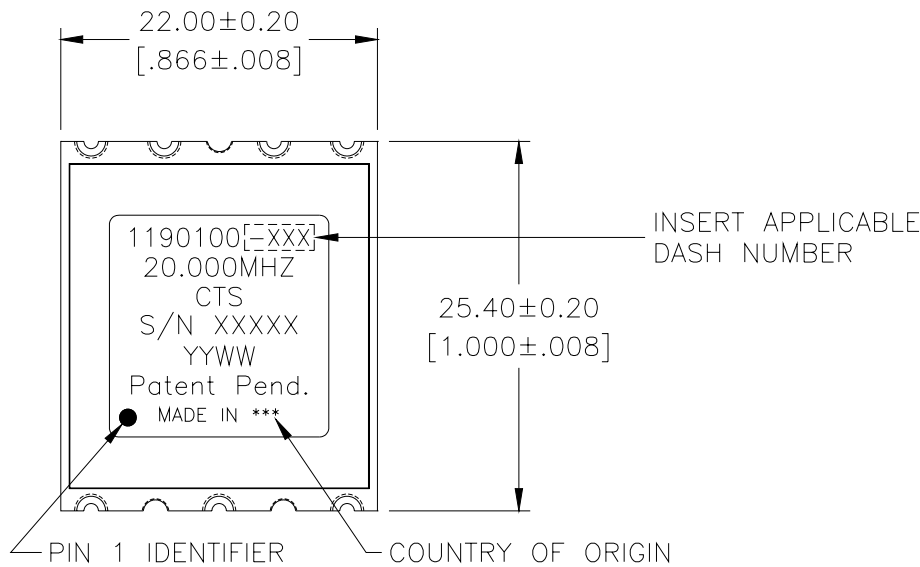
Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Frequency Stability continued					
Drift	24 hours at constant temperature ($\pm 3^{\circ}\text{C}$ per Telcordia GR-1244-CORE)	-	± 1	± 2	ppb
Short Term Stability ADEV (in still air)	1.0 sec	-	0.01	0.02	ppb
	10 sec	-	0.01	0.03	ppb
	100 sec	-	0.02	0.05	ppb
	1000 sec	-	0.05	0.1	ppb
	10,000 sec	-	0.07	0.2	ppb
Time Deviation TDEV (in still air)	10,000 sec	-	400	700	nsec
Warm-Up Time	$T_A=25^{\circ}\text{C}$; to within 50ppb of freq. @ 30 min	-	-	5	minutes
Phase Noise					
	10 Hz	-	-120	-110	dBc/Hz
	100 Hz	-	-135	-130	dBc/Hz
	1 kHz	-	-145	-140	dBc/Hz
	10 kHz	-	-152	-145	dBc/Hz
Spurious					
		-	-	-70	dBc
Output Parameters					
Output Signal Square Wave		HCMOS			
Amplitude	V_{OL}	-	-	$10\%V_{CC}$	Vdc
	V_{OH}	$90\%V_{CC}$	-	-	
Rise / Fall Times	10% to 90% @ 10pf load	-	-	8	ns
Duty Cycle	@ 50 % of output signal	45	50	55	%

Options and Part Number :

Dash No.	Supply Voltage	Operating Temp. Range	Part Number
-001	+5.0 Vdc	-20°C to +70°C	1190100-001
-002	+5.0 Vdc	-40°C to +85°C	1190100-002
-003	+3.3 Vdc	-20°C to +70°C	1190100-003
-004	+3.3 Vdc	-40°C to +85°C	1190100-004

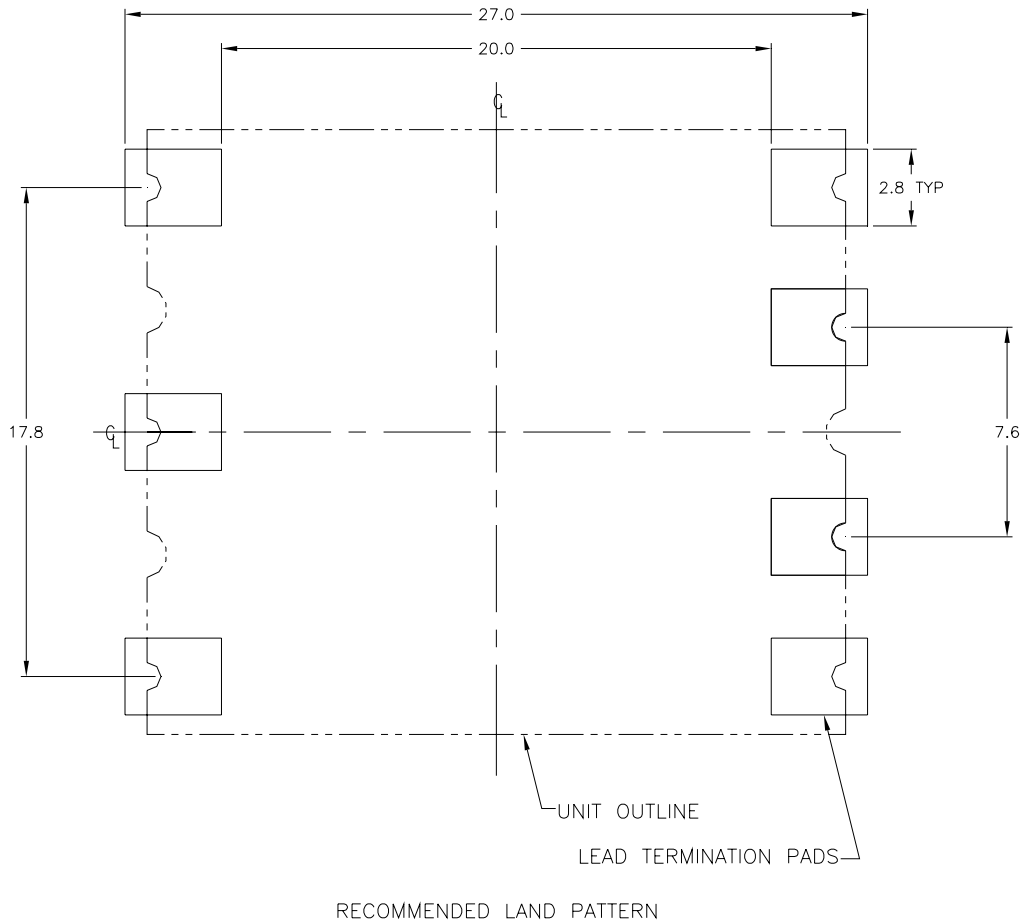
Environmentals	
Soldering	Maximum reflow temperature, 245°C for 10 seconds, 240°C for 20 seconds, per IPC/JEDEC J-STD-020C
MSL	Level 1
RoHS	Lead-Free. Fully compliant to RoHS Directive 2002/95/EC
Shock :	Per IEC60068-2-27, test Ea. Oscillators subjected to 1000 m/s ² , half-sine, pulse width of 6 ms, three shocks in each of 6 directions of 3 perpendicular planes.
Sinusoidal Vibration :	Per IEC60068-2-6, test Fc. Sine vibration: 10 Hz to 55 Hz with a double amplitude of 0.75mm for 30 minutes in each of three perpendicular directions
Random Vibration :	5.35 G's RMS. 20 to 200 Hz, per MIL-STD-202F, Method 214, Test Condition 1A, 15 minutes each axis.
Seal :	Non hermetic
Marking Permanency :	per MIL-STD-202F, Method 215J.
Attachment Method :	SMT
Storage Temperature Range:	-40°C to +85°C

MECHANICAL SPECIFICATIONS PACKAGE DRAWING

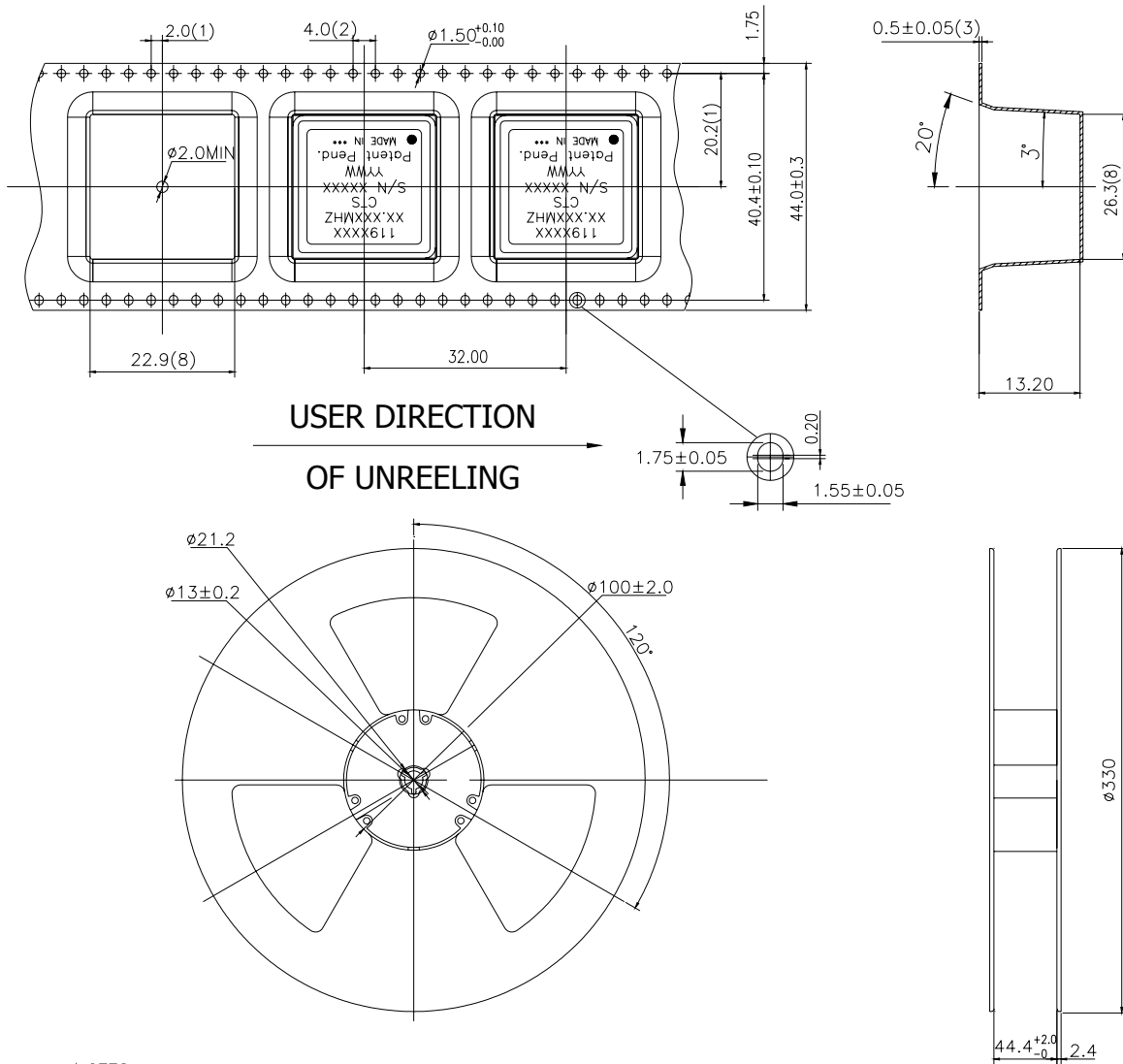


PAD	FUNCTION
1	N/C
2	N/C
3	Supply Voltage - Vcc
4	RF Output
5	N/C
6	N/C
7	Ground/Case

PAD TERMINATION FINISH: GOLD FLASH, <10 MICRO INCH, OVER Ni PLATED Cu.



Packing: Tape and Reel



NOTES:

1. MEASURED FROM THE CENTERLINE OF SPROCKET HOLE TO CENTERLINE OF THE POCKET HOLE AND FROM THE CENTERLINE OF SPROCKET HOLE TO CENTERLINE OF THE POCKET
2. CUMULATIVE TOLERANCE OF 10 SPROCKET HOLES IS ± 0.20
3. THIS THICKNESS IS APPLICABLE AS MEASURED AT THE EDGE OF THE TAPE
4. MATERIAL:BLACK POLYSTYRENE
5. DIM IN MM
6. ALLOWABLE CAMBER TO BE 1mm PER 100mm IN LENGTH, NON-CUMULATIVE OVER 250mm
7. UNLESS OTHERWISE SPECIFIED, TOLERANCE ±0.10
8. MEASUREMENT POINT TO BE 0.3 ABOVE THE INDICATED POINT.
9. SURFACE RESISTIVITY: FROM 10^5 TO 10^8 OHMS/SQ
10. MAXIMUM QUANTITY 50 UNITS IN ONE TAPE&REEL
11. UNITS: MM

