

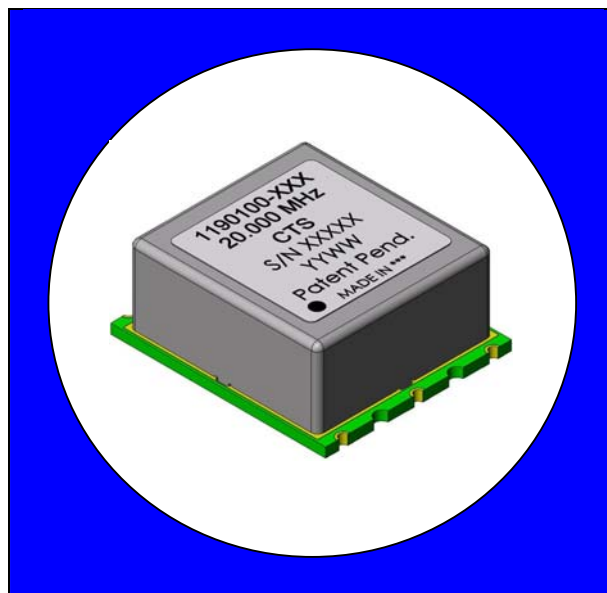
FEATURES

- 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 jitter/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
	5.0 V	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	-	±75	± 200	ppb
vs Operating Temperature	Over any 40°C change within: C range = -20°C to +70°C	-	7	10	ppb, pk-pk
	I range = -40°C to +85°C	-	± 1	± 3	
vs Supply Voltage	± 5%	-	± 1	± 3	ppb
Aging	Per day, at time of shipment	-	±0.5	± 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 (after 8 hours operation following 24 hours off – see Note 1)	-	-	11	ppb, pk-pk
Total Free-Run Accuracy	Under all operating conditions for 10 years	-	-	±2.5	ppm



1190100-XXX

OCXO 22 X 25.4 mm

Stratum 3E

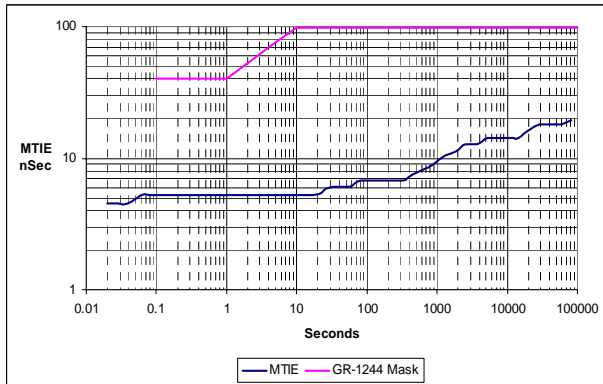
Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Frequency Stability continued					
Drift	24 hours, at constant temperature (after 8 hours operation following 24 hours off – see Note 1)	-	-	±1	ppb
Short Term Stability ADEV (in still air)	1.0 sec	-	< 0.01	0.02	ppb
	10 sec	-	0.01	0.03	ppb
	100 sec	-	0.02	0.05	ppb
	1000 sec	-	0.05	0.1	ppb
	10,000 sec	-	0.07	0.2	ppb
Wander Generation	MTIE and TDEV per Stratum 3E requirements of Telcordia GR-1244-CORE and GR-253-CORE				
Warm-Up Time	T _A =25°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	%

Note 1: 8 hours operation required if off for 24 hours
 24 hours operation required if off for up to 1 week
 48 hours operation required if off for up to 1 month

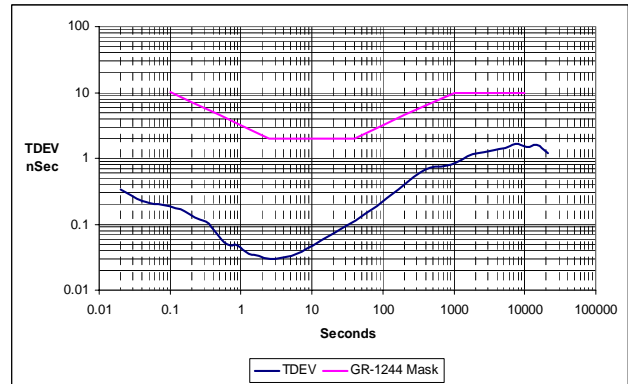
Options and Part Number :

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

Typical Wander Generation MTIE performance



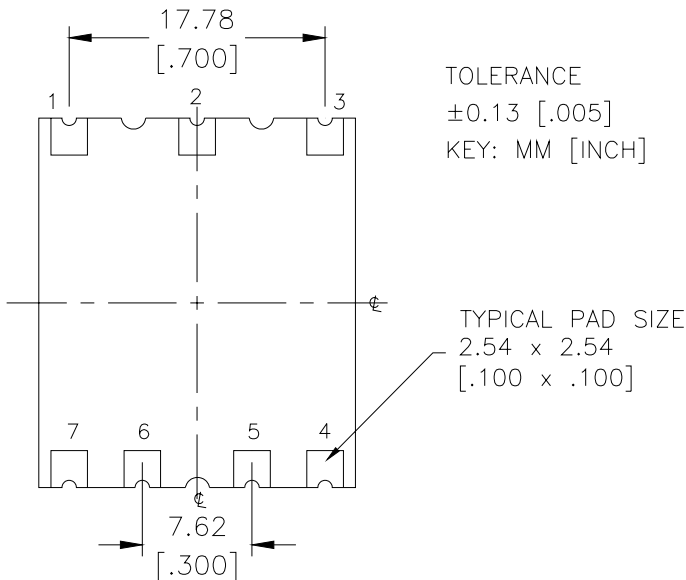
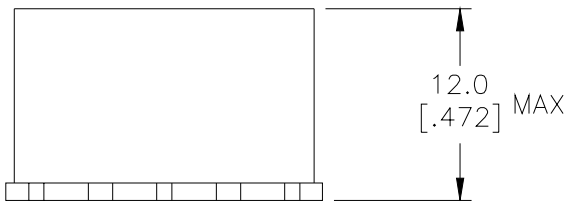
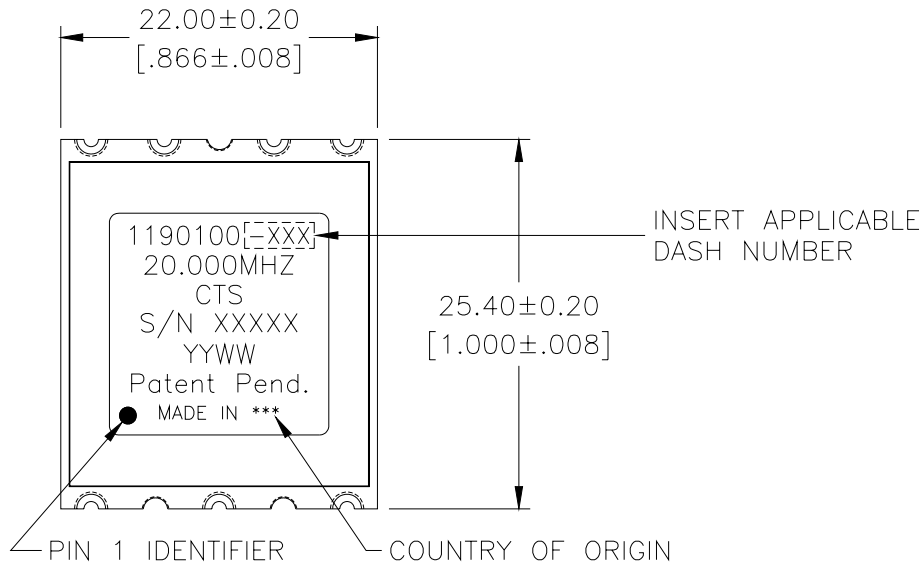
Typical Wander Generation TDEV performance



Wander Generation and Holdover Test Report available upon request.

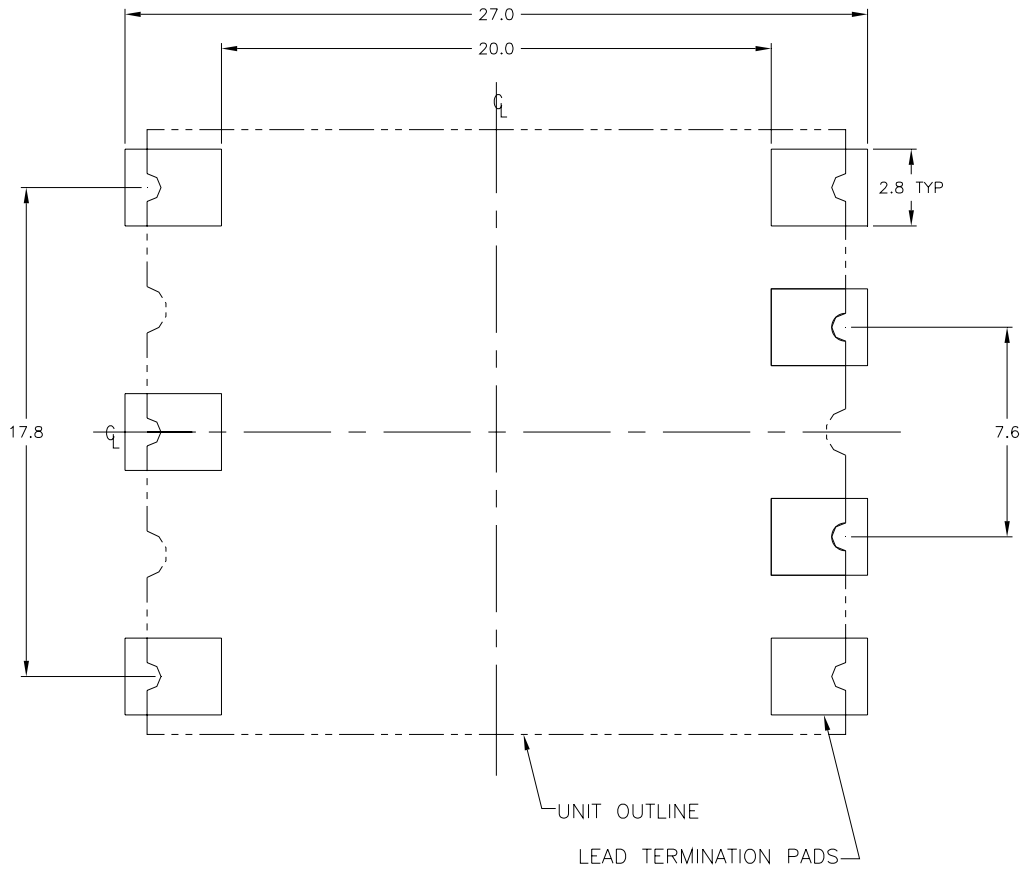
Environmentals	
Soldering	Maximum reflow temperature, 245°C for 10 seconds, 240°C for 20 seconds, per IPC/JEDEC J-STD-020C
MSL	Level 1
RoHS	Lead-Free. Fully compliant to RoHS Directive 2002/95/EC
Shock :	500 G's, 1msec, 5 shocks in each of 6 directions
Sinusoidal Vibration :	10 Hz to 55 Hz with a double amplitude of 0.75mm, 10 g's peak from 55 Hz to 2000Hz, for 30 minutes in each of three perpendicular directions
Random Vibration :	5.35 G's RMS. 20 to 500 Hz, per MIL-STD-202F, Method 214, 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



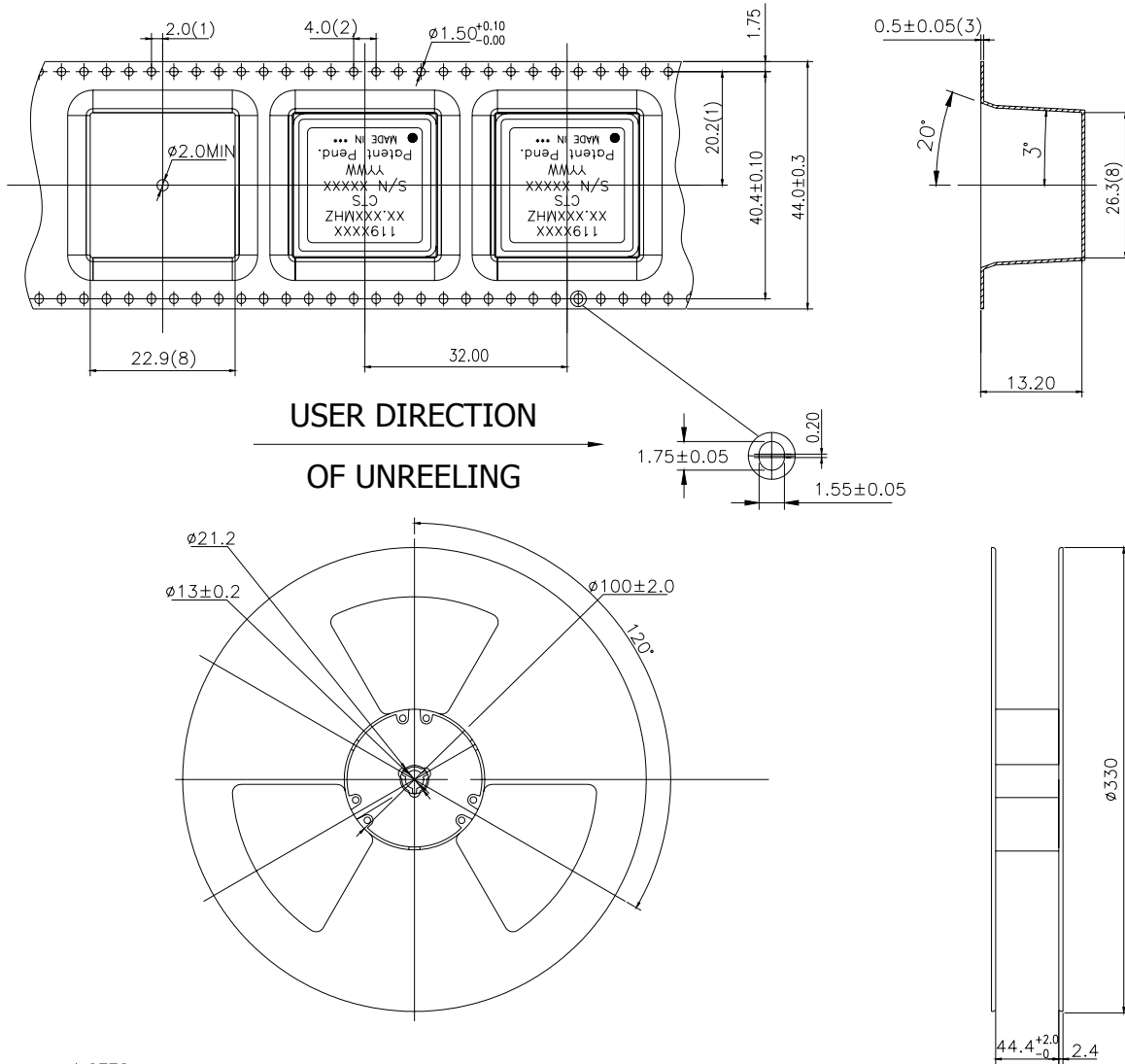
PAD	FUNCTION
1	N/C
2	N/C
3	Supply Voltage - Vcc
4	RF Output
5	N/C
6	N/C
7	Ground/Case

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



RECOMMENDED LAND PATTERN

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

