

Typical Applications

PCS Base Stations
 Land Mobile Radio
 Cellular Telephony
 Radio in the Local Loop

Previous Vectron Model Numbers

Frequency range

Standard frequencies

Features

Wide Frequency range
 Mechanical control
 EFC Standard
 Standard Surface Mount Package

STO150; STO150S3;

30 MHz – 100 MHz

37.72102; 64.0; 67.584 MHz



Frequency stabilities¹ [Standard TCXO]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-2.0		+2.0	ppm	-40 ... +85°C	F206
	-1.0		+1.0	ppm	-40 ... +85°C	F106
	-2.0		+2.0	ppm	-20 ... +70°C	D206
	-1.0		+1.0	ppm	-20 ... +70°C	D106
	-1.0		+1.0	ppm	0 ... +50°C	B106
	-0.5		+0.5	ppm	0 ... +50°C	B507
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.2		+0.2	ppm	V _S ± 5%	
vs. load change	- 0.2		+0.2	ppm	Load ± 10%	
vs aging /1. Year	- 1.0		+1.0	ppm		

Frequency stabilities¹ [Stratum 3 TCXO]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-0.8		+0.8	ppm	-40 ... +85°C	F807
	-0.28		+0.28	ppm	-30 ... +85°C	G287
	-0.8		+0.8	ppm	-20 ... +70°C	D807
	-0.28		+0.28	ppm	-20 ... +70°C	D287
	-0.28		+0.28	ppm	0 ... +50°C	B287
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.2		+0.2	ppm	V _S ± 5%	
vs. load change	- 0.1		+0.1	ppm	Load ± 10%	
vs aging /15 Years	- 2.5		+2.5	ppm		
overall tolerance	-4.6		+4.6	ppm		
(*Stratum 3 per GR-1244-CORE: <±4.6 ppm for all causes and 20 years aging, Holdover: <±0.37 ppm over 24 hours (Code: D287 & B287)						

Supply voltage (Vs)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Supply voltage [Standard]	3.135	3.3	3.465	VDC		SV033
Supply voltage [Option]	4.75	5	5.25	VDC		SV050
Current consumption			60	mA	steady state @ +25°C & 3.3VDC	
			50	mA	steady state @ +25°C & 5.0VDC	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal [Standard]	HCMOS					RFH
Load	13.5	15	16.5	pF	with Vs= 5.0V and 15pF load with Vs=3.3V and 15pF load with Vs= 5.0V and 15pF load with Vs=3.3V and 15pF load @ (Voh-Vol)/2	
Signal Level (Vol)			0.5	VDC		
Signal Level (Voh)	4.5		0.3	VDC		
Rise and Fall time	3.0		5	VDC		
Duty cycle	40	50	60	ns		
Subharmonics	-45			%		

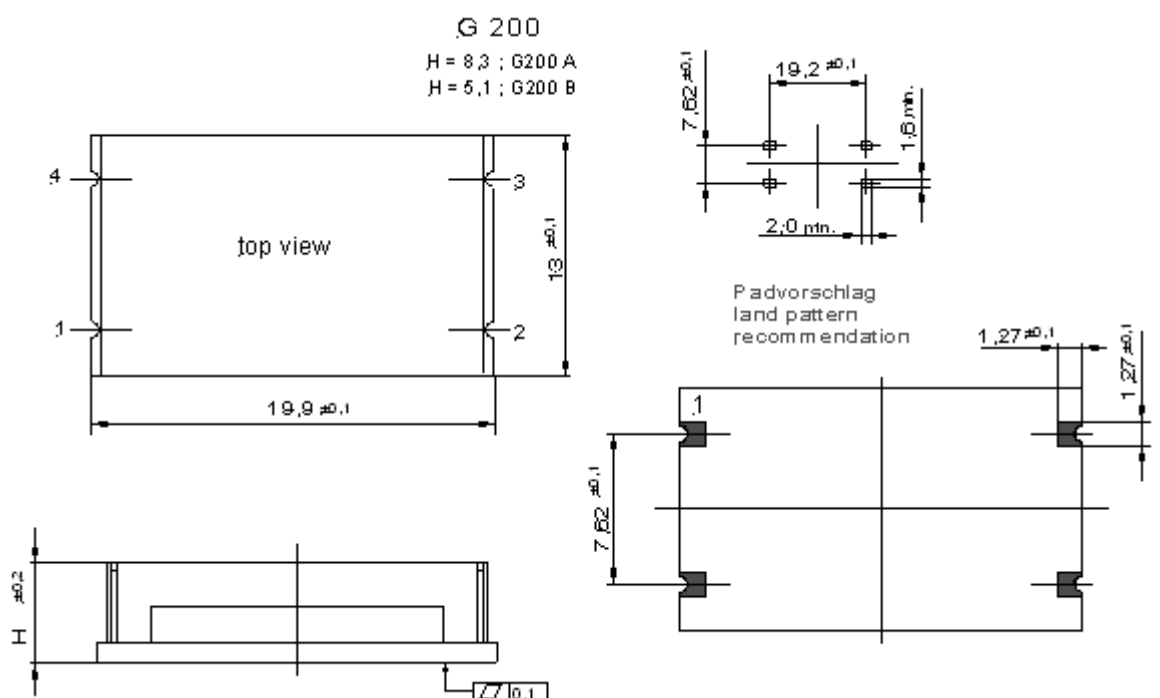
Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Mechanical (No EFC)	± 3.0				
Tuning Range	± 8.0	±14.0	± 20.0	ppm	Standard Version
	± 5.0	±12.0	± 20.0	ppm	S3 Version
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3VDC
	0.5	2.5	4.5	VDC	with Vs=5.0VDC
Freq. control input impedance	10			kΩ	

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise ³		-70		dBc/Hz	10 Hz @ 67.584MHz
		-105		dBc/Hz	100 Hz
		-130		dBc/Hz	1 kHz
		-145		dBc/Hz	10 kHz
		-150		dBc/Hz	100 kHz
Weight			5	g	
Processing & Packing	Handling & processing note				

Enclosures

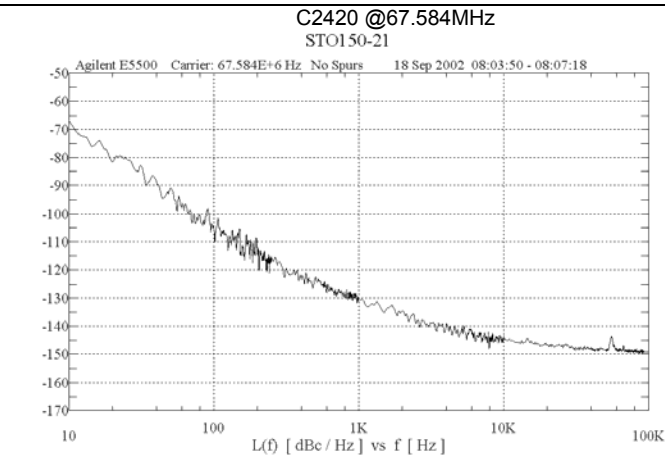
Type G200			
Package Codes:			
Code A1	Height "H" 5.1	Pin Length "L" NA	
<div style="text-align: center;"> <p>G 200</p> <p>H = 8,3 ; G200 A H = 5,1 ; G200 B</p> </div>  <p style="text-align: right;">Dimensions: mm</p>			
Pin Connections			
1 Voltage Control (Vc) 2 GND, case 3 RF output 4 Supply Voltage (Vs) Outline Drawing: G200			
Marking			
C2420A1-xxxx Frequency * C AYYWW			

Absolute Maximum Ratings

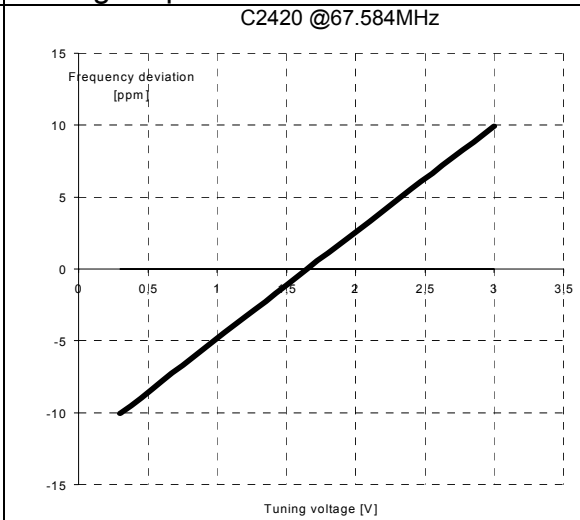
Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			6.0	V	
Control Voltage	0		Vs	V	
Maximum output load @ CMOS			40	pF	
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+125	°C	

Typical measurement data

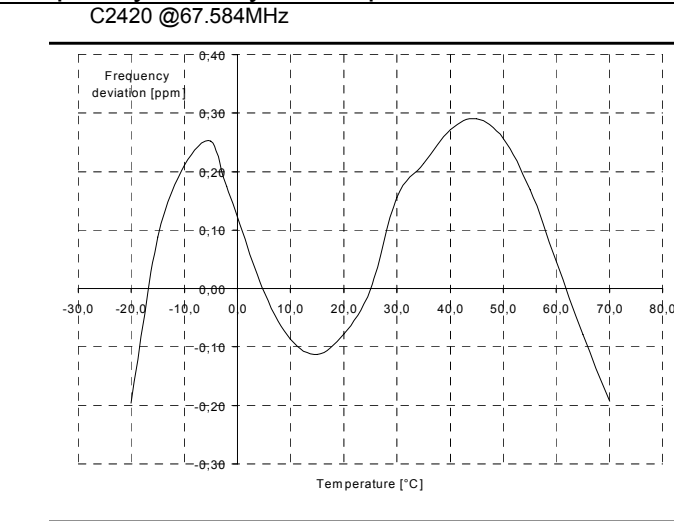
Phase Noise and Jitter



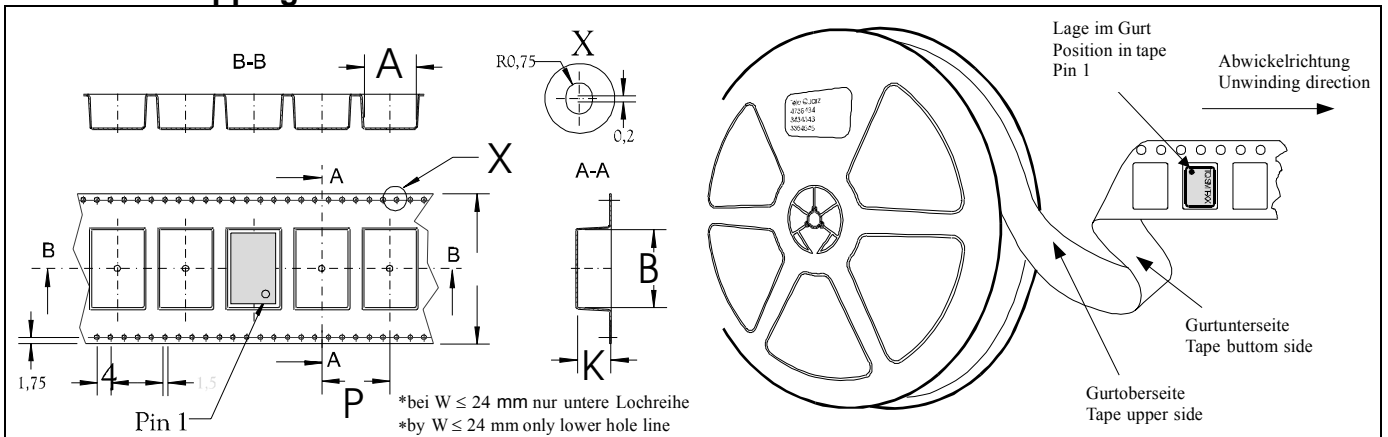
Tuning Slope



frequency stability vs temp



Standard Shipping Method

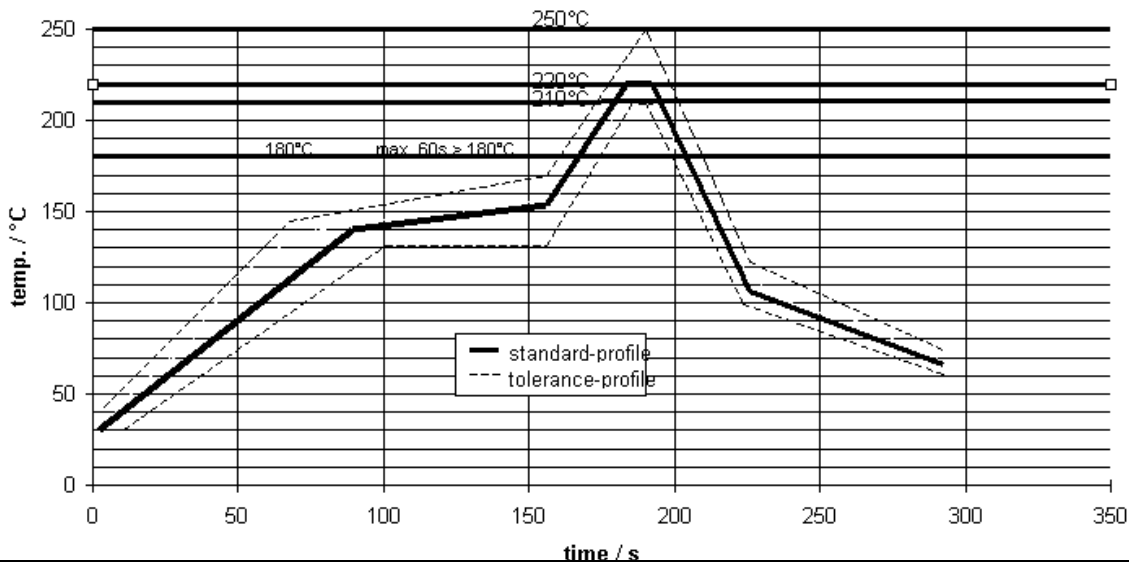


Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G200	32	50	380	20

Recommended Reflow Profile

standard-reflow-profile for SMD-oscillators



SMD oscillators must be on the top side of the PCB during the reflow process.

How to Order this Product:

Step 1	Use this worksheet to forward the following information to your factory representative:					
	Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency
	C2420					

Example: C2420 D206 SV033 RFC A1 12.8MHz

Step 2	The factory representative will then respond with a Vectron Model Number in the following Configuration:			
	Model	Package Code	Dash	Dash Number
	C2420	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C2420A1-0001

Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
- 2 Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C)
- 3 Phase noise degrades with increasing output frequency.
- 4 Subject to technical modification.
- 5 Contact factory for availability.