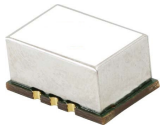
RFMi
BRAND OF AKOUSTIS

XTC4020

100.000000 MHz VCTCXO

RoHS Exemption Approved



SMD 14 x 9 mm

Features:

- Good Frequency Stability
- Good Phase Noise Response
- Moisture Sensitivity Level (MSL) : Level-1

Description and Applications:

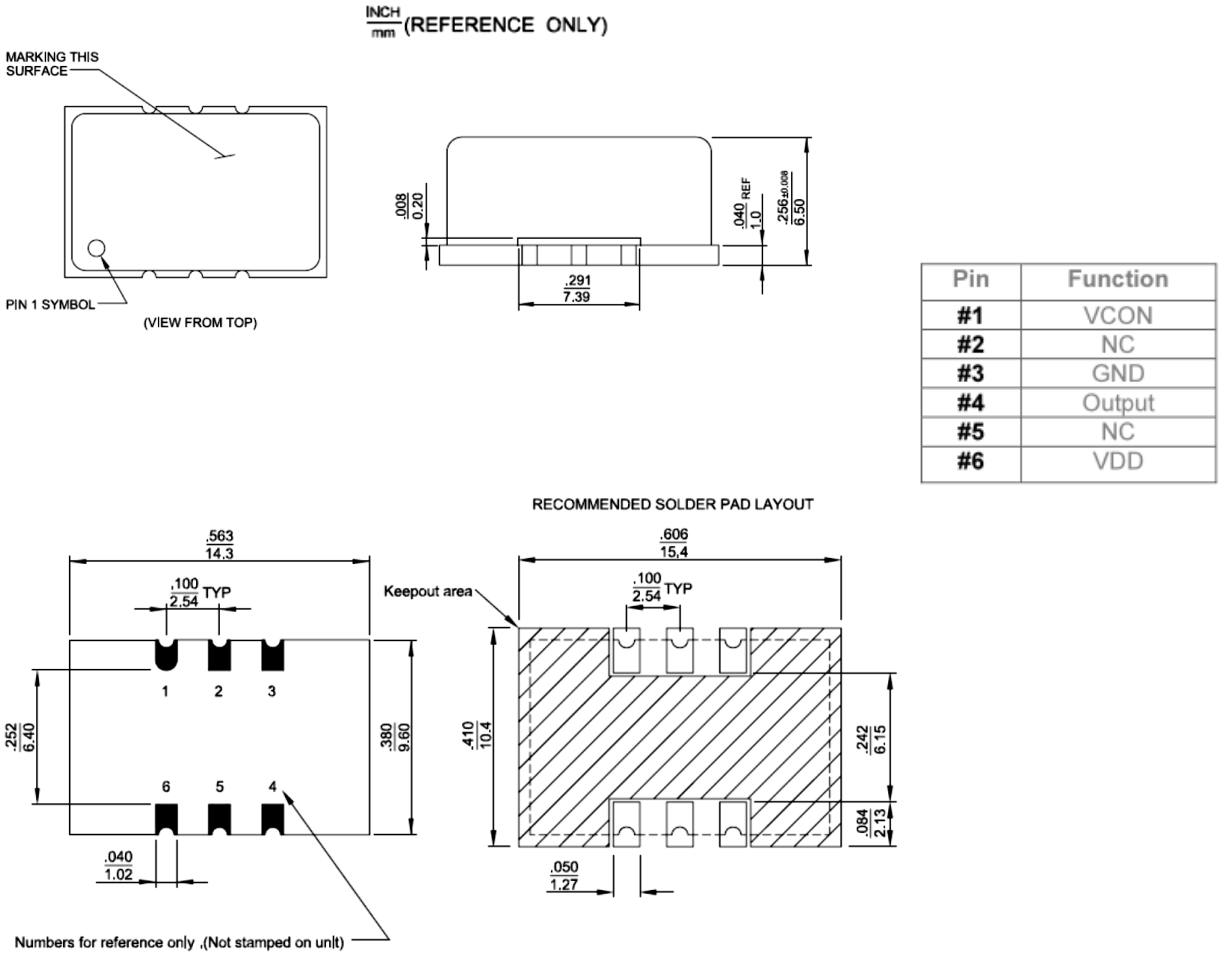
Surface mount 14x9mm VCTCXO for use in wireless communications devices

Electrical Specifications:

XTC4020	**Specifications**
Nominal Frequency, Fo	100.000000 MHz
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-20°C to +70°C
Power Supply Voltage, Vdd	5.0 V+/-5%
Output Waveform	Sinewave
Output power	10 dB typ
Output Load	50 ohm
Power Supply Current, Icc	35 mA max
Duty Cycle	45% ~ 55% Typical
Control Voltage, Vcon	2.5 +/-2.0 V
Frequency Tolerance as received (Vcon=2.5V)	+/- 1.0 ppm max @ 25°C +/- 3°C
Vcon Frequency Control Range (2.5+/-2.0V)	+/-10 ppm min
Linearity	10% max, positive
Frequency Stability a. Vs. Temperature (-20~70°C) b. Vs. Load varied +/-10% c. Vs. Supply Voltage varied Vcc+/-5%	 +/- 1.0 ppm reference to 25°C +/- 0.1 ppm +/- 0.1 ppm
G sensitivity	1.5 ppb/G in the worst axis
Harmonics	-25 dBc max

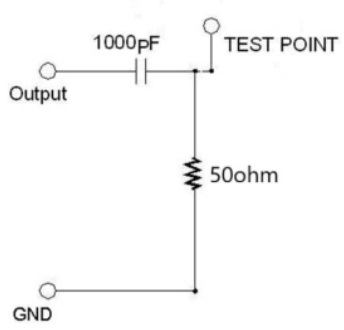
Sub harmonics	-80 dBc max
Vcon input impedance	100 koHm typ
Modulation bandwidth	10 Hz min
Aging	+/-2.0 ppm/ 10 years @25°C
Phase Noise	-85dBc/Hz Max. at 10Hz offset -116dBc/Hz Max. at 100Hz offset -141dBc/Hz Max. at 1kHz offset -149dBc/Hz Max. at 10KHz offset -157dBc/Hz Max. at 100KHz offset
Start –Up Time	2.0 ms max

Mechanical Dimensions:



Pin	Function
#1	VCON
#2	NC
#3	GND
#4	Output
#5	NC
#6	VDD

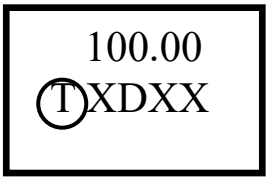
Recommended Circuit

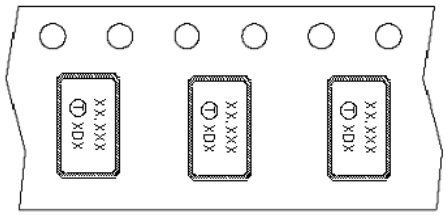


Marking:

Line 1: Customer Frequency (100.00)

Line 2: Logo+ Product Code + Date Code + Traceability Code (X=XX)





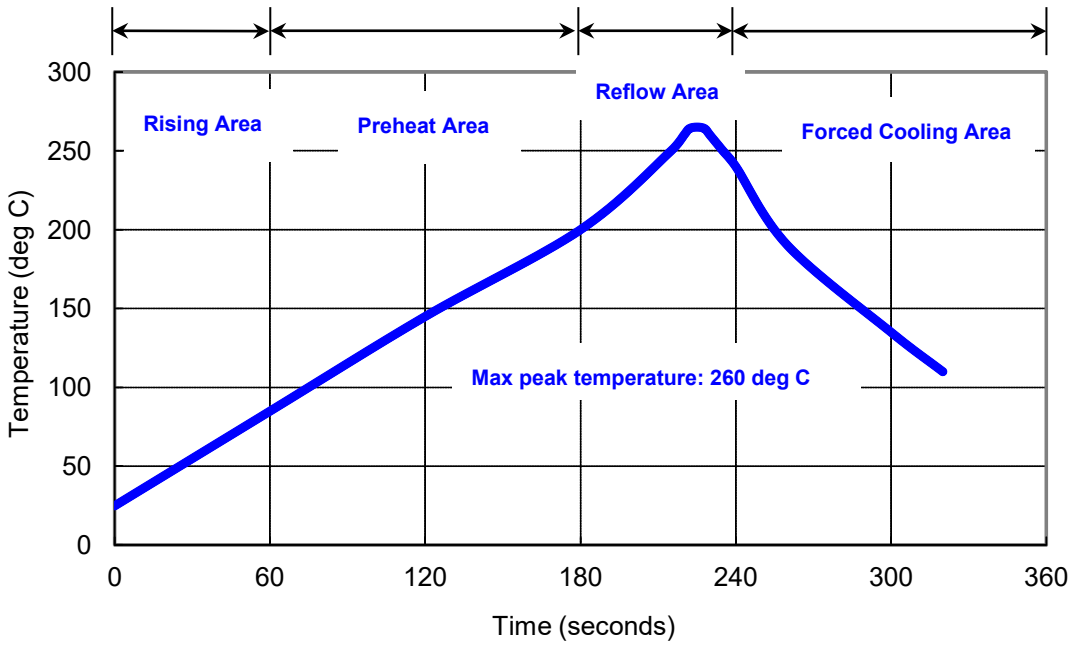
Product Code Table

Year	2021	2022	2023	2024
	2025	2026	2027	2028
	2029	2030	2031	2032
Product code	X	x	X	x

Date Code Table

Date Code Table												
WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45	WK46	WK47	WK48	WK49	WK50	WK51	WK52
n	o	p	q	r	s	t	u	v	w	x	y	z

Reflow Profile:



Notes of the Usage:

1. Touch the solder iron at 260+/-5 deg C onto the leads for 10+/-2 sec max or touch the solder at 350+/-5 deg C onto the leads for 3+/-0.5 sec.
2. In the customer's reflow process, if it will remain some mechanical stress at the soldering terminals, also make some cracks on the soldering termination. Some cracks will cause open or short circuit and cause of thermal increasing or smoking. Don't make any excess mechanical stress to soldering points.
3. In case of giving a heavy shock to the products, it may make an open or short circuit and cause of thermal increasing and smoking. To avoid heavy shock impact applying to products is strictly required.
4. Ultrasonic cleaning should be avoided to prevent damage to the TCXO.
5. Do Not Use Ultrasonic-Wave Soldering or Wave Solder with Package Immersed in Solder.

Notes of the Storage:

1. To keep products under the condition at the room temperature (-5~35 deg C) with normal humidity (45~75%). Absorption of moisture and dewdrop may make inferiority of characteristics and a short circuit.
2. Oxidization of terminals shall make the solderability more inferior. Dusts and corrosive gas will make a cause of the open or short circuit. Keep it in the clean place where is not in dusty and no corrosive gas.
3. Use the unti-static material to the storage package.
4. Don't put any excess weight to the VCTCXO in the storage process.
5. Don't move the product from the cold place to the hot place in the short time, otherwise it may make some dew-drop, then a short circuit may happen in case.
6. Storage periods should be maximum 6 months under condition of above item 1 after delivery from the factory.
7. Once open the bag, there is possibility of electrical characteristics deterioration due to absorption of moisture. So, please use parts within 7 days after opening the bag.
8. If you have to keep parts without using after opening the bag, please put the drying agent in the bag, fold the bag and keep it in the place where temperature and humidity are controlled (nitrogen atmosphere box etc.)

Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 265°C /10sec ×2 times Total time : 4min.(IR-reflow)	EIAJED-4701 -300(301)M(II)
Vibration	Total peak amplitude : 1.5mm Vibration frequency : 10 to 2000 Hz Sweep period 20 minute Vibration directions : 3 mutually perpendicular Duration 2 hr / direc.	MIL-STD 202G method 204
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202G method 213
Solderability	Solder Temperature:265±5°C Duration time: 5±0.5 seconds.	J-STD-002
Environmental characteristics		
Thermal Shock	Heat cycle conditions -40 ℃ (30min) ⟷ 85 ℃ (30min) * cycle time : 10 times	MIL-STD 883G method 1010.8
Humidity test	Temperature : 85 ± 2 °C Relative humidity : 85% Duration : 96 hours	MIL-STD 202G method 103
Dry heat (Aging test)	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 202G method 108A
Cold resistance (Low Temp Storage)	Temperature : -40 ± 2 °C Duration : 96 hours	IEC 60068-2-1