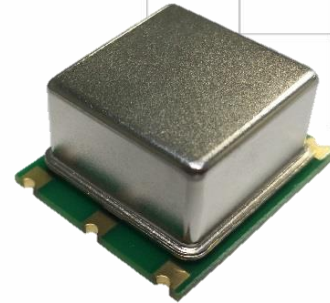


1198004-48M000

Reference Oscillator for Renesas Chipset P/N 8A34001 System Synchronizer for IEEE 1588

Features

- 48 MHz
- Low phase noise
- -40/+85°C, Industrial temp range
- 3.3Vdc operation
- Low aging rate
- 25.4 x 22 mm SMD package



Dimensions: 25.4 x 22 x 12.7 mm

Description

CTS model 1198004-48M000 is a low cost, small size, high performance OCXO. The high quality CTS quartz crystal used in this OCXO offers high stability and low aging rates making it ideal for any telecommunications system holdover application.

Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Operating Conditions					
Operating Temperature Range	T_{OP}	-40	-	+85	°C
Supply Voltage	$V_{CC} \pm 5\%$	3.135	3.300	3.465	Vdc
Power Consumption	During warm up	-	-	3.0	W
	Steady State; $T_A = 25^\circ\text{C}$	-	0.95	1.5	W
Load	Output to ground	5	10	15	pF
Frequency Stability					
Frequency	F_{NOM}		48.000000		MHz
Calibration	$\Delta F/F_{NOM}$; $T_A = 25^\circ\text{C}$; at time of shipment	-	± 300	± 500	ppb
Temperature Stability	Ref to $(F_{MAX} - F_{MIN})/2$	-	-	± 20	ppb
Frequency vs. Voltage	$V_{CC} \pm 5\%$	-	-	± 3	ppb
Frequency vs. Load	For a 10% change	-	-	± 3	ppb
Aging	Per day, at time of shipment;	-	-	± 1	ppb/day
	Per year	-	-	± 100	ppb/yr
	10 years	-	-	± 0.8	ppm



Electrical Specifications (Continued)

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Allan Deviation	In still air @ 1.0 sec tau	-	0.01	-	ppb
Warm-up time	T _A =+25°C; to within 50 ppb of frequency @ 30 min.	-	-	4	min

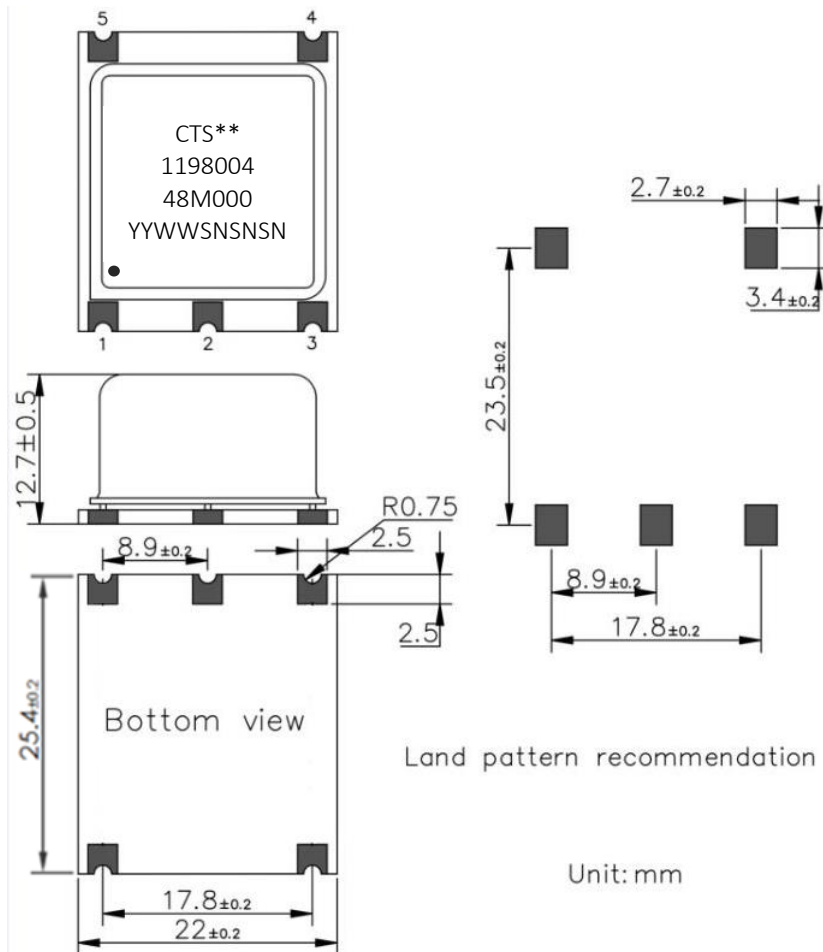
Output Parameters

Output Signal	LVCMOS				
Amplitude	V _{OL}	-	-	10% V _{CC}	Vdc
	V _{OH}	90% V _{CC}	-	-	
Rise/Fall Times	10% to 90% @ 15pf load	-	2	4	ns
Duty Cycle	@50% of output signal	45	50	55	%
Phase Noise	1Hz	-	-70	-	dBc/Hz
	10Hz	-	-102	-	
	100Hz	-	-141	-	
	1KHz	-	-152	-	
	10KHz	-	-159	-	
	100KHz	-	-162	-	
Spurious	1MHz	-	-163	-	dBc
		-	-	-70	

Mechanical and Environmental

Soldering	Maximum reflow temperature, 245°C for 10 seconds, 240°C for 20 seconds per IPC/JEDEC J-STD-020D Note: Not intended for inverted reflow
MSL	Level 1
RoHS	Lead Free. Fully compliant to RoHS Directive 2011/65/EU
Shock	500 G's, 1 msec, 5 shocks in each of 6 directions
Sinusoidal Vibration	10 to 55 Hz with double amplitude of 1.5mm, 10 g's peak from 55 to 2000 Hz. 30 minutes in each of three mutually perpendicular axes
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
Storage Temperature	-40 to +95°C

Mechanical Specifications



Marking

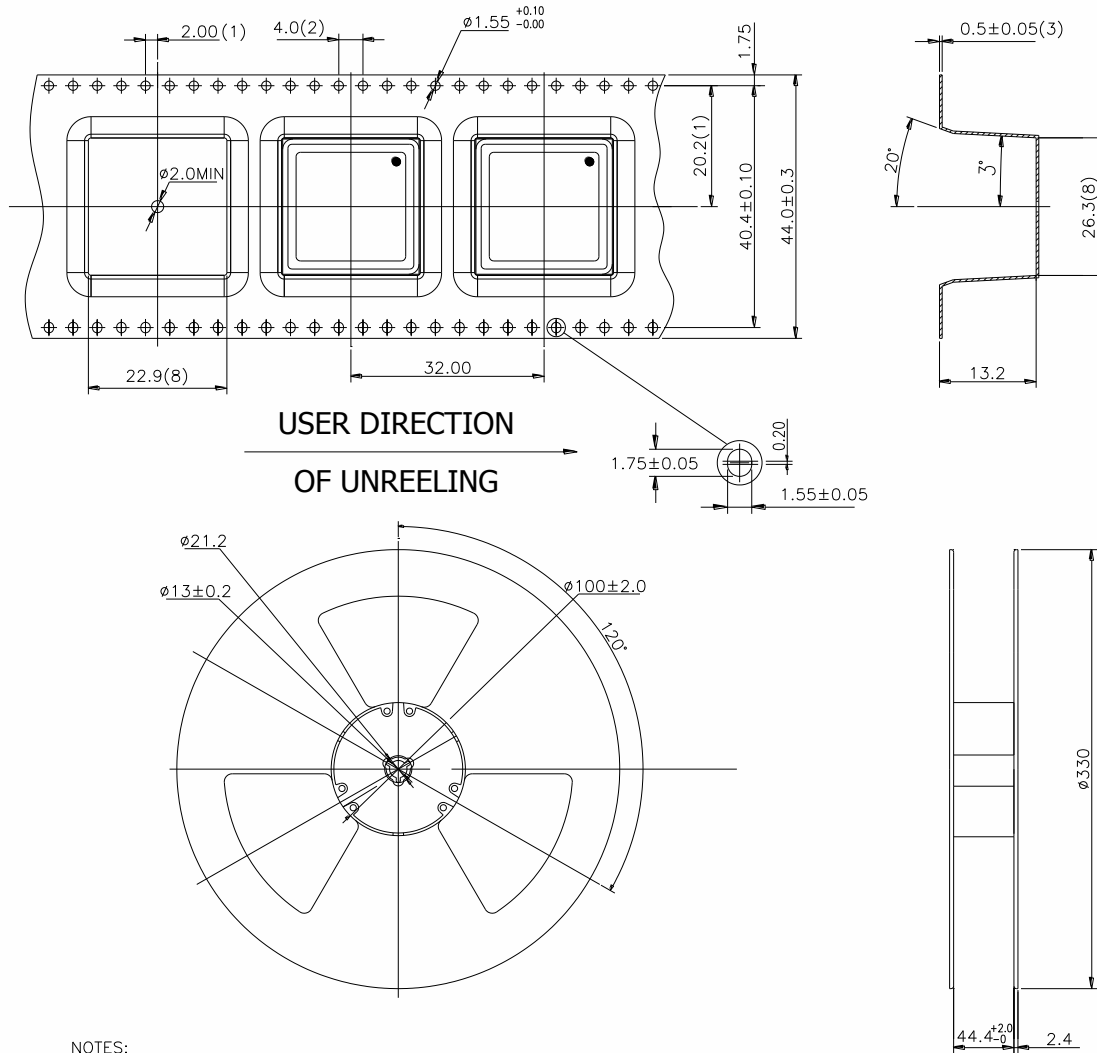
**	=	Mfg Site Code
YYWW	=	Date Code
SNSNSN	=	Serial Number

Pin Assignments

Pin/Pad	Function
1	NC
2	NC
3	V _{CC}
4	Output
5	Ground

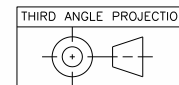
Pad Termination Finish: Gold flash <10 μinch, over Ni plated Cu

Packing: Tape and Reel

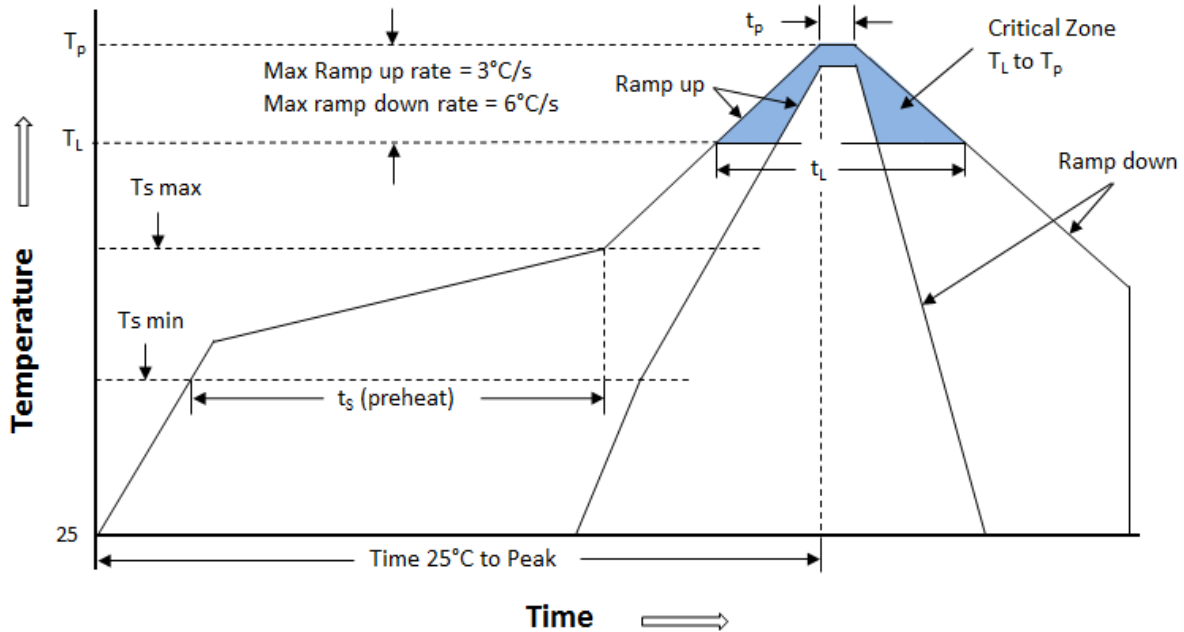


NOTES:

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 10^7 OHMS/SQ
10. MAXIMUM QUANTITY 50 UNITS IN ONE TAPE&REEL
11. UNITS: MM



Recommended Solder Reflow Profile per IPC/JEDEC J-STD-020D



Note: The temperatures shown below represent the device body temperature

Ts max to T_L (Ramp-up Rate)	3°C/second max
Preheat	
Temperature Min($T_s \text{ Min}$)	150°C
Temperature Typical($T_s \text{ Typ}$)	175°C
Temperature Max.($T_s \text{ Max}$)	200°C
Time(t_s)	60-120 seconds
Ramp-up Rate(T_L to T_p)	3°C/second max
Time Maintained Above:	
--Temperature(T_L)	217°C
--Time(t_L)	60-150seconds
Peak Temperature (T_p)	245°C max for 10 seconds
Time within 5°C of actual peak(t_p)	20 seconds
Ramp-down Rate	6°C/second max
Time 25°C to Peak Temperature (t)	8 minutes max

This product is specified for use only in standard commercial applications. Supplier disclaims all express and implied warranties and liability in connection with any use of this product in any non-commercial applications or in any application that may expose the product to conditions that are outside of the tolerances provided in its specification.