C2260 TCXO

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

Features
EFC Standard
Low Profile
Small Size
100 % RoHS compliant

Frequency range
6.4 MHz – 52 MHz

Standard frequencies
10; 12.8; 19.44; 20MHz, 20.48MHz

Frequency stabilities[1]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code[5]
vs. operating temperature range	-2.5		+2.5	ppm	-20 … +70°C	D256
(Referenced to +25°C)	-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	- 2.5		+2.5	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.5		+0.5	ppm	V_S ± 5%	
vs. load change	- 0.2		+0.2	ppm	Load ± 10%	
vs aging /1. Year	- 1.0		+1.0	ppm		

Frequency stabilities[1] [Stratum 3 TCXO] < 32MHz

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code[5]
vs. operating temperature range	-0.8		+0.8	ppm	-20 … +70°C	D807
(Referenced to +25°C)	-0.28		+0.28	ppm	0 … +50°C	B287*
	-0.28		+0.28	ppm	-20 … +70°C	D287*
	-0.80		+0.80	ppm	-40 … +85°C	F807
	-0.28		+0.28	ppm	-30 … +85°C	G287
	-0.28		-0.28	ppm	-40 … +85°C	F287
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		
					Note	
					* 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
Current consumption			6	mA	steady state @ +25°C	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code[5]
Signal [Standard]	clipped Sinewave				> 12.288MHz	RFC
Load R	9	10	11	kΩ		
|| C	9	10	11	pF		
Output power	0.7			V_{pp}	@ 10kΩ ||10pF	

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

Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	± 8.0	±14.0	± 20.0	ppm	
Linearity			10	%	
Tuning Slope		Positive			
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3VDC
Freq. control input impedance	10			kΩ	

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition	
Phase Noise[3]		-90		dBc/Hz	10 Hz	@19.44MHz
		-120		dBc/Hz	100 Hz	
		-135		dBc/Hz	1 kHz	
		-140		dBc/Hz	10 kHz	
		-145		dBc/Hz	100 kHz	
Weight			2	g		
Processing & Packing		Handling & processing note				

Absolute Maximum Ratings

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

Cross reference list

Vectron Part	Frequency [MHz]	Temp range C	Temp. Stability [ppm]	H/over Stab. [ppm]	overall Stab. [ppm]	Supply [V]		
C2260A1-0028	12,8	-20…70	±0,28	±0,37	±4,6	3,3		Semtech
C2260A1-0032	12,8	-40..85	±0,28	±0,37	±4,6	3,3		Semtech
C2260A1-0029	12,8	-40..85		±4,6	±20	3,3		Semtech
C2260A1-0021	20	-20…70	±0,28		±4,6	3,3		Zarlink
C2260A1-0009	20	-20..80	±0,28		±4,6	3,3		Zarlink
C2260A1-0015	20	-40..85		±4,6	±20	3,3		Zarlink

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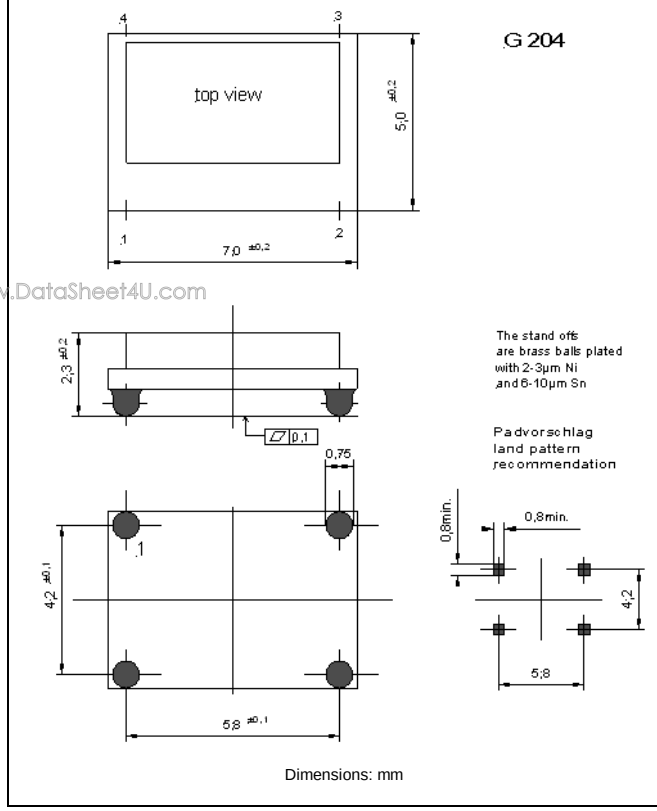
Enclosures

Type G204

Package Codes:

Code	Height "H"	Pin Length "L"
A1	3.0	NA

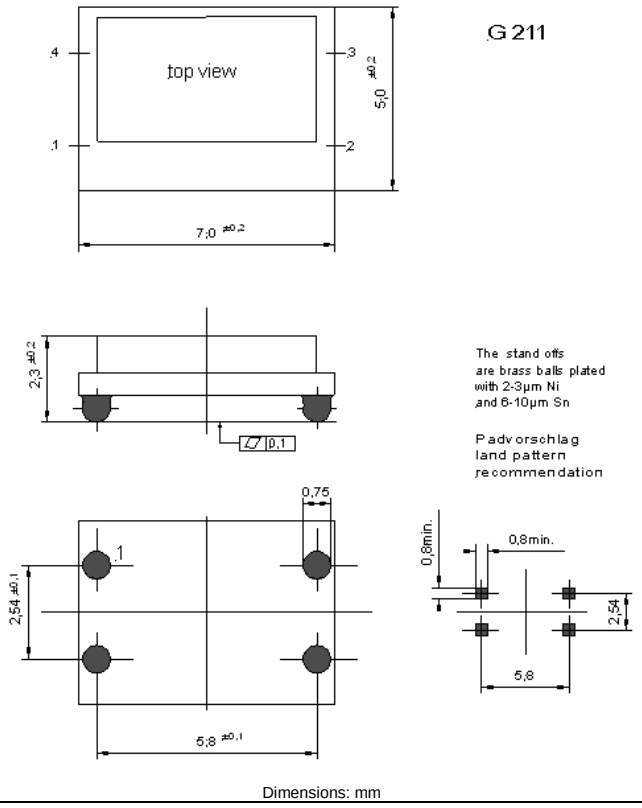


Dimensions: mm

Type G211

Package Codes:

Code	Height "H"	
B1		



Dimensions: mm

Pin Connections	
1	Voltage Control (Vc)
2	Ground (Case)
3	RF output
4	Supply Voltage Input (Vs)

Marking
C2260-xxxx frequency * C AYYWW

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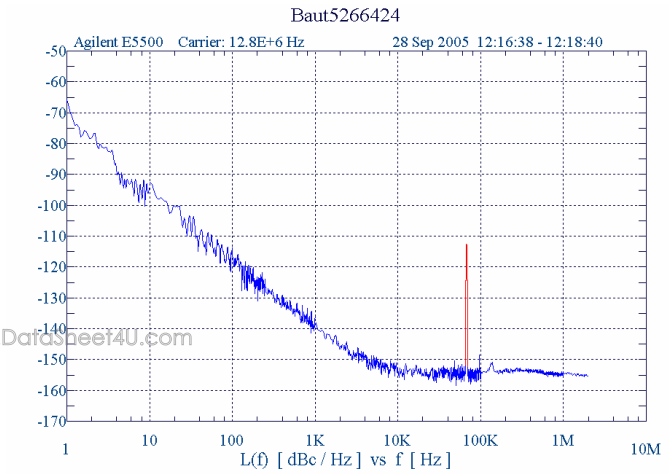
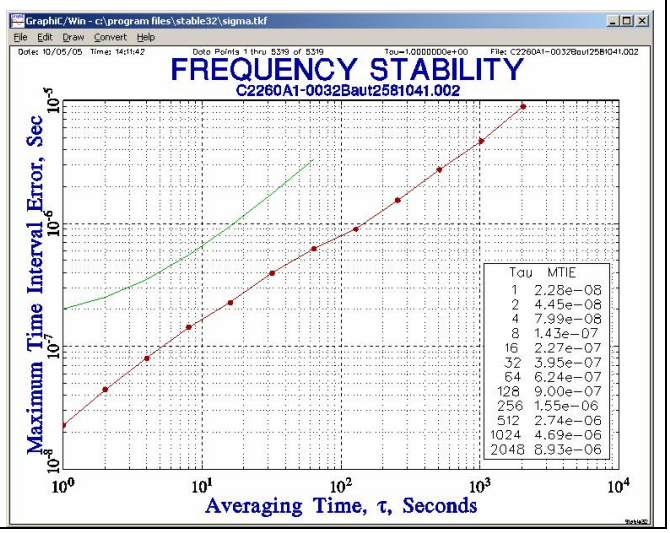
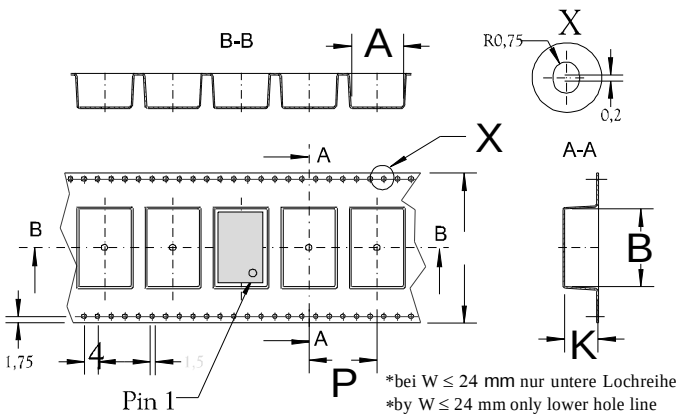
Typical measurement data

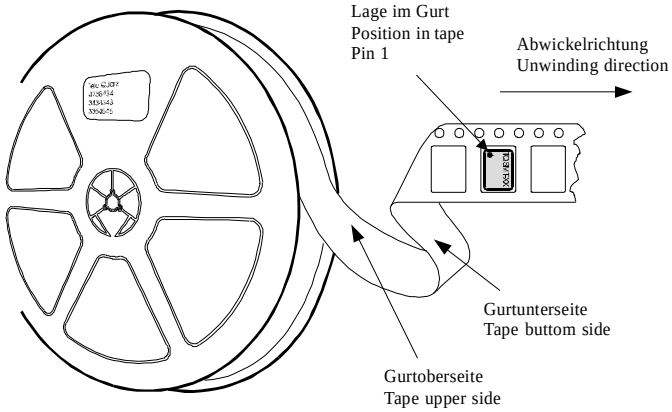
Phase Noise	MTIE according -1244-CORE:
C2260 @12.8MHz	C2260 @12.8MHz





Standard Shipping Method





Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P	
G204 /G211	12	150.	Tbd.	8	

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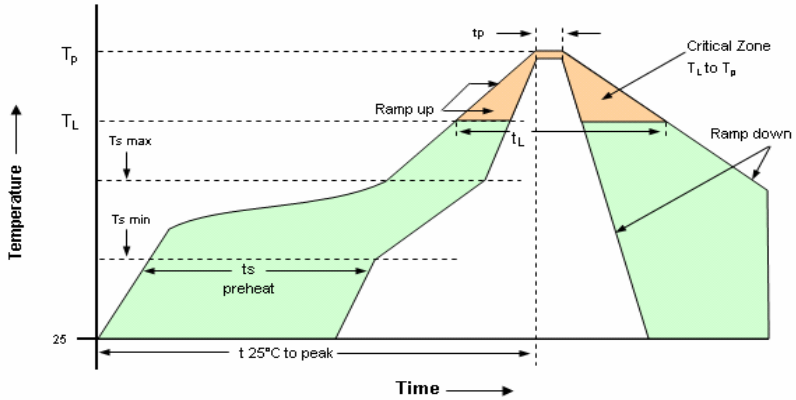
Recommended Reflow Profile

Solderprofile:



Profile Feature	Pb-Free Assembly /Sn-Pb Assembly	Profile Feature	Pb-Free Assembly /Sn-Pb Assembly
Average ramp-up rate (T_L to Tp)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min Ts_{min}) -Temperature Min Ts_{max}) -Time (min to max) (ts)	150°c 200°c 60-180 seconds	Time maintainted above - Temperature (T_L) - Time (t_L)	 217°C 60-150 seconds
Ts_{max} to T_L - Ramp-up Rate	3°C/second max.		
Time maintainted above - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Peak Temperature (Tp)	max 260°C	Ramp-down Rate	6°C/second max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

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**
C2260					
Example: C2260	*D106*	*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**
C2260	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C2260A1-0001

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.

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