

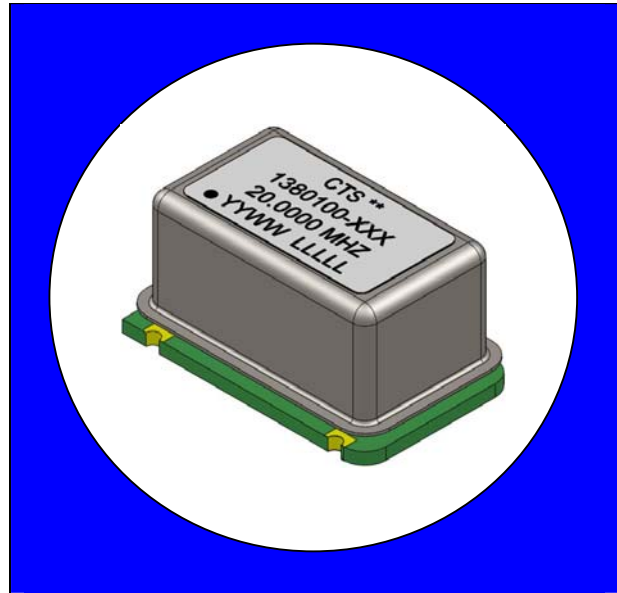
FEATURES

- Compliant to Stratum 3E of GR-1244-CORE
- Surface Mount Dual-In-Line Package
- 20 MHz
- 3.3V operation
- Low Jitter/Phase Noise
- Tape and Reel Packaging
- Fully compliant to RoHS Directive 2002/95/EC

DESCRIPTION

The CTS model 1380100 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)	±5%	3.135	3.3	3.465	Vdc
Power Consumption	during warm up	-	1.8	2.5	W
	steady state @ 25°C	-	0.75	1.0	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	-	±300	± 500	ppb
vs Operating Temperature	-20°C to +70°C	-	7	10	ppb, pk-pk
	-40°C to +85°C	-			
vs Supply Voltage	± 5%	-	± 1	± 2	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 operating temp 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



1380100-XXX

SMT DIL OCXO

Stratum 3E

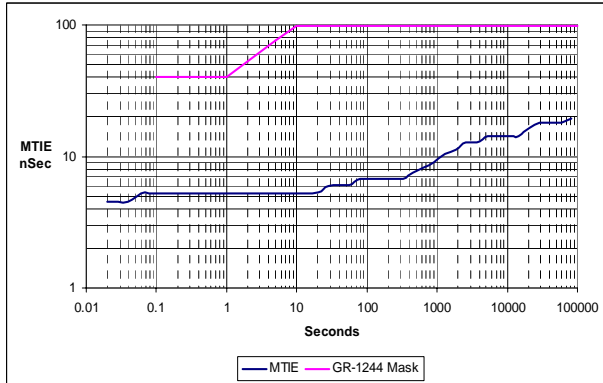
Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Frequency Stability continued					
Drift	24 hours, at constant temperature (after 8 hours operation following 24 hours off – see Note 1)	-	-	±1	ppb
Short Term Stability ADEV (in still air)	1.0 sec	-	< 0.01	0.02	ppb
	10 sec	-	0.01	0.03	ppb
	100 sec	-	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				
Warm-Up Time	T _A =25°C; to within 10ppb of freq. @ 30 min	-	-	5	minutes
Phase Noise					
	10 Hz	-	-110	-	dBc/Hz
	100 Hz	-	-130	-	dBc/Hz
	1 kHz	-	-140	-	dBc/Hz
	10 kHz	-	-148	-	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	-	3	5	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

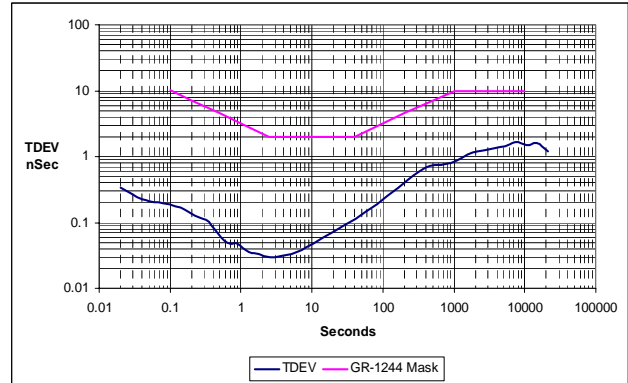
Options and Part Number:

Dash No.	Package	Operating Temp. Range	Part Number
-001	Surface Mount (Fig 1)	-20°C to +70°C	1380100-001
-002	Surface Mount (Fig 1)	-40°C to +85°C	1380100-002
-003	Through-Hole (Fig 2)	-20°C to +70°C	1380100-003
-004	Through-Hole (Fig 2)	-40°C to +85°C	1380100-004

Typical Wander Generation MTIE performance



Typical Wander Generation TDEV performance



Wander Generation and Holdover Test Report available upon request.

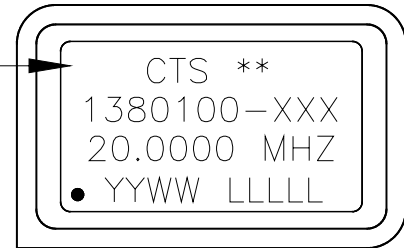
Mechanical and Environmental	
Soldering	Maximum reflow temperature, 245°C for 10 seconds, 240°C for 20 seconds, per IPC/JEDEC J-STD-020C
MSL	Level 1
RoHS	Lead-Free. Fully compliant to RoHS Directive 2002/95/EC
Shock :	500 G's, 1msec, 5 shocks in each of 6 directions
Sinusoidal Vibration :	10 Hz to 55 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 :	Hermetic
Marking Permanency :	per MIL-STD-202F, Method 215J.
Packaging :	Tape and Reel for Surface Mount Package; Bulk Pack in Foam for Thru-Hole Package
Storage Temperature Range:	-40°C to +85°C

MECHANICAL SPECIFICATIONS

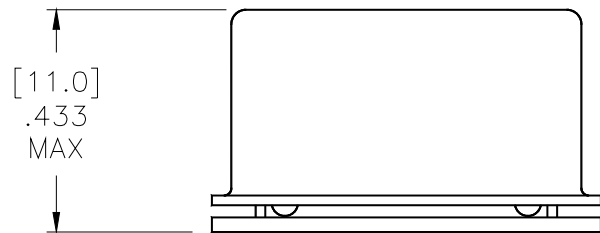
Figure 1 - PACKAGE DRAWING – Surface Mount

MARKING THIS SURFACE

- ** = MFG SITE CODE
- XXX = INSERT APPLICABLE DASH NUMBER
- YYWW = DATE CODE
- LLLLL = LOT CODE (OPTIONAL)



PIN / PAD	FUNCTION
1	N/C
7	0V & CASE GROUND
8	OUTPUT
14	Vcc



KEY: [MM]
INCH

TOLERANCE: $[\pm .25]$
 $\pm .010$

$[\phi 1.09]$
 $\phi .043$ CASTELLATION
(4) PLACES

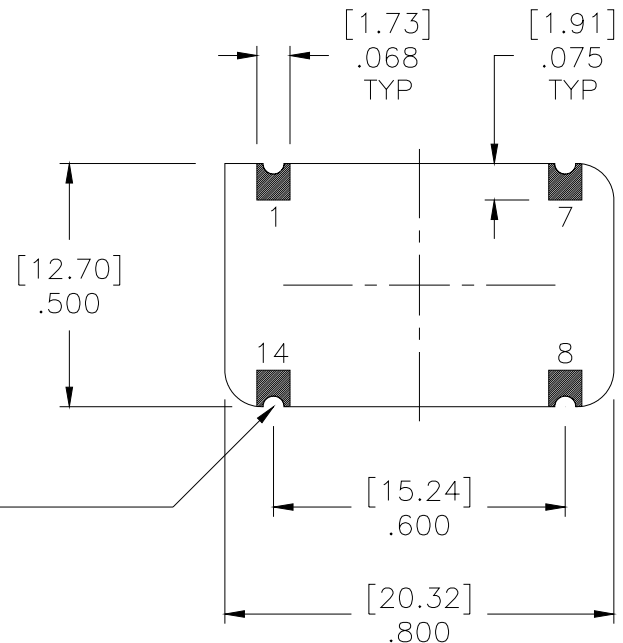
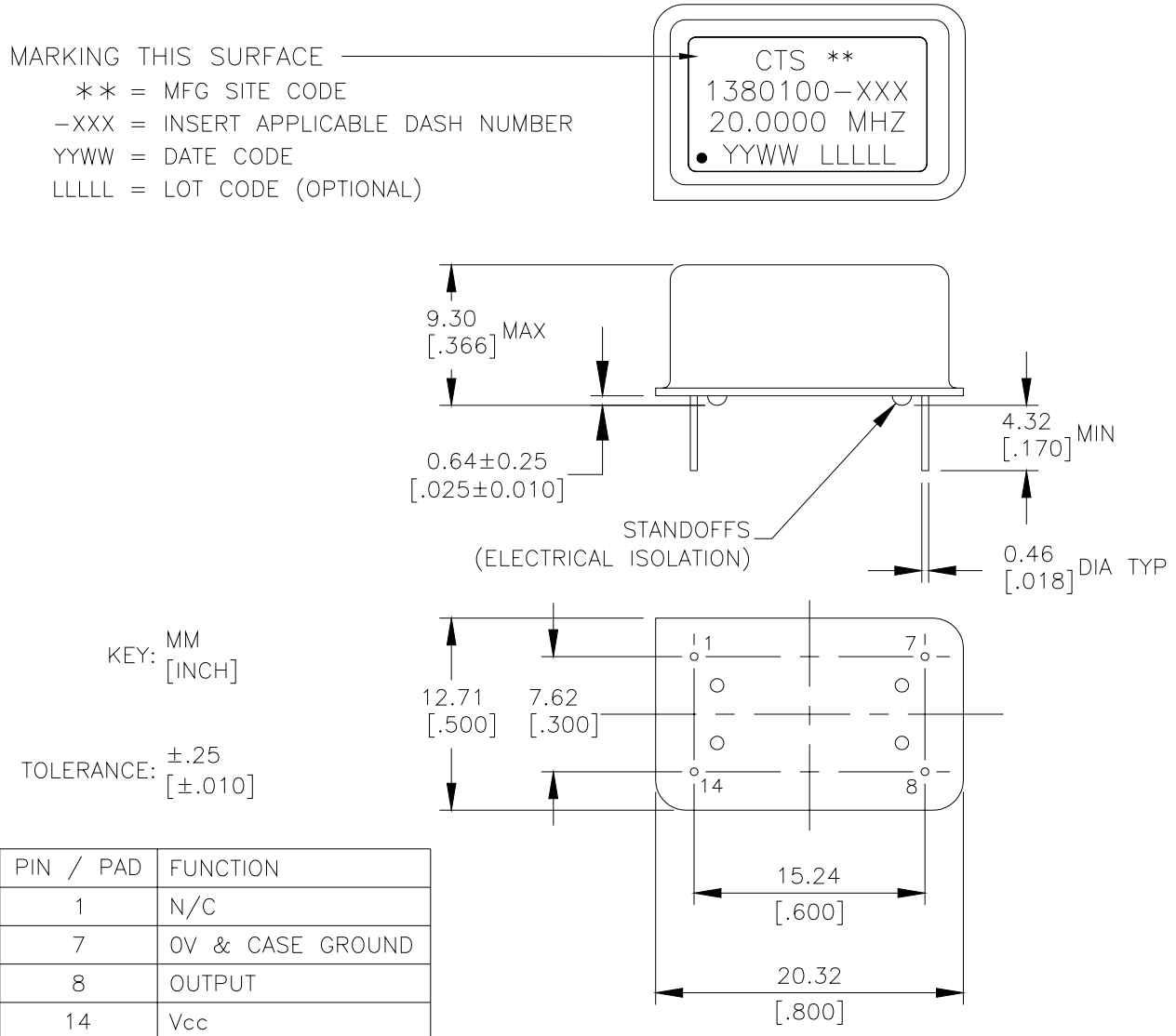
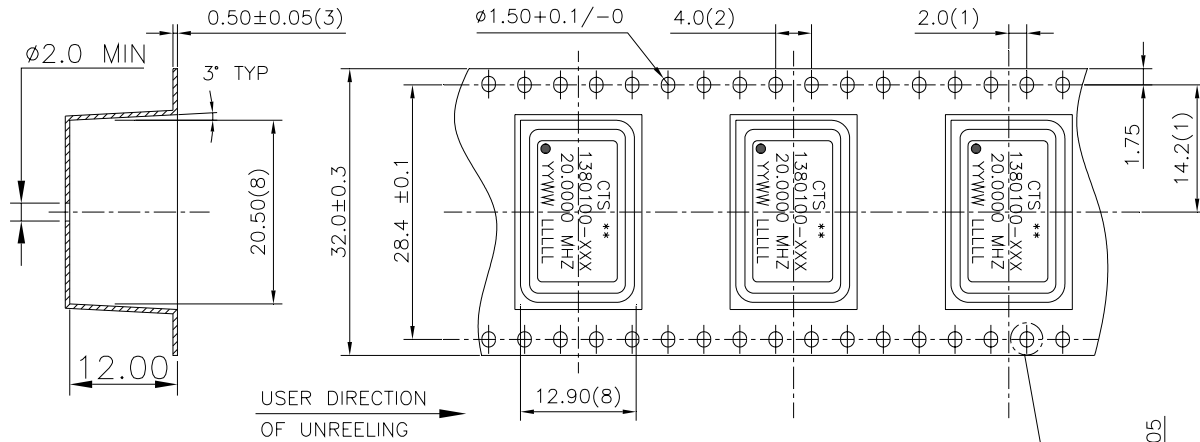


Figure 2 - PACKAGE DRAWING – Through Hole



Packing: Tape and Reel



NOTE:

- (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 FROM BOTTOM POCKET
- (9) SURFACE RESISTIVITY: FROM 10^5 TO 10^{11} OHMS/SO

