

Helping Customers Innovate, Improve & Grow



Features

- EFC Standard
- Small Size
- 100% RoHS Compliant
- Low Profile
- Frequency range of 6.4 - 52 MHz
- Standard Frequencies: 10, 12.8, 16.384, 19.44, 20, 20.48 MHz

Applications

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

Previous Vectron Model Numbers - C2260

Performance Specifications

Frequency Stabilities ¹						
Parameter	Min	Typical	Max	Units	Condition	
vs. operating temperature range (referenced to +25°C)	-1.5		+1.5	ppm	-40 to +85°C	Options ⁵
	-1.0		+1.0	ppm	-40 to +85°C	
	-2.5		+2.5	ppm	-20 to +70°C	
	-1.0		+1.0	ppm	-20 to +70°C	
	-1.0		+1.0	ppm	0 to +50°C	
	-0.5		+0.5	ppm	0 to +50°C	
Initial tolerance	-2.5		+2.5	ppm	at time of shipment, nominal EFC V _s ±5% Load ±10% after 30 days of operation	
vs. supply voltage change	-0.5		+0.5	ppm		
vs. load change	-0.2		+0.2	ppm		
vs. aging / 1 Year	-1.0		+1.0	ppm		
Frequency Stabilities ¹ (Stratum 3 TCXO) <32MHz						
vs. operating temperature range (referenced to +25°C)	-0.80		+0.80	ppm	-20 to +70°C	Options ⁵
	-0.28		+0.28	ppm	0 to +50°C	
	-0.28		+0.28	ppm	-20 to +70°C	
	-0.80		+0.80	ppm	-40 to +85°C	
	-0.28		+0.28	ppm	-30 to +85°C	
	-0.28		+0.28	ppm	-40 to +85°C	
Initial tolerance	-1.0		+1.0	ppm	at time of shipment, nominal EFC V _s ±5% static Load ±5% static Note:*Stratum 3 per GR-1244-CORE: <±4.6ppm for all causes and 20 years aging, holdover: <±0.37ppm over 24 hours	
vs. supply voltage change	-0.2		+0.2	ppm		
vs. load change	-0.1		+0.1	ppm		
vs. aging / 20 Years	-2.5		+2.5	ppm		
Overall tolerance	-4.6		+4.6	ppm		

Performance Specifications

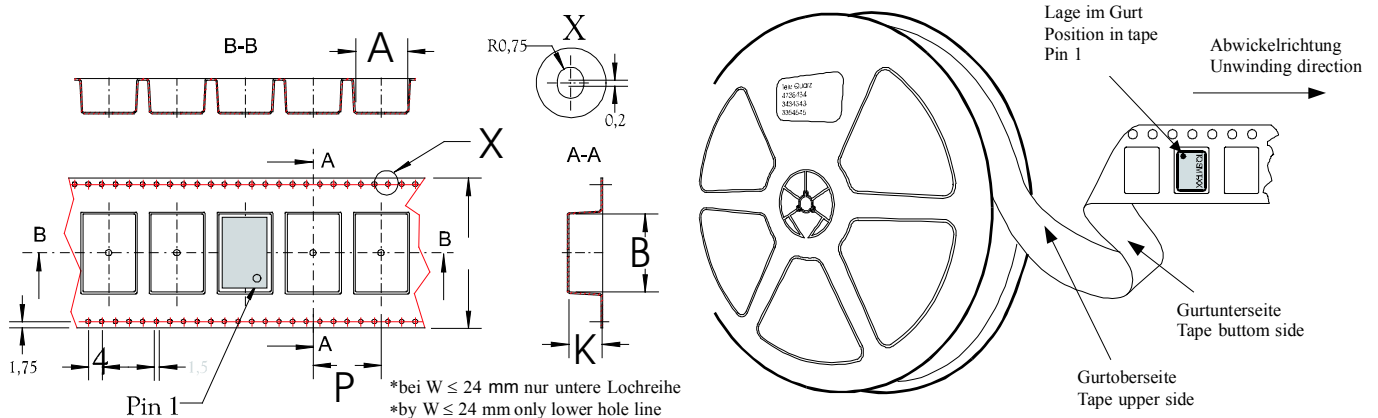
Frequency Stabilities ¹						
Parameter	Min	Typical	Max	Units	Condition	Options ⁵
vs. operating temperature range (referenced to +25°C) For 10, 12.8, 16.384, 20.26 MHz	-0.15		+0.15	ppm	0 to +50°C	
Initial tolerance	-1.0		+1.0	ppm	at time of shipment, nominal EFC V _s ±5% Load ±10% Note:*Stratum 3 per GR-1244-CORE: <±4.6ppm for all causes and 20 years aging, holdover: <±0.37ppm over 24 hours	
vs. supply voltage change	-0.2		+0.2	ppm		
vs. load change	-0.1		+0.1	ppm		
vs. aging / 20 Years	-2.5		+2.5	ppm		
Overall tolerance	-4.6		+4.6	ppm		

Supply Voltage (Vs)						
Parameter	Min	Typical	Max	Units	Condition	
Supply voltage (standard)	3.135	3.3	3.465	VDC		
Current consumption			6	mA	steady state @ +25°C	
RF Output (Clipped Sinewave)						
Load R	9	10	11	kΩ		
C	9	10	11	pF		
Output Power	0.7			V _{pp}	@ 10kΩ 10pF	
RF Output (HCMOS)						
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)						
Tuning Range	Fixed TCXO; No adjust					Option ⁵
Tuning Range for Stability: 807, 287, 157 / Stratum 3 Version	±5.0	±14.0	±20.0	ppm		
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=3.3V	
Freq. control input impedance	10			kΩ		
Enable (instead of EFC)	True table Pin 1 High Open Low		RF_out Pin 3 Data Data High Tristate			
Additional Parameters						
Phase Noise ³		-65 -95 -120 -145 -152		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	1 Hz 10 Hz 100 Hz 1 kHz 10 kHz	@ 10MHz
Weight			8.0 g			
Processing & Packing	Handling & Processing Note					
Reflow Profile	IPC / JEDEC J-STD-020 (latest version)					
Absolute Maximum Ratings						
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)	Holdover Stability (ppm)	Overall Stability (ppm)	Supply (V)	
C2260A1-0028	12.8	-20 to +70	±0.28	±0.37	±4.6	3.3	Semtech
C2260A1-0032	12.8	-40 to +85	±0.28	±0.37	±4.6	3.3	Semtech
C2260A1-0029	12.8	-40 to +85		±4.60	±20	3.3	Semtech
C2260A1-0021	20	-20 to +70	±0.28		±4.6	3.3	Zarlink
C2260A1-0009	20	-20 to +80	±0.28		±4.6	3.3	Zarlink
C2260A1-0015	20	-40 to +85		±4.6	±20	3.3	Zarlink

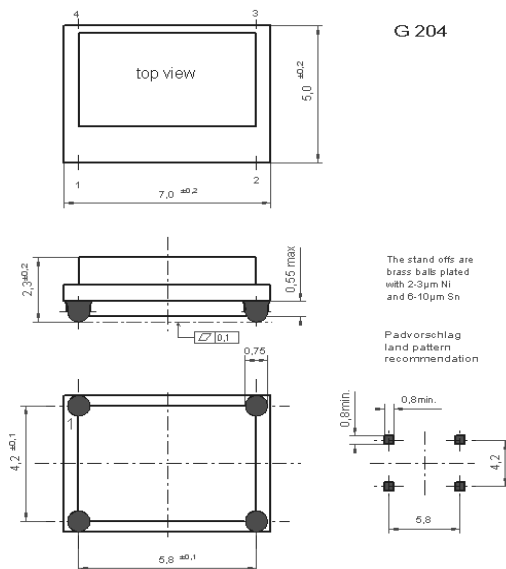
Standard Shipping Method



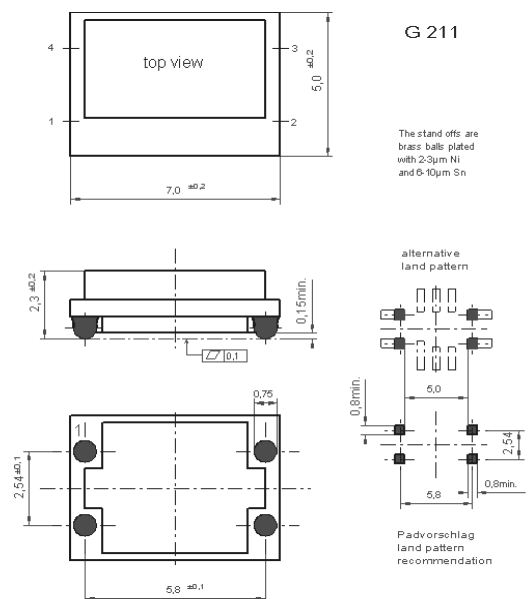
Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
G204/G211	12	150.	750.	8

Outline Drawing / Enclosure

Package Codes: 700		
Type	Height “H”	Pin Length “L”
G204	2.5	NA



Package Codes: 701	
Type	Height "H"
G211	2.5



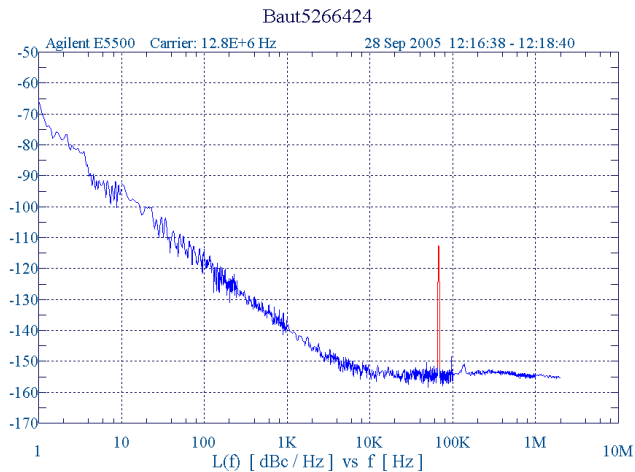
Pin Connections	
1	Voltage Control (Vc) / Enable / N.C
2	Ground (Case)
3	RF Output
4	Supply Voltage Input (Vs)

Marking
TX-700
Frequency
● AYYWW

Typical Performance

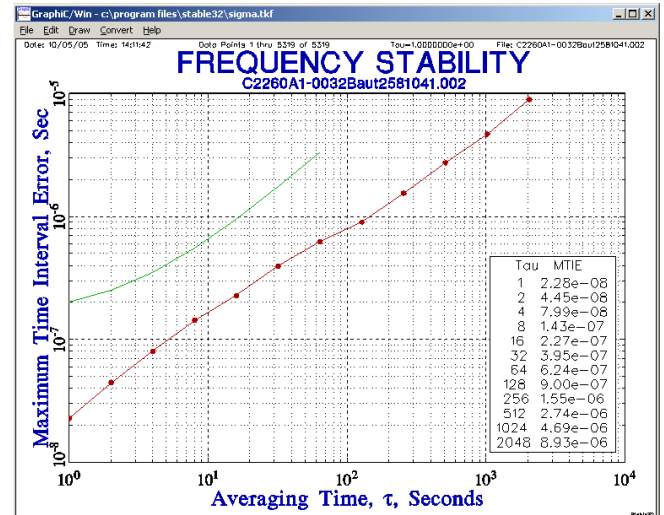
Phase Noise

C2260 @ 12.8 MHz

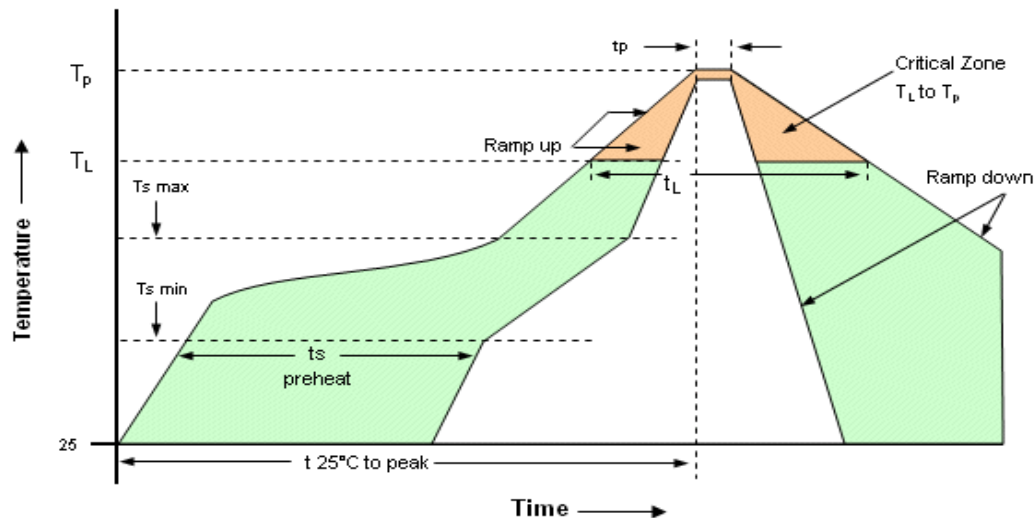


MTIE according-1244-CORE:

C2260 @ 12.8 MHz



Recommended Reflow Profile

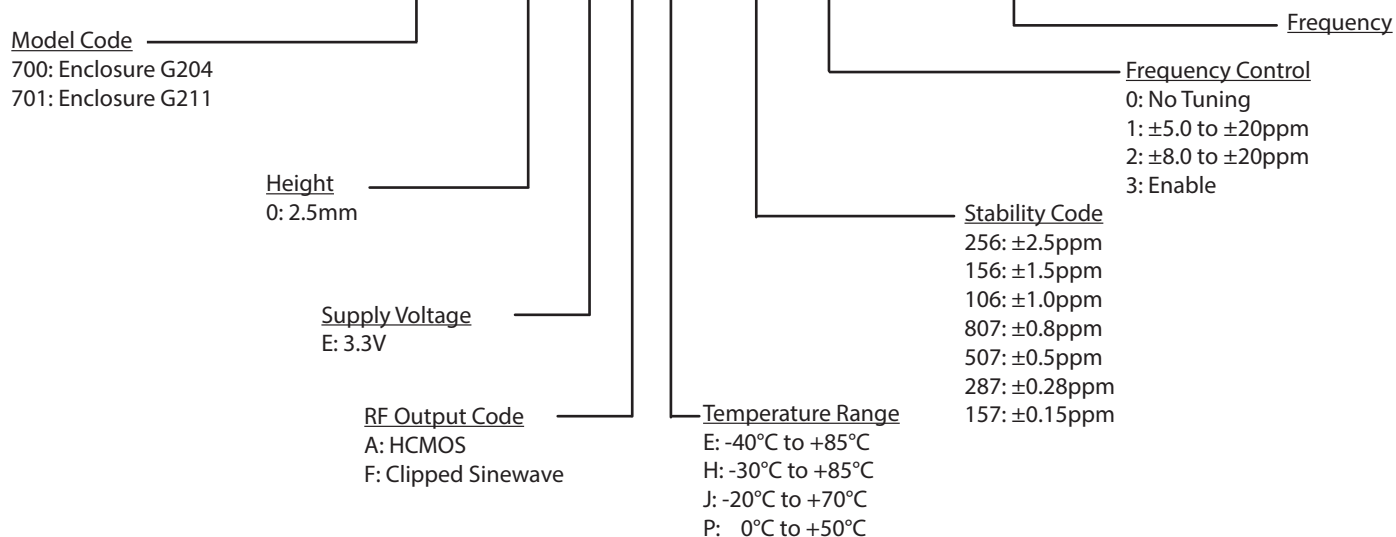


Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly	Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly
Average ramp-up rate (T_L to T_p)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min $T_{s \text{ min}}$ -Temperature Min $T_{s \text{ max}}$ -Time (min to max) t_s	150°C 200°C 60-180 seconds	Time maintained above -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
$T_{s \text{ max}}$ to T_L -Ramp-up Rate	3°C/second max		
Time maintained above -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Peak Temperature (T_p)	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.
SMD oscillators must be on the top side of the PCB during the reflow process.

Ordering Information

TX-70X 0 - E A J - 256 0 - 10M0000000



Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other 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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